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IN ENGLISH SYNTAX

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THE UNIVERSITY OF ALBERTA

FOCUSED NOUN PHRASES IN ENGLISH SYNTAX

BY



JOHN KENNETH CHAMBERS

A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Focused Noun Phrases in English Syntax" submitted by John Kenneth Chambers in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

This thesis proposes a framework for incorporating focus into the standard model of a transformational generative grammar. First a number of syntactic processes of English are analysed in the course of developing, extending and supporting a notion of focus. Then the attempt to formalize the notion provides a perspective for evaluating several of the tenets of the standard model.

A duck's legs, though short, cannot be lengthened without discomfort to the duck; a crane's legs, though long, cannot be shortened without discomfort to the crane. --Chuang-tzu

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All members of the examining committee contributed to the final form of the thesis. Gunter Scharshmidt in particular offered a number of critical comments which led to the improvement of the syntactic analyses.

Several of my peers also contributed information, criticism or consolation, as required, especially Paul Fletcher, Peter Harris, Dick Laurin and P.G. Patel.

Julie Werenka typed the manuscript.

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PREFACE

It is the purpose of this thesis to incorporate into the standard model of transformational generative grammar the notion that several permutation processes have the effect of placing 'in focus' certain noun phrases in the underlying representation.

§1 While the notion of 'focus' is perhaps impossible to define, its significance for grammars has nevertheless been assumed by linguists from Sweet to Lakoff. Psycholinguistic studies have suggested that, for example, active and passive sentence types do not occur in free variation but are conditioned by the "focus of attention" in the encoding situation. Grammatical approaches to focus have, however, been rare, and generative grammars have failed to distinguish between 'focus variants' like the active and passive and 'stylistic variants'. Moreover, focus as a descriptive term finds utility in grammatical studies of child language, which can be interpreted quite naturally as having the structure "focus + frame". The relative inattention to focus in grammars may be a reflex of the historical accident that recent developments in syntactic theory have been concentrated on a few European languages, especially English. There exist several languages, mainly Austronesian and Amerindian, for which focus must form part of an adequate grammatical description. A cursory inspection of selected data from two such languages reveals that the exotic

focus devices find their most natural translation equivalents in English non-declarative sentence types like passives, dativized indirect objects and cleft sentences.

§2

The question then arises as to the manner in which the notion of focus might be incorporated into the grammatical model. Since focus is semantically significant, the standard theory requires that it be accounted for at the level of deep structure. One possibility is to select in the base component a feature [+FOCUS] which then forms part of the formative matrix. Such an innovation has the further advantage that it can serve as a triggering device for certain transformations, in addition to its role in semantic interpretation.

This procedure, however, is diametrically opposed to the best-known alternative proposal for accommodating focus in generative grammar, which is due to Chomsky (1969). The alternative proposal maintains that focus must be determined at the level of surface structure on the basis of the phrase containing the intonation centre. Such a proposal might be labeled "surface focus" to distinguish it from the proposal for "deep focus" above. Obviously, surface focus encounters two problems a priori which are not encountered in deep focus. First, it requires that the grammatical model give up the constraint on specifying semantic information in the deep structure. Secondly, surface focus will necessarily be syntactically inconsequential. Furthermore, a closer inspection of surface focus reveals that it introduces a number of other

problems. First, the equivalence of 'focus' and 'intonation centre' cannot accommodate structures with more than one occurrence of contrastively stressed elements. Secondly, the notion of the "phrase containing the intonation centre" reintroduces into linguistic theory certain problems of immediate constituent analysis involving discontinuous phrases. For example, surface constituent structures of two sentences which are stylistic variants in the sense that one has undergone a semantically insignificant permutation, such as particle movement, are considerably different, and must be construed as focus variants of one another. Finally, the notion that there must always be a focused "phrase" in every sentence, regardless of syntactic structure and intonation contour, is inextricably bound up with the notion that there are sentences in which nothing is presupposed, which constitutes a semantic paradox.

§3 Proceeding, then, with the development of the notion of deep focus, we examine the processes of passivization and dative movement as obligatory transformations triggered by the specification [+FOCUS] on certain constituents in the underlying structure. However, an attempt to integrate the focus interpretations of passivization and dative movement into the syntactic component proves problematic, and leads to the proposal that deep focus be refined by introducing a syntactic distinction in terms of two features, [+TOPIC] and [+FOCUS], in which the former triggers rules which, like passivization, prepose

constituents, and the latter trigger rules which, like dative movement, postpose constituents.

§4 Some standard analyses of syntactic processes are then reanalyzed within the framework of deep focus developed to this point. Upon considering interrogatives, expletive constructions, and flip, among other transformations, a general syntactic process of topicalization is factored out of the specific rules in which it had formerly been repeated.

§5 A further distinction among focus devices is motivated by the analysis of dislocation, clefting and contrastive stress, which can apply to structures which have already undergone other focus devices. This analysis leads to the postulation of another syntactic feature, arbitrarily written [+FILL], in the underlying representation of structures which undergo dislocation, clefting or contrastive stress.

§6 An attempt to formalize the theory of deep focus provides a perspective for evaluating several of the current tenets of generative grammar. In the first place, the proposed rules of the base component are shown to arbitrate in favor of two proposed revisions in the base component, namely, the use of packing rules which specify prelexical complex symbols for base categories, and the specification of feature matrices for nonlexical categories. Secondly
§7 the broader issue of structure-building by transformation is examined critically, and some proposals are put forward to accommodate structure-building with the grammatical model.

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§1: A NOTION OF FOCUS

The most important concept introduced in this thesis is the concept of "focus". For it is the purpose of the thesis to reanalyze several processes in English syntax under the assumption that they have as their common effect the reorganization of underlying syntactic structures for the purpose of bringing 'into focus' the constituents which are semantically prominent in a given utterance. That is, I assume that much of the variety of English surface structures is a function of actualizing focus or emphasis. This assumption is a venerable one, and has been articulated by many traditional and structural grammarians, perhaps never so extensively as by Henry Sweet in his New English Grammar of 1893.

Surprisingly, it has seldom been considered as a general process of syntax in transformational generative theory, and never in as extended a study as this one. (Cf. §2.4 and §7.4 for two other proposals for focus in generative theory.) As a result, this thesis is programmatic. It does not propose solutions so much as present a framework for analysis. At the outset it states certain assumptions which are then shown to be productive of some not inconsiderable generality in the organization of the syntactic component; but these are stated with an awareness that different assumptions are possible, and may indeed turn out to be ultimately more productive.

It is the hope of this or any similarly programmatic work that it will prompt the further research required to discover to what extent its assumptions can be improved upon.

Aspects of the focus interpretation of syntax which require further research are noted at many points below. Three of them arise as general restrictions upon the subject matter and deserve special notice. In the first place, I have restricted my analysis for the most part to noun phrases. Other categories are considered only cursorily (cf. esp. §3.4.2). Secondly, I have developed the formal framework largely on the basis of simple sentences. The notion of focus needs to be critically extended to embeddings. Relativization in particular provides examples which suggest that the formalism below cannot simply be generalized to apply to embeddings as well. Specifically, in a sentence like "I knew the man devoured by the ant", the present analysis would maintain that in order to trigger passivization the deleted relative element must be the topic of the embedded S whereas its otherwise coreferential noun phrase, "the man", is not the topic of the higher S. The deletion of the embedded topic is therefore irrecoverable. Thirdly, I have restricted the data on which the model is based to English syntax. Data from other languages figure only peripherally in the thesis. Attempts to apply the assumptions and concepts developed here to other languages might at least provide insights into how those assumptions and concepts can be refined, especially detailed application to languages which are less covert than English in their focus devices (cf., for example, §1.3.2).

On the other hand, the present formulation of focus reveals generalities about English not heretofore described. The processes of passivization, dative movement, interrogation, flip, dislocation and clefting, among others, usually treated as unrelated phenomena, are revealed as a natural class of focus devices in §3, §4 and §5. A distinction between 'focus variants' and 'stylistic variants' is formulable, thus refining the characterization that "different outputs produced by optional singulary transformations are merely stylistic variants having the same cognitive meaning" (Katz and Postal 1964: 112), and permitting as a corollary a delimitation upon the role of optionality in derivations (cf. §2.3). The focus devices undergo a natural simplification in their statement by factoring out the shared process of "topicalization" in §4. Finally, the attempt to incorporate the regularities provided by focus into the standard theory of generative grammar leads to a perspective for re-appraising several of the current tenets about the organization of a grammar, in §6 and §7.

In the remainder of §1, I present discursions on the notion of focus in general. In §1.1, some psycholinguistic studies of "focus of attention" are reviewed with the intention of suggesting the extra-grammatical reality of focus in language behavior. In §1.2, the utility of the formal notion of focus is suggested by its application to descriptions of child language. In §1.3, speculation on the universality of focus as a formal concept is presented.

1.1. Some studies on "focus of attention"

Recently several studies have been undertaken to determine the effect of "focus of attention" in the stimulus situation on the syntactic structure which it elicits as response. Significantly, all of them have been restricted to active/passive structures, as the best-known and perhaps most familiar constructions which are felt to be focus variants of one another. Some of the experiments have been models of simplicity. For example, Carroll (1958) 'staged' certain happenings for his subjects, and then questioned them about what had transpired. As predicted, he found that when the subjects were questioned in terms of what an actor-subject had done, there were significantly more responses in the active than in the passive. The converse also held: when the subjects were questioned on what had happened to the acted-upon-object, there were significantly more responses in the passive.

Similar results have been obtained in experimental studies which utilize a somewhat more elaborate design. For example, Turner and Rommetveit (1968) presented subjects at the five earliest grade levels with a set of active and passive sentences and related pictures showing either the actor element, the acted-upon element or the "total picture content". Then the subjects were asked to recall the sentences as they looked again at the pictures. As predicted, when the stimulus sentence was in the active voice, both the picture of the actor and the picture of the total content facilitated correctness of response. Moreover, when the

stimulus sentence was in the passive, the picture of the acted-upon element facilitated correct recall. Furthermore, "the actor and total retrieval pictures tended to facilitate the transformation of passive sentences to the active voice in recall, and the acted-upon picture tended to facilitate transformations from active to passive voice" (1968: 547). In all cases, the scores were significant.

Of more direct interest to the present grammatical analysis of focus is a study by Tannenbaum and Williams (1968), who presented older subjects with pictures showing, say, a train hitting a car, and asked them to describe the drawing, with the stipulation that their description be in a particular voice. Prior to the presentation of the pictures, the subjects read aloud a "preamble" in either the active or the passive voice. For example, in the condition where focus was on the actor of the picture and the preamble was in the active voice, they read the following:

The Train--Trains provide an efficient means of transportation for the traveller. First, a train eliminates the problem of traffic jams. In addition, a train can maintain a constant speed for faster travel. [Etc.]

Other subjects were presented with actor-focus, passive voice preambles ("An efficient means of travel is provided by trains..."), some with object-focus, passive voice ("The car is used widely only by people living in the richest countries..."), and others with object-focus, active voice ("Only people living in the richest countries use the car widely..."). Under these varied conditions, the investigators measured the latencies between presentation of the stimulus

and completion of the responses in the stipulated voice. As predicted, the subject-focus preambles proved to facilitate correct responses in the active voice and to impede correct responses in the passive voice, in terms of relative latency measures, and the converse obtained as well.

The relevance of Tannenbaum and Williams' study to this thesis is that they directly address the familiar notion that active and passive sentences are merely 'stylistic variants'. Their conclusion (1968: 249) is as follows:

Thus, in terms of the main theoretical issue underlying this experiment, the results do indicate a decided effect of the conceptual-focus manipulation upon readiness to encode in active and passive forms. Such a finding tends to corroborate the original rationale that while the two sentence forms may be treated as somewhat redundant, there is a functional distinction between them stemming from different demand characteristics of the encoding situation.

Their conclusion has a formal analogue in the framework of grammatical focus which follows, in the distinction between 'focus variants' and 'stylistic variants' (cf. §2.3).

The question may arise as to the possibility of the focus interpretation of English syntax 'embodying' or 'reflecting' the results of experiments such as those reviewed here. The answer, of course, is that it cannot. The formal model does not include variables from the empirical domain, and hence says nothing about the "encoding situation". Even if it did, current generative grammar could not in principle deal with the discourse context, since it has as its purview the sentence itself and not its context. Thus the terms like [\pm FOCUS] in the grammar are primitives, and their only justification is in the generalities they allow the grammar

itself to express.

1.2. Focus in a grammar of child language

In this section I want to extend the notion of focus by showing that it may also be useful in descriptions of child language. Of particular interest in this discussion is the class of utterances called topic-comment, or pivot-open class, or telegraphic constructions, which have been recorded by many investigators during the early stages of syntactic ontogeny.

Gruber (1967) analyzes such constructions in terms of generative theory. He finds the utterances to be generable by a simple grammar in which the first rule is (1):

$$(1) \quad S \rightarrow NP + S'$$

where NP is the 'topic' and S' is the 'comment'. A sample of the data, all from the same two-year-old subject, which he cites as having this form is the following:

- (2) (a) Dump truck all fixed.
- (b) Truck broke.
- (c) Wheel in there.
- (d) Mama goes.

In addition to sentences like these, he also notices utterances in which the topic and comment occur in reverse order. Thus, he posits a permutation rule which applies optionally to strings like (2) in order to account for data like (3):

- (3) (a) All broken wheel.
- (b) Break pumpkin.
- (c) In there wheels.

(d) Go Truck.

Such data are well attested in acquisition studies, and Gruber's analysis to this point adheres in outline to those of other investigators. For example, Braine (1963) gives the following "formulae" instead of rules to account for constructions like (2) and (3), respectively:

$$(4) \quad X P_2 \text{ and } P_1 X$$

where P_1 and P_2 are small sets of "pivot" words and combinations which form syntactic "frames" in which the large, open "X-class" words, largely nouns, occur. Braine says that his formulae are probably generative; when the terminological and notational differences between Gruber's and Braine's analyses are neutralized by expressing Braine's formulae as rules, the two analyses are very similar indeed:

$$(5) \text{ (a) } S \rightarrow P + X$$

$$\text{ (b) } P \rightarrow \left\{ \begin{array}{l} P_1 \\ P_2 \end{array} \right\}$$

The main difference is in the permutation transformation, which in Gruber's analysis operates on any occurrence of $\underline{S'}$, but in Braine's analysis operates obligatorily on the subset P_2 of P ($=\underline{S'}$). Because the Braine children were slightly younger than Gruber's subject--18 months compared to two years--the difference may be indicative of a maturation stage (Gruber 1967: 447). The similarities in data are evident in a comparison of (2) and (3) with (6) and (7), respectively:

$$(6) \text{ } XP_2 \text{ constructions (Braine 1963: 5)}$$

(a) airplane all gone

(b) airplane by (= 'A plane is flying past.')

(c) clock on there

(d) mama come

(7) P₁X constructions (Braine 1963: 7)

(a) whoa cards (= 'The cards are falling.')

(b) get ball

(c) there book

(d) see ball

Similar data have been collected by Brown and Fraser (1964: esp. 53-68), Miller and Ervin (1964: 13-25), and others.

Unlike other investigators, Gruber projects his analysis beyond the data by suggesting that the telegraphic constructions of childhood are prototypes of constructions like (8) in adult speech, which is also generable by a grammar that includes rule (1):

(8) Salt, I taste it in this food.

Moreover, as he points out, while constructions like (8) are "somewhat accessory to the adult grammar of English", they are major sentence types in some languages, like Chinese and Japanese. He might also have noted that such constructions have more than "accessory" status in some dialects of English. The sentences in (9) are a sample of such constructions culled from transcriptions of an American Negro dialect in Washington, D.C. (Loman 1967: 88, 157, 158, orthography normalized):

(9) (a) Well division, it isn't too hard.

(b) My teacher, she said I was too slow.

(c) Flint, he destroyed him.

(= 'Our man Flint' slaughtered someone.)

- (d) Girls in the can....they...made them go to the boat.
 (= Flint and some others made the girls in the can
 go to the boat.)

Similarly, Houston (1969: 606) cites pleonastic constructions such as these as one of "the four major syntactic differences between Child Black and standard White English" that she has so far observed in the dialects of northern Florida.

What I would question in Gruber's analysis is his further projection from the data which leads him to conclude that topic-comment (or pivot-open, class) constructions are formal precursors of subject-predicate constructions. The rule (1) is, he claims, the basis for the rule (10), which ultimately 'replaces' it in adult grammars:

(10) S → NP + VP

Many of the data from child language belie a simple equivalence of "topics" and "subject NP's", just as (8) and (9d) do.

An equally plausible interpretation, it seems to me, is one which maintains that the topic-comment constructions provide a primitive device for realizing semantic focus. In this view, we assume an early stage in language acquisition in which structures are comprised of a frame supplying minimal syntactic information and a focused constituent, usually a noun. It follows that focus takes on a central role in syntactic ontogeny, insofar as the evolution of an increasingly complex grammar includes the development of alternative devices by which focus may be realized. This interpretation

is a somewhat more specific statement of McNeill's conjecture (1966: 51) about language ontogeny:

Children, according to this view, begin their grammatical careers with the part of syntax that is necessary to semantic interpretation and only later attach the grammatical machinery that in mature grammar provides input to phonological interpretation.

This "focus-frame" analysis of child language also accounts for the "accessory" status of constructions like (8): as alternative devices of greater semantic subtlety develop, the utility of such constructions diminishes. As a corollary, this analysis makes a prediction about English dialects in which pleonastic constructions like (9) have more than accessory status: such dialects should reveal a compensatory relegation to accessory status of certain focus devices found in standard dialects, such as, say, passivization or dative movement or clefting. While such a result seems not unlikely, we must await the publication of more complete and more adequate grammars before it can be asserted (or denied) with any confidence.

1.3. Focus as a language universal

It might be useful at this point to dispel any ideas that focus is merely an ad hoc construct which just happens to apply to a number of otherwise quite disparate English data. In fact, it has been designated a universal phenomenon which must form part of an adequate description of English or any other language. This viewpoint is gaining currency in generative theory as the semantic component becomes a more central concern. Fillmore (1968: 57-58) devotes some comment to it under the heading 'secondary topicalization'.

Saltarelli (1969) outlines a grammatical model in which focus is the basis of organization (cf. §7.4). Lakoff¹ (1969: 3) says, with little further comment, that a semantic representation (SR) has the schema (11):

$$(11) \text{ SR} = (P_1, \text{PR}, \text{Top}, \text{F}, \dots)$$

where P_1 is the phrase-marker which is input to the transformational component, PR is a "conjunction of presuppositions", Top is the topic, and F is the focus. But the claim of universality has not yet been elaborated.

The possibility of adducing 'evidence' for the universality of a phenomenon is always slight. Perhaps at best one could compare the results of theoretically equivalent analyses of remote languages to show that they shared particular processes. The lack of available analyses precludes this. As an approximation to this, one might apply a theoretical framework to selected data from several languages, as Bach (1965) has done to illustrate the recurrence of the relativization process. Even this is not possible for focus, since the theoretical framework is not yet available. Nevertheless, an inferential argument seems possible. I propose to show how selected data from two very different languages require a formal theory of focus for their description. This, of course, is evidence that focus can be a part of a linguistic description, not that it must be. The inference I hope to draw from this is one that has been borne out several times before in generative analyses: viz, that grammatically significant categories which occur widely but not universally

in surface structures are very often found to be universally present in the deep structure analyses of generative grammars. Even those who have little patience with generative theory are sometimes willing to concede this (cf. Hockett 1968: 3fn). As instances, recall such features and categories as animate/inanimate substantives and alienable/inalienable genitives, both of which have long been recognized in analyses of Algonkian, Siouan, and many other languages but were not considered in traditional grammars of English. Recently, however, the role of these entities as features and categories in English deep structures has been demonstrated (cf., for example, Chomsky 1965: 75ff, on animateness; Fillmore 1968: 61-81 and Chomsky 1968: 17, on inalienable possession; §6.3.2 below presents an analysis of inalienable possession in English).

With this in mind, I present some data from Algonkian and Tagalog which reveal grammatical focus in surface structures. Additional data are available for Arabic (Anshen and Schreiber 1968) and Ata Manobo (Austin 1966). Though this type of argument is weak and the evidence controvertible, it is probably the best argument available right now. Hopefully, the case for certain English focus devices will be strengthened by the references to translation equivalents throughout the exposition.

1.3.1. An inflection focus device in Algonkian. "Obviation" is Bloomfield's term for the inflectional paradigm in Algonkian which distinguishes a semantically prominent third-person noun

from other non-first-person and non-second-person nouns in the same utterance. The semantically important noun, sometimes called the "proximate" (Hockett 1966: 60) or simply the third person, undergoes one paradigm, while the less important, called the "obviative" (Bloomfield 1946: 94) or fourth person, undergoes another. Some Algonkian languages preserve a third inflectional paradigm, the "farther obviative" or fifth person, for nouns which are semantically even less prominent in the utterance than the obviative. That obviation is a focus device seems quite clear, and indeed the term "focus"--in a metaphoric sense--has already been applied to it by Don Frantz (1965: 51). In his explication of obviation in Blackfoot, Frantz gives the following account:

Within a narrative the major character is identified as 3 [= proximate]; all other animate characters are subordinate to him and are identified as 4 [= obviative] or 5 [= farther obviative]. This serves as a focus device, for 3 is on camera and other characters are less prominent.

He also speaks of shifts within the narrative from the obviative to the proximate inflection for a noun as "shifting the focus".

That the same phenomenon is present in English though not as obviously marked on the surface as in Algonkian is suggested by English translational equivalents for Algonkian sentences involving proximate and obviative nouns. For example, notice the following Cree sentences:

- (12) (a) okimaaw iskweew-a kitoteew
 (= chief-3 woman-4 3-talks-to-4)

(b) okimaaw iskweew-a kitotik

(= chief-3 woman-4 4-talks-to-3)

Sentence (12a) finds an adequate translation in (13a). However, (13b) leaves unexpressed a part of the meaning of (12b):

(13) (a) The chief talks to the woman.

(b) The woman talks to the chief.

What is not accounted for in (13b) is the obviation relation that obtains between the subject and object nouns. But English does approximate this in a perfectly natural way with the passive:

(13) (b') The chief is talked to by the woman.

A similar observation can be made for the following Blackfoot sentence (from Frantz 1965: 57):

(14) nitoxkotaoa ni?sa omi ponokaomita-i

(= 1-gave-3 my-brother-3 that-4 horse-4)

There are two possible translations, equally valid according to an analysis of English which considers the two constructions to be stylistic variants:

(15) (a) I gave my brother the horse.

(b) I gave the horse to my brother.

Here it seems to me that (15b) is preferable, for the same reason that (13b') is preferable in the preceding example. Sentence (15a) fails to express the obviation relation, whereas (15b), by shifting my brother to the intonation centre, appropriately assigns it relative emphasis.

1.3.2. A particle focus device in Tagalog. Several Tagalog languages mark focus on the surface with a particle that replaces the grammatical-relations particle of the

constituent being emphasized. For example, in Maranao, according to McKaughan (1962, 1969), the grammatical relations within an utterance are associated with the following particles:

- (16) (a) o agent, or source
 (b) sa/ko direct object/indirect object
 indefinite instrument/definite instrument
 (c) sa genitive

However, any constituent normally marked by one of these particles can be in focus, in which case the grammatical particle is replaced by the focus particle so. Verb inflections indicate the grammatical relationship that obtains between the verb and the focused constituent. The sentences in (17) illustrate the range of the so particle:

- (17) (a) agent in focus (so replaces o)
 Somombali? so mama? sa karabao
 (= butchers the man the carabao)
- (b) direct object in focus (so replaces sa)
 Somobali?in o mama? so karabao
- (c) indirect object in focus (so replaces ko)
 Somombali?an o mama? so maior sa karabao
 (maior = 'mayor')
- (d) instrument in focus (so replaces sa)
 Isombali? o mama? so gelat ko karabao
 (gelat = 'knife')

In order to provide English translations which express the focus relationship, McKaughan uses the cleft sentences (18b-d) for (17b-d), respectively:

- (18) (a) The man butchers the carabao.

(b) The carabao is the thing that the man butchers.

(c) It is for the mayor that the man butchers the carabao.

(d) It is with the knife that the man butchers the carabao.

Again, the translations equate an 'exotic' focus device with an English syntactic process.

Also of interest in Maranao is a kind of 'hyperfocus' device, which consists of preposing the focused constituent (and inserting the connector na between the preposed phrase and the rest of the sentence). Thus (19a) below, which translates roughly as the passive, 'The law is understood by the man', to express that the focused constituent is the direct object, is transformed by the hyperfocus rule to (19b):

(19) (a) Kataoan o mama? so kokoman
 (= knows-he the-man the-law)

'b) So kokoman na kataoan o mama?

McKaughan translates (19b) by a cleft sentence with an intensifier very: "The law is the very thing the man understands."

Particle assignment as a focus device is not restricted to exotic languages.² Most occidental school-boys learn that Latin ipse "emphasizes" or "strengthens" the substantive with which it is associated. For example, any noun can be focused in a sentence like Caesar contra Germanos Romanos duxit ('Caesar led the Romans against the Germans'), by inserting ipse appropriately, as follows:

(20) (a) Caesar ipse contra Germanos Romanos duxit.

(b) Caesar contra Germanos ipsos Romanos duxit.

(c) Caesar contra Germanos Romanos ipsos duxit.

Traditional pedagogical translations for ipse usually involve attaching reflexives to the focused constituents (cf. Henle 1958: 184-85), as in (a) 'Caesar himself', (b) 'against the Germans themselves', and (c) 'led the Romans themselves'.³ However, the sentences also find natural equivalents in the cleft sentences of (21):

(21) (a) It was Caesar who led the Romans against the Germans.

(b) It was against the Germans that Caesar led the Romans.

(c) It was the Romans who Caesar led against the Germans.

The point of all this is that many languages have elements on the surface which cannot be accounted for except as focus devices--under whatever name. But iceberg-style, focus seems to ramify below the surface. Permutation rules seem to be closely bound up with focus. Several of these in English are involved in the provision of natural translation equivalents for the sentences in Algonkian and Tagalog which express focus superficially, and permutation is also involved in the 'hyperfocus' device in Maranao. Probably it is no accident that in Maranao, as in English, the input to the permutation rule is itself a grammatical string; in fact, this is consistent with the idea that focus devices provide a particular semantic reading by means of a syntactic output

which is an alternative to another, unemphatic configuration in the language. In the analysis of focus in English syntax which follows, we will not be particularly concerned with superficial devices (but see footnotes 2 and 3). Rather, the central concern will be with those transformational processes by which a constituent in a grammatical string is permuted to another position within the bounds of grammaticality.

FOOTNOTES

1. Here and elsewhere in the thesis, bibliographical references to "Lakoff" will refer to works by George Lakoff. Works by Robin T. Lakoff will be cited in the text as "R. Lakoff".
2. English, of course, has some superficial focus devices, such as (what might be called) the focus deictic, exemplified by the (b) members of (I) and (II):

(I) (a) This man is a carpenter.

(b) This man here is a carpenter.

(II) (a) That man is a carpenter.

(b) That man there is a carpenter.

This construction is readily accounted for in a grammar which, following Postal (1966), includes in the noun matrices specifications for a demonstrative article, such as [..., +DEFINITE, +DEMONSTRATIVE, ±PROXIMATE,...], and the transformations include a peeling rule which copies the demonstrative features to the left of the noun. Then an additional rule can apply just in case the feature [+FOCUS] is a member of the set of features thus peeled out: by this rule a second matrix will be peeled out on the right which copies the specification for PROXIMATE, among others, and takes on phonological shape as either here or there on a later lexical pass.

An interesting incidental aspect of this rule is the relation which it must implicitly express between the standard and nonstandard dialects. One possible formulation will peel out the demonstrative and the second matrix to the left of the noun, thus giving as an intermediate derivation in the grammar of the standard dialect strings which are essentially those shown in (III), the surface structures of the nonstandard dialect:

(III) (a) This here man is a carpenter.

(b) That there man is a carpenter.

In the grammar of the standard dialect, then, a second rule will be required to permute here and there. The nonstandard dialect is thus formally simpler by the lack of the permutation rule. Alternatively, both matrices could be peeled out in their standard order, one to the right and one to the left. In this formulation, the nonstandard dialect is more complex because it requires an additional rule to permute here and there. Although Klima argues on

grounds of simplicity for deriving the nonstandard dialect from the standard in his study of dialectal variations in personal pronouns (1964: 243-44), simplicity apparently cannot be the basis for selecting one formulation over the other in this case.

3. Emphatic reflexives like (IV) are another fairly common superficial focus device:

(IV) (a) I myself prefer Black Label.

(b) We saw Reginald himself sleeping at the curb.

A similar analysis is possible here as for the focus deictic above. When [+FOCUS] is a member of the noun matrix under certain conditions as yet undetermined, the noun will be copied beside its underlying occurrence. Reflexivization will then apply in the usual manner to generate the surface structures in (IV).

§2: THE GRAMMATICAL MODEL AND THE ROLE OF FOCUS

2.1. The standard theory

Throughout this thesis the term "standard theory" is used to characterize the set of concepts, assumptions and practices which are the background for the grammatical analyses. The term "standard theory" in the technical sense here employed was coined by Chomsky (1969: 3) to designate the particular model of transformational generative grammar which serves as the point of departure for his and others' recent analyses--which is the same sense in which it is the "background" of this work. Basically, it denotes the shared concepts, assumptions and practices of such well-known works as Katz and Postal's Integrated Theory of Linguistic Descriptions (1964), Chomsky's Aspects of the Theory of Syntax (1965), Ross's Constraints on Variables in Syntax (1967), and Lakoff's "Deep-surface grammar" (1968). This latter work, in particular, seems to me to be an especially incisive summation of the standard theory, although, of course, Chomsky's Aspects remains its most extensive and authoritative single statement. Generally, the main assumptions include the following:

- (1) A grammar is a system of rules that relates meaning to sound in some natural language.
- (2) It includes a base component which derives abstract underlying phrase markers (P-markers) by means of

a set of branching rules.

- (3) The base component includes as a sub-component a lexicon, which by means of a set of transformational rules inserts complexes of syntactic, semantic and phonological features into the underlying P-marker.
- (4) The output of the base component is the deep structure, at which level all relevant semantic information must be specified (the Katz-Postal principle).
- (5) The semantic component operates at the level of deep structure to provide semantic interpretations for a given string.
- (6) Deep structures are mapped onto intermediate P-markers by a set of transformational rules, which are sequentially ordered and apply either pre-cyclically, cyclically or last-cyclically.
- (7) The transformational rules ultimately derive a P-marker to which no other syntactic transformations apply, which is the level of surface structure.
- (8) The phonological component operates on surface structures to provide a phonetic interpretation of a given string.

Little elaboration is required for any of (1)-(8) at this point, because, in the first place, they represent the stock-in-trade of the majority of current linguistic studies, which is a pragmatic justification for their use in this work, and, secondly, they are explicated in some detail whenever they become germane to issues developed in the chapters

which follow (cf., for example, §6.2 on points (2) and (3)).

Within the broad guidelines set by (1)-(8) a multitude of grammatical models are possible, of course, and several versions have been developed during the past few years. Two aspects of the particular model utilized here perhaps deserve acknowledgement in advance. First, I have adopted McCawley's version of the base component (1968a), for the reasons given in §6.2 where it is compared to its best-known alternative version, which is due to Chomsky (1965). I refer the reader to that section below, or to McCawley (1968a), for details. Secondly, I extensively incorporate segmentalization, in the sense of that concept outlined by Postal (1966) and practiced most plangently by Rosenbaum (1967b). Thus, for example, I consider that minor categories such as auxiliary (AUX) and determiner (DET) are represented in the deep structure as sets of syntacto-semantic features in the matrices of verbs (V) and nouns (N) rather than as nodes. Explicatory comments on particular segmentalization devices occur at several points, and more detailed expositions are included in §6 and §7.

2.2. A sketch of the theory of focus

Within the context of the standard theory, the concept of focus which is developed throughout the thesis is quite simple. In general, I maintain that a feature [\pm FOCUS] should be assigned by a very general rule of the base component to the matrices of categories at the level of deep structure. Those categories which are specified [\pm FOCUS] will then be re-ordered by various transformations in such a way that they

take on relative prominence in the surface structure.

Implicit in the theory of focus is the notion that certain superficial word orders are 'normal' or 'colorless' or 'unmarked' whereas others are 'emphatic' or 'marked'. For instance, I assume that the active is the unmarked order for indicative sentences with a transitive verb, and that passives are their marked counterparts. The marked orders are, by definition, the output of those transformations which are sensitive to the specification [+FOCUS] on some constituent of a syntactic string that meets the structural description (SD) of the rule. Indeed, a very similar distinction to that proposed here for marked/unmarked orders is a venerable candidate for inclusion in a grammar. In his "theory of kāraka relations", Pāṇini proposed a special theoretical status for the class of derivations in which the 'logical subject', 'logical object', and so on, are the same as the 'surface subject', 'surface object', and so on, as opposed to the class of derivations in which this relation is not isomorphic between the underlying and surface sentential constituents (cf. Kiparsky and Staal 1969: 83), a distinction which finds a parallel in the unmarked as opposed to marked orders, respectively. Subsequent sections of the thesis analyze a number of structures in English, and explicate the marked/unmarked word orders.

Transformational rules which are sensitive to the feature [+FOCUS] turn out to involve primarily re-ordering of two sorts. The first preposes focused constituents to the subject noun

phrase (NP) position in the surface structure, as in passivization. The other shifts focused constituents to the intonation centre of the sentence, as in dative movement and clefting. A third device, contrastive stressing, has much the same effect as this latter but uses diametric means, viz, it shifts the intonation centre to the focused constituent.

This assertion about re-ordering for focus has considerable intuitive appeal: the idea that sentence elements take on emphasis when moved out of their normal or 'expected' order to some other order within the bounds of grammaticality is what might be expected from a common-sense point of view. Precisely this intuition was explicated more than three-quarters of a century ago as a general principle of syntax by Sweet (1898: 3), as follows:

The most general way of making a word prominent is by putting it before the others--if possible, at the beginning of the sentence....

But there is another more general principle of position-emphasis--that of making a word conspicuous by putting it in any abnormal--that is, unexpected--position. Thus a word whose normal position is front or mid may be made emphatic by end-position.

I think one can fairly say that the lack of an explicit theory of grammar in 1893¹ resulted in Sweet's general lack of success in capturing his intuition about the centrality of focus in syntax in any adequate way. While theoretical shortcomings--to say nothing, mea culpa, of the theoretician's shortcomings--are still with us in 1970 and are felt keenly at several points in this thesis, we do nevertheless stand a better chance of explicating his notion formally.

Sweet visualized an approach to syntax in which focus has a central role (1893: 4): "We see, then, that in languages which have both a normal and an exceptional order, the latter is due to a variety of causes, the most important of which is emphasis." As the theory of focus here proposed is developed in subsequent chapters, the role of the feature [+FOCUS] takes on an increasingly important function in the grammar. In the end, we approach very closely a conception of the formal model which is characterized by his statement.

2.3. Formal motivation for the theory of focus

A fairly strong argument in favor of this notion of focus can be mounted solely on formal grounds, for its integration into a grammar immediately rids the theory of grammar of the persistent claim that sentence pairs such as (9)-(13) are 'stylistic variants' in the same sense as are the pairs of (14)-(17) below:

(9) (a) A dog sniffed the hydrant.

(b) The hydrant was sniffed by a dog.

(10) (a) Murray gave Selma the ring.

(b) Murray gave the ring to Selma.

(11) (a) Many toys are in the box.

(b) There are many toys in the box.

(12) (a) Chris hit who with the lunch pail?

(b) Who did Chris hit with the lunch pail?

(13) (a) It seems that John is a fool.

(b) John seems to be a fool.

The claim that pairs like these, and many other related pairs,

are 'stylistic variants' is clearly implicit in current generative theory. The transformational rules which have as their input the underlying string of one member of the pair and convert it into the second member as output are considered to be optional in all of the generally accepted analyses. Optional rule application has been construed as the basis for an operational definition of the notion 'stylistic variant' (Katz and Postal 1964: 112). However, as Chomsky and others have pointed out (cf. esp. §2.4), the members of pairs like these generally answer different questions and have different presuppositions. In a grammar which incorporates focus, they are formally distinguished from other stylistic variants by deriving them by transformational rules which are obligatory, and apply just in case certain constituents in the input structure are specified [+FOCUS].

In other words, I am proposing that a distinction be made in the set of transformationally related pairs which have heretofore been classed as stylistic variants into two such sets which might be called 'focus variants' and 'stylistic variants'. Thus the passive, for instance, does not merely occur in free variation with the active, as the psycholinguistic studies in §1 clearly attest. They are, if you will, 'focus variants', and can be recognized as such by distinctive deep structures. It follows that the transformations which derive them will be contingent upon the deep structure differences.

Optionality, then, is here restricted to the derivation of pairs like the following:

(14) (a) The salesman sent over a large check.

(b) The salesman sent a large check over.

(15) (a) A man who Sam knows sold his wife.

(b) A man Sam knows sold his wife.

(16) (a) All the men are married.

(b) The men are all married.

(17) (a) John is more clever than Bill is.

(b) John is more clever than Bill.

Such pairs seem to meet the condition that the members have what Katz and Postal call "the same cognitive meaning", which I take to mean that they are intuitively felt to answer the same questions and contain the same presuppositions. Further, no constituent takes on relative prominence as a result of preposing or stress placement. Whatever factors, grammatical or extra-grammatical, determine the occurrence of one member rather than another are apparently so subtle that they have defied articulation, a fact which is expressed in the grammar by rule optionality.

As a result of the distinction between focus variants and stylistic variants, a focus interpretation of English syntax significantly reduces rule optionality, which has sometimes been exploited as a means of deriving constructions which are mutually exclusive but in standard analyses have the same deep structures--for example, passivized direct objects and passivized indirect objects (cf. §3.3). I regard the refinement of the notion 'stylistic variant' and the

consequential constraint upon optionality which accrue to the grammar which incorporates focus as a formal motivation for the theory.

2.4. Surface focus

So far I have assumed that focus should be represented in the deep structure of the grammar. But it is possible to imagine an alternative conception in which focus is 'discovered' by some non-arbitrary criteria in surface structure. It is immediately evident that such a conception can not be formally motivated in the manner outlined above; that is, 'focus' determined at the level of surface structure must be syntactically inconsequential. Ostensibly, this might be construed as a point in its favor, inasmuch as it maintains a distinction between syntax and semantics, and this in turn might be construed as methodologically desirable for some reason, in spite of the fact that it is at odds with the abundant evidence that the dividing line between syntax and semantics is not demarcatable.² But even discounting the fact that the formal motivation discussed above provides an a priori argument in favor of a theory in which focus is represented in the deep structure, it is possible to demonstrate that its alternative cannot account for the data in an adequate way. Fortunately there is no need to fabricate a 'straw man' for the demonstration. A recent groundswell of unpublished papers makes use of just such an alternative, which seems to have originated in lectures by Chomsky.³ It finds its most programmatic

statement in his paper "Deep structure, surface structure, and semantic interpretation" (1969: 18-27), and figures in papers by several of his students, especially Jackendoff (1969: 221-32) and Kraak (1967), and also marginally in Akmajian (1969; 1970) and Fischer (1968). To facilitate discussion, I will refer to the Chomskyan conception as 'surface focus', thus denoting the central idea that it is determinable only at the level of surface structure. My own conception I will henceforth refer to as 'deep focus'.

Exponents of surface focus maintain that the semantic interpretation of a string has two parts: a focus, and a presupposition. Jackendoff (1969: 221) characterizes these parts as follows: "Intuitively, the presupposition is the material assumed by the speaker to be common to both speaker and hearer, and the focus is more or less new material." The focus can be mechanically determined as "the phrase containing the intonation centre" (Chomsky 1969: 19), that is, as the "constituent containing the stress maximum of the sentence" (Jackendoff 1969: 221). Hence focus in this sense is a surface structure phenomenon, simply predictable after the application of the stress rules. Chomsky (1969: 21) suggests an equally simple procedure for discovering the presupposition: "in each case, the presupposition can be determined by replacing what is taken as focus by an appropriate variable." For example, in a sentence like (18), the intonation centre, and hence the focus (or perhaps just the most likely focus, in view of a complication discussed

below), is the underlined noun:

(18) Zeus hit Xeno.

The presupposition, then, is the same sentence with a variable, X, in place of the focused noun:

(19) Zeus hit X.

In other words, according to the theory of surface focus, the speaker and hearer share the knowledge that Zeus hit someone or something. The information being conveyed by (18), the non-shared or "new" material, is that it was Xeno whom he hit.

It follows that there can only be one focus per sentence (Jackendoff 1969: 229), since there is only one intonation centre. When contrastive stress imposes a different intonation contour on a sentence, Chomsky (1969: 24-25) assumes that focus and presupposition are determined exactly as they would be under normal intonation, except for some vague--in fact, to me, incomprehensible--delimitation upon the potential length of the focused constituent:

...when expressive or contrastive stress shifts [the] intonation centre the same principle applies as in normal cases for determining focus and presupposition, but with the additional proviso that naturalness declines far more sharply as larger and larger phrases containing the intonation centre are considered as a possible focus.

Jackendoff (1969: 222), without noting his unorthodoxy, assumes that contrastive stress, in imposing a new intonation centre, also imposes a new focus (and in the same place says that this occurs "under Chomsky's rules"). Jackendoff's proposal, though apparently different than Chomsky's, follows quite naturally from the equivalence of focus and intonation which

is at the heart of the notion of surface focus.

In what follows I will point out that the notion of surface focus is defective in several ways. Wherever possible throughout my critique, I will show how deep focus is capable of solving some of the problems that arise in surface focus. I will also provide some evidence which suggests that the complementary notion of 'surface presupposition', like surface focus, introduces into linguistic theory a concept of very limited utility.

In the first place, the necessary condition that focus is restricted to one occurrence per sentence is incompatible with the idea that contrastive stress either specifies the focus or somehow delimits the normal focus. Two or more occurrences of contrastively stressed constituents within an utterance are not rare, although more than two of them perhaps require for their social context an unusually baffled listener.⁴ In any event, sentences like (20), in which contrastive stress is indicated by capitalization, seem to be widely acceptable:

(20) (a) MARIE gave the bird to CLYDE.

(b) Marie GAVE the bird to CLYDE.

(c) Marie gave THE bird to CLYDE.

(d) MARIE gave the BIRD to Clyde.

(e) Marie GAVE the BIRD to Clyde.

Under the assumption that contrastive stress specifies focus, these sentences have two foci. Under the assumption that contrastive stress delimits the length of the focused constituent, which is some phrase containing Clyde, sentences

like these seem to pose insurmountable problems for specifying the delimitation: in (20a-b) the first contrastively stressed constituent is remote from the normal intonation centre and would seem, if anything, to expand rather than narrow the focus; in (20d-e) constituents other than the intonation centre are emphatically stressed and would seem, if anything, to preclude the normal intonation centre as a possible focus.

A second problem in surface focus is that it involves an equivocation of the term "phrase containing the intonation centre", with the result that focus is not really determinable by it at all. This criticism obtains because the "phrase containing the intonation centre" is not syntactically delimitable. According to Chomsky, such a "phrase" may include the single constituent which is at the intonation centre, or the entire sentence (which also, of course, contains the intonation centre), or any number of successive constituents which include the one at the intonation centre. For example, a sentence like (21) has potentially at least five focused "phrases", as indicated by the numbered parentheses:

(21) (₁did (₂Marie (₃give (₄the bird (₅to Clyde₅) ₄) ₃) ₂) ₁)

In fact, there may be as many as seven here, depending upon the "phrasal" status of the and to; in one of his examples (repeated as (22) below), Chomsky ascribes such status to with. Or there may really be one fewer if the tense-carrier did is associated with the verb as one phrase--a discontinuous

phrase, as it were. Issues like these might come to be viewed as non-trivial if the notion of surface focus is to be developed, since it will require a formal characterization of the term "phrase containing the intonation centre."

To illustrate further the multiplicity of surface focus, I cite a more complicated example from Chomsky, with the parentheses labeled to facilitate the exposition:

(22) (1 { was he
he wasn't } (2 warned to (3 look out for
(4 an ex-convict (5 with (6 a red (7 shirt7)
6) 5) 4) 3) 2) 1)

Corresponding to each "phrase" in labeled parentheses is a different "natural response" (or "presupposition-sharing response"), which serves as a kind of semantic test by which Chomsky corroborates his intuitions about focus. The "natural responses" for (22) are listed in (23); the number at the head of each one corresponds to its counterpart in the labeled parentheses of (22):

- (23) (7) No, he was warned to look out for an ex-convict with a red tie.
- (6) No, he was warned to look out for an ex-convict with a carnation.
- (5) No, he was warned to look out for an ex-convict wearing dungarees.
- (4) No, he was warned to look out for an automobile salesman.

(3) No, he was warned to expect a visit from the FBI.

(2) No, he was simply told to be more cautious.

(1) No, nothing was said to anyone.

Reliance upon the intonation centre would seem, then, to leave the problem of determining the focus quite unsolved. Knowing that the focus must include the intonation centre somewhere within it hardly solves the problem when the proviso is added that this can take in any number of constituents, up to and including the entire utterance.

What is required to specify the focus in addition to intonation in the framework of surface focus is information about the "natural response" which is elicited by a particular utterance on a particular occasion. A structure such as (22) reveals nothing interesting about focus without an instance of (23) as well. This does not deny that a theory of surface focus, properly formalized, might be capable of revealing the range of possible foci, but it does question the relevance of its doing so. And any attempt to narrow the range of focus, or to specify it uniquely for a given occurrence of an utterance, must inevitably re-introduce as a goal of semantic theory a kind of discourse analysis--in fact, the "strong version" of "setting selection" (Katz and Fodor 1963: 486-91). Katz and Fodor have argued that such a goal is inappropriate and futile: inappropriate because it makes no distinction between knowledge about language and 'knowledge about the world'; and futile because it cannot be systematized anyway. Their arguments, as far as I know, have never been challenged.

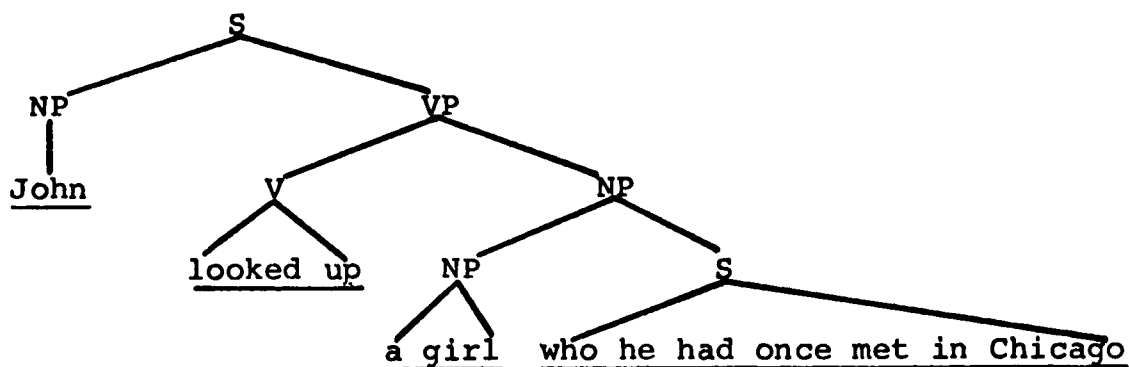
A third point is due to Lakoff (1969: 29-30) and concerns the procedure illustrated by (21) and (22) whereby surface constituents are labeled and serve as an exhaustive index of the range of possible foci. Lakoff cites the variants in (24):

(24) (a) John looked up a girl who he had once met in Chicago.

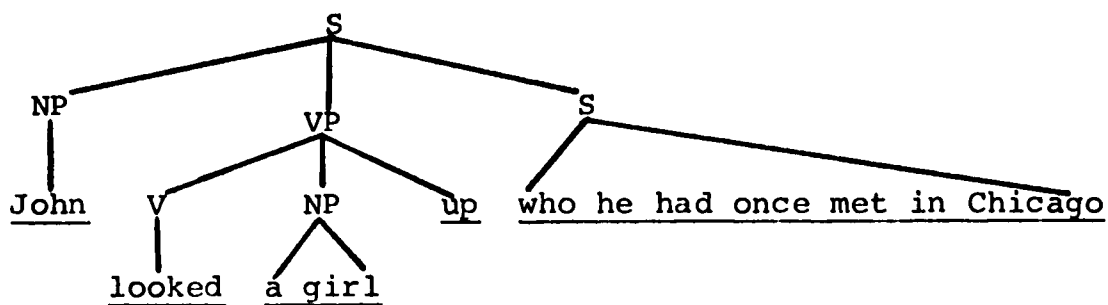
(b) John looked a girl up who he had once met in Chicago.

He notes that the surface constituent structure of (24a) and (24b) is very dissimilar, as illustrated by the P-markers (25a) and (25b), respectively:

(25) (a) Surface structure (24a):



(b) Surface structure (24b):



Since surface focus proceeds by determining focus on the basis of labeling surface constituents, it should therefore "predict that [(24a) and (24b)] should be different in focus possibilities and in corresponding presuppositions, and that therefore they should answer different questions, and have quite different semantic representations." However, such a prediction is obviously mistaken, since the contrast in surface constituent structures in (24a) and (24b) is merely the result of particle movement (as is (14) above). No constituent takes on relative prominence in terms of preposing or stress change, and in the standard analysis they have identical deep structures and semantic interpretations.

The fourth point deals not with the capability of surface focus to account for the data, but with its theoretical implications. Implicit throughout the discussion so far is the idea that the incorporation of surface focus in generative theory requires abandoning one of the theory's fundamental tenets, namely, the Katz-Postal principle that transformational rules do not alter meaning (cited as (4) above). A pellucid example of the necessity of abandoning it in a grammar which incorporates surface focus is provided by Chomsky (1969: 23) in his discussion of sentences (26) and other similar sentences:

(26) (a) Did John give the book to Bill?

(b) Did John give Bill the book?

Chomsky notes that the intonation change brings about a change in focus in these sentences, as is demonstrated by the discourse contexts in which they usually occur. Thus

Hence deep focus allows the theory to retain the tenet that transformations are not meaning-changing. The formal elegance which is afforded by the Katz-Postal principle has been explicated in considerable detail elsewhere and will not be repeated here (cf. Katz and Postal 1964; for additional motivation, cf. Chomsky 1965: 132-35; Sadock 1969b: 359-60). Presumably, an evaluation of two competing theories, one of which requires abandoning a well-motivated principle and one of which retains it, will choose the latter, other things being equal.

Incidentally, Chomsky and the others who have advocated surface focus also subscribe to an interpretive semantic theory as opposed to a directly generated semantic representation. In surface focus they find an argument for their position which has considerable theoretical impact inasmuch as surface focus requires that semantic readings be, in part, derived from superficial structures. They maintain that the derivation can be accommodated by an appropriate modification of interpretive semantics, but that it cannot be accommodated by any possible modification of generative semantics. Thus surface focus constitutes a strong argument (a fortiori, Chomsky calls it) against that position. I note in passing that my remarks, while they cast serious doubt upon this key interpretivist argument against generative semantics in the course of presenting a (hopefully, more viable) alternative to surface focus, and consequently cast doubt upon its theoretical implications, do not impinge any further upon

this issue. Deep focus can be construed equally well, it seems to me, as an element to be interpreted by a semantic component which operates at the level of deep structure, or as an element to be incorporated (in some form or other) into a base component which directly generates semantic representations. With regard to deep focus, the nature of the semantic component remains an open question.⁵

Finally, surface focus is apparently unable to express the fact that an utterance may contain no focused constituent, that is, that it is unemphatic or colorless. Since focus is determined by intonation centre, and since every sentence contains an intonation centre, it follows that every sentence must contain one focus. Thus, exponents of surface focus are forced into an analysis which holds that, for every sentence, regardless of syntactic configuration and stress pattern, if a particular constituent is not in focus, there must be a semantic reading under the condition that, in effect, everything is in focus. The assumption made in deep focus is the opposite: deep focus assumes that for those deep structures which are ultimately transformed into declarative surface structures with normal intonation, focus is not a consideration in the semantic interpretation. The only direct argument against the position of surface focus at this point is the rather empty claim that it is counter-intuitive. However, a substantial argument can be addressed to the corollary assumption in surface focus that in those sentences in which 'everything is in focus', nothing is presupposed.

Because focus and presupposition are inextricable in Chomsky's formulation, it follows that any sentence which is all focus will include no presupposition. If one applies Chomsky's procedure of substituting a variable for the focus to determine the presupposition, one ends up with only the variable. This state of affairs must obtain for one reading of every sentence, including the following:

- (29) (a) My brother is seven feet tall.
 (b) I accuse you of mailing the letter.
 (c) I bent my handkerchief.

These examples are from Morin and O'Malley (1969: 183), who state that unless they are merely anomalous, in which case they are dismissed as "conundrums", they must presuppose, among other things, the following:

- (30) (a) I have a brother.
 (b) It was bad for you to mail the letter.
 (c) My handkerchief is stiff.

Surface focus denies that these presuppositions exist, at least for one 'possible' reading. It requires therefore that, of the several readings which must be provided for every sentence, one must always be a 'reading' of an anomalous sentence. Such a requirement recalls an analogous situation in philosophy which once galled the kibe of Austin (1955: 20):

I will content myself here [Austin wrote] with pointing out that one of the things that has been happening lately in philosophy is that close attention has been given to 'statements' which, though not false exactly, nor yet 'contradictory', are yet outrageous. For instance, statements which refer to something which does not exist as, for example, 'The present king of France is bald'. There might be a temptation to assimilate this to purporting to

bequeath something which you do not own. Is there not a presupposition of existence in each? Is not a statement which refers to something which does not exist not so much false as void?

Needless to say, the non-existent king of France is every bit as real as "my brother" who, in one 'reading' of (29a), is denied existence. In any event, any theory which stipulates that 'void' statements or 'conundrums' undergo the same analysis as meaningful statements--be construed, in fact, as meaningful statements--would seem to pose insurmountable problems for the semantic component.

A more serious objection is intrinsic in any approach which would treat presupposition as a surface phenomenon. One of the few clear results of the nascent investigations into presupposition, and the principal reason for its posing a challenge to current semantic theories, is precisely that it is not usually detectable in the surface structure. However, it is more often overt in the deep structure, even in analyses which pre-date the recent interest in presupposition. For example, the deep structure of (29a) includes an embedded S which is its presupposition (30a), "I have a brother", in the standard analysis (for example, Lees 1963: 130-31). But more often the presuppositions are not overt even in the deep structure, as it is presently formulated. Serious problems are posed by sentences like (29b) and (29c) if semantic theory must include an account of their presuppositions (30b) and (30c). And apparently it must: the understanding of these presuppositions is undeniably a part of the competence of the native speaker. An intimation of the complexities involved

in order to account for them is afforded by Fillmore (1969) in his analysis of "verbs of judging" such as accuse, blame and forgive. Although tentative, his analysis strongly suggests that surface structure might well be ruled out a priori as a possible avenue to an understanding of presupposition.

From this point forward, I divorce the notion of focus from any considerations about presupposition. At the present time, yoking them together is wholly unmotivated. If it happens that subsequent work discovers an essential relationship between them, so much the better. However, what is required before this can possibly happen is the development of conceptions of presupposition and of focus which are in themselves more consequential for the theory of grammar than seems possible within the framework of surface focus.

FOOTNOTES

1. Actually, one sometimes envies Sweet the linguistic licence he was afforded by his lack of theory, which allowed him simply to declare 'heroic' truths, such as, for example, that "in Modern German the Parent Germanic order was, so to say, fossilized [but] English agrees with Swedish and Danish in developing a more natural and logical order, characterized especially by the prevalence of mid-verb position" (1893: 6). 'Heroic' truths are no doubt still with us, but they seem now to be rather more local than international.

2. Bloomfield (1933: 513fn) points out that semantics divorced from grammar amounts to an attempt "to study the universe in general". This viewpoint was generally accepted by American linguists during the first half of the century. Cf. Hockett 1958: 139.

The earliest considerations of semantics in generative theory, however, were interested in establishing a demarcation between syntax and semantics, and were led into considerable artificiality in the process. For example, Katz and Fodor (1963: 517-18) acknowledged "an overlap between the sets of syntactic and semantic markers", but concluded that the overlap was apparent, not real: "where it appears that a marker is common to both grammar and semantics, what is in fact the case is that there are two distinct markers having the same or similar names."

Weinreich (1966: 402-05) showed that their viewpoint was "ill-founded", "circular" and irrelevant. His counter-proposal (432ff) posited that "some semantic features must appear in the derivation of a sentence prior to the insertion of lexical entries."

Now, most generative grammarians accept the fact that most of the so-called syntactic features introduced in the base in the standard theory are really syntactosemantic. Thus, for example, Fillmore (1967: 27) concludes an article with the remark: "The designation of noun phrases as Agents, Places, etc., that have been used in my approach, has a role in semantic interpretation, and such properties of verbs as the change-of-state feature we have associated with BREAK are semantic in a more obvious way. The assignment of such semantic features has, however, clear syntactic consequences."

3. Halliday (1967) is apparently the basis for the fundamental notions of the theory.

4. For this reason, I propose that such utterances be classified under the rubric "Goldie Hawn sentences". Older linguists, however, might prefer to call them "Gracie Allen sentences". These terms are also appropriate for interrogatives with two or more WH forms, such as: "Who gave what to whom?" See §4.1.4.

5. This is probably a moot controversy anyway. Peters and Ritchie (1969a; 1969b) have shown that transformational grammars in the sense of the standard theory are equivalent in weak generative capacity to unrestricted rewriting systems. Cf. Bach (1969) for a summary of their results. The implications are pervasive. As Emmon Bach pointed out in a lecture at the University of Alberta in October 1969, this result means that the theory can accommodate any number of alternative analyses--within reason--at any number of points (cf., also, Peters 1970). If this is so, then arguments like the current one about the role of the semantic component are self-perpetuating, with each side winning debating-points in its turn, while more substantive issues are held in abeyance.

§3: EVIDENCE FOR A BIFURCATION IN DEEP FOCUS

In §3, syntactic evidence is provided to show that topic devices must be formally distinguished from other focus devices in the grammar. The evidence consists of a demonstration that the processes of passivization and dative movement cannot be ordered with respect to each other if they are considered as formally undistinguished focus devices. In §3.1 and §3.2 I develop focus interpretations of passivization and dative movement, respectively, taking presently accepted formulations as the starting-point. In §3.3 these rules are shown to be inadequate when an attempt is made to integrate them into a grammar. General aspects of the bifurcation which is thus motivated are discussed in §3.4.

3.1. A focus interpretation of passivization

The original formulation of the passive transformation by Chomsky (1957: 112) remains its most generally accepted formulation:

(1) PSV (optional)

SD:	NP	AUX	V	NP	
SC:	1	2	3	4	→
	4	2+ <u>be+en</u>	3	<u>by+1</u>	

Several modifications of this formulation have been proposed, largely as a result of the criticism that a rule such as (1) introduces a different phrase structure for the AUX and the post-verbal NP in the SC than is found in the SD. However,

so far the proposed modifications have proven for the most part to be convolute expressions of the fairly straightforward fact that the passivization process in English alters the underlying phrase structure.

Attempts to introduce be + en into the grammar independently of the passive rule tend to proliferate rules simply to account for an element whose distribution is extremely limited--in fact, limited to passives and pseudo-passives. Thus Hasegawa (1968) introduces it in the base as a main verb (MV), but he himself mounts a convincing criticism of his own proposal by pointing out several attendant difficulties (1968: 231-33). For example, as a MV, be + en uniquely must co-occur with another MV. This leads Hasegawa to claim that the co-occurent MV is therefore from an embedded S, and his branching rules must as a result include rule (2):

$$(2) \begin{array}{l} (a) \\ (b) \end{array} \text{ MV} \rightarrow \left\{ \begin{array}{l} \text{Pass \# S \#} \\ \text{MV}_1 \text{ (Loc) (Time)} \end{array} \right\}$$

Rule (2a) is, as he admits, an ad hoc rule to accommodate his particular analysis. Furthermore, he notes that unlike all other MV's, be + en is an exception to the affix-attachment rule, by which, for instance, the progressive is attached as be + MV + ing. This 'normal' attachment gives the wrong result for be + en, as shown in (3):

$$(3) \quad * \text{ be } \left[\begin{array}{c} \text{be + en} \\ \text{MV} \end{array} \right] \text{ ing}$$

Bach (1967:474-75) introduces be + en transformationally under the following conditions:

Tentatively, we may derive passive constructions from be + Predicate where the predicate is represented by a sentence with the subject of the outer sentence repeated as an object, and with the second tense Past for one meaning of the passive--no agent and an essentially perfect meaning--but Pres for the other.

This complicated procedure arises out of an attempt to find an interpretation for the logical possibilities of tense assignments in outer and embedded sentences. That is, Bach proposes to derive aspect from combinations of tenses in outer and embedded sentences. For example, the progressive aspect is derived from constructions in which an outer S with be is past and an embedded S is present (for past progressive) or both outer and embedded S's are present (for present progressive). There remain the possibilities of an outer S with be in the past and an embedded S in the past, and also of an outer S with be in the past and an inner S in the present, which are interpreted according to the quotation above as the underlying representations for two 'kinds' of passives. Bach concedes that this interpretation is "not quite so clear" as for the progressives. One major problem would seem to be that it forces one to recognize a semantic distinction between sentences like (4a) and (5a) beyond, of course, the occurrence in the underlying structure of a PRO-form in (4b) where a non-PRO-form occurs in (5b) (Bach's examples):

(4) (a) The doors were closed at three.

(b) The doors Past be someone Past close the doors

(5) (a) The doors were closed by the manager at three.

(b) The doors Past be the manager Pres close the doors

This is the distinction Bach suggests in the quotation above, which is accounted for in the deep structure by the opposition of Past in (4) to Pres in (5). However, the basis for such a distinction is not at all clear. Like Hasegawa, Bach also notes a number of complexities which enter the grammar with his analysis (1967: esp. 475). Neither Bach's nor Hasegawa's proposal has yet been elaborated sufficiently to show that it can be incorporated into a grammar with any success, in the event that the advantages of the analyses are felt to outweigh their inherent complexities.

Other modifications of the passive rule have been directed toward accounting for the derived phrase structure of the agentive by + NP. Chomsky (1957: 73-74) proposed a 'derived structure condition' to account for it, as follows:

- (6) If X is a Z in the phrase structure grammar, and a string Y formed by a transformation is of the same structural form as X, then Y is also a Z.

The condition seems to have received little attention in subsequent developments in generative theory, perhaps because it apparently has little application (but cf. §7.2). Chomsky applies it specifically to the by + NP constituent of the passive SC, where it gives the by + NP its proper interpretation as a prepositional phrase (PP), and also to participles where it gives derived V + ing structures their proper interpretations as adjectives (ADJ).

As an alternative to the analysis which introduces derived phrase structure, Katz and Postal (1964: 72-73) propose

that an underlying manner adverbial be generated in the base of an S which will undergo passivization. In their proposal, the manner adverbial rewrites as by plus a dummy place-holder PSV which is replaced transformationally by the deep structure subject NP (also cf. Chomsky 1965: 103-05; Rosenbaum 1967a: 6). Their motivation (1964: 148-49) is a claim which originates with Lees (1963: 8), that verbs which can undergo passivization are also the verbs which can co-occur with manner adverbials. However, Lakoff (1965: Flff) has shown that this verb subclassification 'leaks' in both possible directions: verbs like believe, consider, hear, know and see may be passivized but do not generally take manner adverbials, while verbs like have, owe and resemble may take manner adverbials but may not be passivized. Furthermore, Hasegawa (1968: 233) points out that passives and manner adverbials may co-occur, as in (7):

(7) He was treated badly by the enemy.

The only way the proposal of Katz and Postal could be patched up to accommodate the fact of co-occurrence, quite apart from Lakoff's counter-evidence, is by permitting two manner adverbial nodes in the deep structure, with a condition that when both occur one must always be realized as by + PSV, since sentences like (8a) are ungrammatical but sentences like (8b-c) are not:

(8) (a) *Arthur governed Camelot wisely prudently.

(b) Camelot was governed wisely by Arthur.

(c) Camelot was governed prudently by Arthur.

But this is only a complicated way of saying that passivization can operate on a structure which includes a manner adverbial, and the purported co-occurrence relations which motivated the by + PSV node have no force.

As a result, the original formulation in (1) above seems to be the best available at present. Additional criticism of proposed modifications to it and more detailed expositions of some of the points outlined above may be found in Kac (1969) and UESP (1969: 841-49), as well as in §7.1 below. The original formulation, sometimes with some purely notational innovations, is maintained in analyses by Chomsky (1958: 227), Fillmore (1965: 29), Rosenbaum (1967b:48) and Jacobs and Rosenbaum (1968: 23-26), among others. As an example of an innovation which is purely notational, consider Rosenbaum's analysis in which verbs which are contextually specified as transitive take on a feature [\pm Rpass] in the base (1967b: 9), by the following rule:

$$(9) \quad [+V] \rightarrow [\pm Rpass] / \left[\begin{array}{c} \{ [+ _ NP] \\ [+ _ NP NP] \} \\ \hline \end{array} \right]$$

The specification [\pm Rpass] on the verb later triggers Rosenbaum's passive transformation (1967b:48) which permutes the NP's. A later rule, called "passive segmentalization" (1967b: 55), peels out the be + en features, and is also triggered by [\pm Rpass].¹ Clearly the feature [\pm Rpass] is merely a way of stating that sentences with transitive verbs may or may not undergo passivization, and is equivalent in

the original formulation to the specification that the passive transformation is optional. The separation of NP switching and be + en segmentalization into two rules has no apparent syntactic motivation; the latter is placed among a group of later rules that segmentalize the perfect and the progressive, apparently on the basis of its formal similarity to them. The processes could be conflated as one rule, as they are in (1), with no loss.

As I have already indicated in §2, deep focus ascribes a deep structure difference to strings which undergo passivization and those which do not. The difference is precisely the specification of the deep structure object NP as [+FOCUS], as in (10a), ultimately deriving the surface structure (10b):

(10) (a) Zeus hit [_{Xeno}
 +FOCUS]

(b) Xeno was hit by Zeus.

That is to say, the passive rule is triggered by the specification [+FOCUS] on the deep structure object NP.

However, it is necessary now to introduce a formal complication into the focus interpretation. Since in the standard theory a dichotomy is maintained between categories and features such that only lexical categories can accept feature matrices, [+FOCUS] can only be assigned to N's (among other lexical categories; cf. §3.4.2). Deep focus therefore requires a characterization of the scope of focus, inasmuch as passivization does not permute N's but NP's, as is clear in the examples (12)-(17):

- (12) (a) American businessmen establish lucrative subsidiaries in Canada.
 (b) Lucrative subsidiaries are established in Canada by American businessmen.
- (13) (a) Younger men indulge girls who are melancholy.
 (b) Girls who are melancholy are indulged by younger men.
- (14) (a) The Macedonian army employed Xeno's aunt.
 (b) Xeno's aunt was employed by the Macedonian army.
- (15) (a) Augustus predicted the fall of the Roman Empire.
 (b) The fall of the Roman Empire was predicted by Augustus.
- (16) (a) The maid cleans the kitchen sink.
 (b) The kitchen sink is cleaned by the maid.
- (17) (a) The upstairs maid cleans the tub in the bathroom.
 (b) The tub in the bathroom is cleaned by the upstairs maid.

If (12) and (13) were the only cases that had to be accounted for, the scope of the focused constituents in the SD of the passive rule could be specified by (18):

- (18) [NP X [+N
 +FOCUS] Y NP]

However, (14)-(17) show that (18) is inadequate. In addition to the focused head noun, the permuted NP may also include nouns which are genitive ((14)-(15)) or locative ((16)-(17)). Obviously the specification [+FOCUS] on subordinate nouns within the NP should not trigger passivization, as it would

if (18) appeared in the SD of the rule. In a grammar which marks cases or grammatical relations in the deep structure, it would be possible to retain (18) simply by specifying the complex symbol of the noun as [+N, +OBJECT, +FOCUS]. More compatible with the standard theory is a SD which exploits the fact that all the permutable NP's in (12)-(17) are generated by the following phrase structure rule (Rosenbaum 1967b: 1):

(19) NP + NP S

Superficially, then, one might expect that this fact would permit a unique characterization of the scope of focused N's in terms of the structural analysis of (20):

(20) [X [+N
NP +FOCUS] (S)]
NP NP

Note that in (20) the S must be optional to allow for passivized NP's without embedding, like (11). The variable X accommodates any generable combination of determiners and prearticles; models which derive these by segmentalization (as does Postal 1966: 211) would probably not require it, depending upon the order of passivization with regard to the segmentalization rules. However, while (20) is an adequate characterization for base rules, including the context specification of lexical entries like (35)-(38) below, it is inadequate for the scope characterization in transformations because the cyclic application of the transformational rules will reduce the embedded S (Lakoff and Ross 1966) and in many cases prune it (Ross 1966) before passivization. As a result, I will characterize the scope of focus by the

non-functional structural analysis which appears as index 4 in the SD of (21). This representation will serve throughout §3, §4 and §5, postponing the formal issues which underlie it until §6.

Rule (21) is an approximation of the passive rule in a grammar which incorporates deep focus:

(21) PSV (obligatory)

SD:	NP	AUX	V	[^{NP} +FOCUS]	
SC:	1	2	3	4	+
	4	2 + <u>be</u> + <u>en</u>	3	<u>by</u> + 1	

Rule (21) will serve as a convenient reference in the arguments that follow.

3.2. A focus interpretation of dative movement

The dative movement rule transforms one member of (22) and (23) into the second member:

(22) (a) The farmer gave John a Clydesdale.

(b) The farmer gave a Clydesdale to John.

(23) (a) The farmer bought John a Clydesdale.

(b) The farmer bought a Clydesdale for John.

The first issue in formulating the rule is to decide which member is directly generated in the base, and which is derived from the deep structure thus generated. Fillmore (1965) posits a different underlying structure for (22) than for (23). According to his analysis, the structure underlying (22a) is generated as the deep structure, and (22b) is derived from it by his first indirect object rule; but (23b) is also generated in the deep structure and (23a) is derived

from it by his second indirect object rule.

His motivation for distinguishing the underlying representations--though not for the choice of underlying representation itself--is that, in Fillmore's dialect, (22) and (23) have different syntactic properties: according to him, the forms with underlying for-datives (like (23)) cannot undergo passivization. Thus he stars the following sentence as ungrammatical:

(24) I was bought a hat.

Although this is the only example he provides, his rules indicate that the constraint upon passivization of for-datives is unexceptional in his dialect. For him, all of the following are presumably ungrammatical, and their derivation is blocked:

(25) (a) John was bought a Clydesdale by the farmer.

(= passivized (23a))

(b) The guests were saved some cake by the hostess.

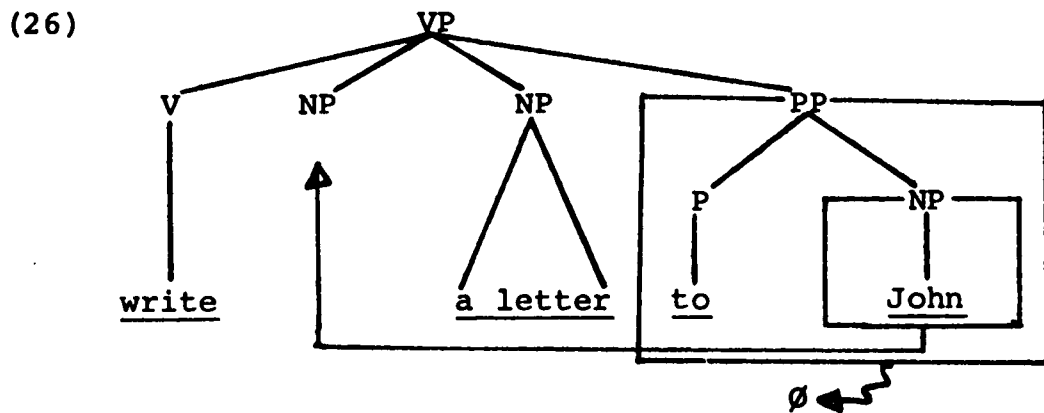
(c) My sister was built a car-port by her uncle.

However, for many speakers, including myself, these are perfectly acceptable,² and Fillmore's syntactic distinction will not be maintained here. Instead, I will assume that (22) and (23) involve one transformational rule, and that the idiosyncratic fact about which preposition, to or for, is required by a particular verb is a feature in the lexical entries of the set of verbs (as in (37)-(38) below).

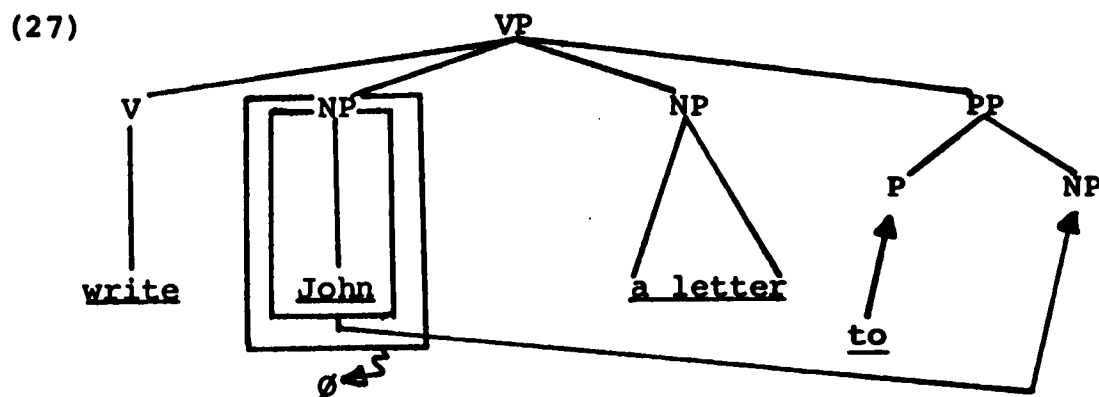
There is apparently no syntactic evidence to decide which member of (22) or (23) is the underlying form. Fillmore simply uses one for (22) and the other for (23) on the formal

basis that they should have different underlying forms.

Emonds (1969: 65-67) also uses both possibilities, but in a different sense. Although he seems to favor the (b) members as underlying representations, he is forced to generate both a dative NP node and a dative PP node in the deep structure in order to accommodate his "structure preserving constraint", which states, in part, that transformational rules can only derive SC's which are directly generable by base rules. Thus, for him, the deep structure of a string which can undergo dative movement is represented by the P-marker (26), with the SC of dative movement indicated by arrows (as schematized by Emonds 1969: 66):



That is, the dative NP is generated as an "empty node" which is either filled by dative movement or deleted. Emonds' proposal may be construed as using both possibilities as underlying representations inasmuch as it is equivalent to generating the dative PP as the empty node which can be filled transformationally, as in the P-marker (27):



Hence both Emonds' and Fillmore's proposals determine the underlying representation on formal, not syntactic, grounds.

The kind of syntactic argument which might have force is evidence that some verbs require dative NP's but cannot have dative PP's, or vice-versa. In such a case, the structure which is always grammatical as opposed to the one which is sometimes ungrammatical might provide the more defensible claim as the candidate for the directly generated underlying form. It turns out, however, that the data are skewed in both directions: some verbs require indirect object NP's only (Fillmore 1965: 11) and others require indirect object PP's only (Fraser 1965):

Dative NP's only

(28) (a) He asked Selma her name.

(b) *He asked her name to Selma.

(29) (a) I envy you your garden.

(b) *I envy your garden to you.

Dative PP's only

(30) (a) *I donated the University a library.

(b) I donated a library to the University.

(31) (a) *Peter purchased John a book.

(b) Peter purchased a book for John.

In the absence of any such syntactic evidence to determine the choice, I will postulate that the underlying form is the structure (22a) and (23a), which has the normal declarative intonation contour. From this, the structures (22b) and (23b) will be derived by transformation.

Dative movement, in the focus interpretation, is obligatory and applies when the deep structure indirect object is marked [+FOCUS]. Like the direct object, the indirect object can include within the NP genitive and locative nouns derived from embedded S's. Surface structures with genitive and locative nouns in the indirect object NP are exemplified by (32) and (33) respectively:

(32) The soldiers gave Xeno's aunt a stipend.

(33) The Squire bought the downstairs maid some roses.

Thus, in the SD, the dative movement rule will require the same characterization for scope as does the direct object in passivization. The dative movement rule is (34):

(34) DATIVE (obligatory)

SD:	V	[	NP +FOCUS	]	NP	
SC:	1	2		3	→	
	1	∅		3 + P + 2		

(where the P node of the SC takes phonological shape as either to or for by a later peeling rule and lexical pass, the particular phonological shape being determined by a feature of V.) Notice that the same problem obtains with

regard to the derived constituent status of P + NP as an instance of PP here as it does in the specification of by + NP as PP in PSV, and the solution for one will presumably also solve the other; for example, a convention such as Chomsky's derived structure condition ((6) above; §7.2 below) will apply here too.

I note in passing that the incorporation of deep focus finds an ancillary application in the subcategorization of irregularities like (28)-(31). The idiosyncrasies of verbs which do not permit dative movement, like ask and envy, and of verbs which require it, like donate and purchase, can be characterized by including a value of [\pm FOCUS] in the contextual specification of their lexical entries (after McCawley 1968a: 258), as follows:

(35) ask: [+V, ..., -STATIVE] / $\frac{\text{---}}{\text{NP}} [\text{X } [\text{+N} \text{ -FOCUS}] \text{ (S) }] \text{ NP}$

(36) envy: [+V, ..., -STATIVE] / $\text{---} ([\text{X } [\text{+N} \text{ -FOCUS}] \text{ (S) }]) \text{ NP}^3$

(37) donate: [+V, +to, ..., -STATIVE]
/ $\frac{\text{---}}{\text{NP}} [\text{X } [\text{+N} \text{ +FOCUS}] \text{ (S) }] \text{ NP}$

(38) purchase: [+V, +for, ..., -STATIVE]
/ $\text{---} ([\text{X } [\text{+N} \text{ +FOCUS}] \text{ (S) }]) \text{ NP}^4$

Heretofore such irregularities were accounted for by rule features (Lakoff 1965: II1ff). That is, a verb like envy would include in its lexical entry a feature something like [-DATIVE TRANSFORMATION], and a verb like donate would

include [+DATIVE TRANSFORMATION]. Rule features were proposed by Lakoff as a means of avoiding the attachment of lists of irregular lexical items which could not undergo a particular rule even when the strings which included them met the SD of that rule. The lists were, in effect, conditions upon the application of the rule. Rule features had the advantage of locating all information about idiosyncrasies in the lexicon. In this respect, the use of a value for [+FOCUS] in the selectional features of these irregular verbs has the same result as a rule feature. Needless to say, it is available not only for dative movement exceptions but also for exceptions to any rules which are triggered by [+FOCUS]. For example, the fact that verbs like cost, have, marry (in one sense) and resemble do not undergo passivization can be indicated by including in their selectional features the information that they can only be inserted into P-markers in which the direct object NP is [-FOCUS]. The difference between the use of [+FOCUS] in this way and the use of rule features is that [+FOCUS] is independently motivated in the grammar, whereas the sole motivation of rule features is to indicate irregularities. The use of [+FOCUS] as a kind of rule feature amounts to a more general application of a part of the grammar's formal apparatus, allowing at least a limitation of the use of rule features per se, which are ad hoc by definition.

3.3. The ordering conundrum

An attempt to integrate the focus interpretations of passivization and dative movement into a grammar of English

reveals that the conceptual framework in which deep focus has so far been presented is inadequate, and must be refined. In the course of illustrating this inadequacy, I will also show that all previous formulations of these rules within the standard theory have been inadequate insofar as none of them has been able to generate all the passivized indirect object constructions which are grammatical in English. The revision in the theory of deep focus not only provides a solution for the integration of the focus interpretations in the grammar, but also generates all of the grammatical strings.

The problems for both the standard and the focus formulations arise because passivization and dative movement are inter-related in a particular way. The inter-relationship has already been implied in the formalism of the rules, in which the SD's are partially similar. Specifically, as the rules suggest, either the direct object NP or the indirect object NP may be front-shifted by passivization to occupy the subject NP slot. The crucial examples are (39b-d), in which the (b) member front-shifts the indirect object and the (c-d) members front-shift the direct object:

(39) (a) The farmer gave John a Clydesdale. (= (22a))

(b) John was given a Clydesdale by the farmer.

(c) A Clydesdale was given to John by the farmer.

(d) A Clydesdale was given by the farmer to John.

Clearly, an adequate grammar of English must generate sentences like these.⁵

Standard formulations have exploited the optionality of the rules in their attempts to generate such strings (for example, Fillmore 1965: 29-32; Kuroda 1968a: 375-76; Jacobs and Rosenbaum 1968: 146-47). However, no formulation yet proposed has accounted for both (39c) and (39d) in the grammar. To illustrate, I recapitulate Jacobs and Rosenbaum; other attempts differ in some details, such as the deep structure representations, but the results are the same.

Jacobs and Rosenbaum consider the deep structure of indirect object constructions to be the string which underlies (40):

(40) Swift sent a note to Stella.

Both of the relevant transformations, passivization and dative movement, are considered optional. Obviously, to generate any of the strings parallel to (39b-d), passivization must apply. But if it is ordered prior to dative movement, only the direct object of (40) can be front-shifted, thus generating (41), parallel to (39c), but blocking the other derivations:

(41) A note was sent to Stella by Swift.

Since the indirect object can never be passivized under this ordering, the ordering must therefore be reversed. If dative movement, now the first rule, is not applied, the surface structure (41) can still be generated by the PSV rule. If, however, it is applied, the deep structure (40) is transformed into the (intermediate, in this case) structure (42):

(42) Swift sent Stella a note.

Then passivization can apply, generating (43), parallel to (39b):

(43) Stella was sent a note by Swift.

Notwithstanding the authors' claim that "all possibilities have been generated", there remains the further possibility (44), which is parallel to (39d):

(44) A note was sent by Swift to Stella.

Notice that the standard formulation cannot be patched up in any acceptable way in order to generate sentences like (44) as well as the others. What would be required is the second ordering, but dative movement must then apply again after passivization to move the indirect object around the agentive NP in a string like (41). That is, dative movement must be ordered both before and after passivization.

The present formulation of the rules in terms of focus fares no better. The problem resides in the fact that the specification [+FOCUS] when attached to the indirect object NP is capable of triggering either passivization or dative movement. Without recourse to rule optionality--which, it should be noted, would permit a partial solution equivalent in weak generative capacity to the standard formulation--the problem is even more binding. Consider the possibilities, given the underlying representation (45).

(45) Swift sent [^{Stella}_{+FOCUS}] a note.

When obligatory dative movement is ordered before passivization, also obligatory, the only possible derivation is (46):

(46) Swift sent a note to Stella.

Reversing the rule order, the only possible derivation is (47):

(47) Stella was sent a note by Swift.

In other words, either possible ordering generates one string and automatically blocks the others.

What is apparently needed is a formal distinction in the grammar which reiterates the informal distinction made in §2 between the two distinguishable kinds of focus permutations, namely, those which prepose constituents, and those which postpose constituents to the intonation center. If such a distinction were made, the rules could be reformulated in such a way that the conflict between partially similar rules which are sensitive to the specification [+FOCUS] is avoided.

To demonstrate how this can work, we can for the time being make the distinction in terms of two quite arbitrary features. Rules of the first type, that is, preposing permutations, will be triggered by the feature [+1 FOCUS]; rules of the second type will be triggered by [+2 FOCUS]. We further assume that either the indirect or the direct object can be marked [+1 FOCUS], and that the indirect object can be marked [+2 FOCUS], but the latter can never be marked both [+1 FOCUS] and [+2 FOCUS]. As before, either can alternatively be marked [-FOCUS]. The pertinent transformations will have to be revised, of course, so that passivization is sensitive to [+1 FOCUS] and dative movement to [+2 FOCUS].

We see now that the possible deep structure configurations available in such a schema are matched by the grammatical

surface realizations of (39). The set of deep structures is given in (48), with references to surface structures already cited, as follows:

(48) (a) Swift sent [^{Stella}_{+2 FOCUS}] [^{a note}_{- FOCUS}]

+ Swift sent a note to Stella.

(b) Swift sent [^{Stella}_{+1 FOCUS}] [^{a note}_{-FOCUS}]

+ Stella was sent a note by Swift.

(c) Swift sent [_{-FOCUS}^{Stella}] [^{a note}_{+ 1 FOCUS}]

+ A note was sent to Stella by Swift.

(d) Swift sent [^{Stella}_{+2 FOCUS}] [^{a note}_{+1 FOCUS}]

+ A note was sent by Swift to Stella.

The proposed revision generates all the grammatical strings, thus attaining a level of observational adequacy which cannot be attained by standard formulations.

3.4. The two aspects of deep focus

3.4.1. Topic as [+1 FOCUS]. To this point the formal bifurcation of deep focus is motivated syntactically by the necessity of expressing in the grammar the complex inter-relationship between passives and datives. Additional syntactic motivation is presented in §4. What is required now is a more reasonable characterization of the bifurcation than has been afforded by attaching integers to the feature [+ FOCUS]. I note in passing, however, that the use of integers is similar to the informal characterization of Fillmore (1968: 57), who uses the terms "primary" and "secondary" in a manner which corresponds roughly to my use

of '1' and '2', respectively. In his terms, "topicalization" corresponds to 'focus':

Primary topicalization for English involves position and number concord; stylistic changes involving stress assignment, late word-order changes, and possibly the 'cleft sentence construction' fall into what might be called 'secondary topicalization'.

However, Fillmore does not justify his use of the terms, and I regard his precedent as too insubstantial by itself to warrant maintaining the integers.

Another way of stating the distinction between [+1 FOCUS] and [+2 FOCUS] is to say that the former always creates a 'topic' in the sentence, whereas the latter never does. In place of the feature [\pm 1 FOCUS] I will henceforth refer to [\pm TOPIC], and rules like passivization will be sensitive to the specification [+TOPIC]. The feature [\pm 2 FOCUS] can now simply be [\pm FOCUS], with no problems of overlap. Lakoff claims that such a distinction is required semantically anyway, in order to provide an interpretation for a given string (cf. his schema for a semantic representation, §1.3).

While the bifurcation between topic and focus comes about primarily because they are realized by distinguishable types of transformations, the formalism must further express a number of minor differences. In the first place, it seems that there is always one noun constituent under the domination of every S which is marked [+TOPIC]. That is, the surface subject NP always has the same sense of being 'weakly focused', whether the constituent which occurs there is the result of a transformational rule or not. This is the position also

taken by Fillmore, as indicated by the above quotation. Its basis is reasonable enough: to maintain that, say, simple declaratives have no [+TOPIC] constituent is to imply that the subject of that simple declarative is somehow 'less a topic' than is the subject of its passive counterpart.

This situation apparently does not hold for the feature [+FOCUS], for, as I have noted in §2, constructions can be wholly unfocused or unemphatic. Indeed, that there are constructions without focused constituents is the basis for the characterization of marked and unmarked word orders. In light of the proposal that every sentence contains a topic noun, which is a focused element, that characterization now appears to be too simple. A straightforward revision is required: viz, unmarked structures are those derived without the application of any focus device(s), where a focus device is defined as a transformation which is sensitive to either [+TOPIC] or [+FOCUS].

Secondly, while there is always one topic noun, there must always be only one. We have seen that either the indirect or direct object NP can become the surface subject. Notice that if either of the object NP's is specified [+TOPIC] as well as the deep structure subject NP, the rules will introduce a paradox inasmuch as the SC of passivization will meet its SD, ad infinitum. Notice further that if both object NP's are marked [+TOPIC], the rules will reintroduce the old ordering conundrum, ad nauseum. In terms of the data considered so far, the grammar must include a rule which assigns [+TOPIC] to one and only one member of the

set of subject and object NP's. This again contrasts with the feature [+FOCUS] which cannot be similarly restricted to one occurrence per S, as is indicated by multiple occurrences of contrastively stressed constituents in §2.

The analysis presented to this point in §3 is corroborated and extended in §4 and §5. In §6, an attempt to formalize the analysis is undertaken, which then serves as the basis for the theoretical issues introduced in §6 and §7.

3.4.2. The pan-categorial nature of [+FOCUS]. Although this thesis is mainly concerned with focused NP's, it is interesting at this point to note that another difference between the features [±TOPIC] and [±FOCUS] resides in their applicability to grammatical categories. An obvious additional restriction upon [+TOPIC] is its occurrence in noun matrices only. This is merely a formal realization of the fact that the topic, at least in standard English, is apparently always a NP. In this regard, English differs from German, for Bach (1962: 268) writes a "Topic-shift" transformation for German which optionally shifts "any element, including the finite verb, to front position." Note that the correctness of Bach's rule for German receives indirect support from German-based English dialect data, notably Yiddish English, which superficially seems to have carried the German rule as a calque into English. For example, sentence (49a) topicalizes an adjective phrase, and (49b) topicalizes a verb:

(49) (a) Fond of many boys Sara Weinstein isn't.

(b) Give he didn't; sell he did.

The 'strangeness' of examples like (49) to most speakers of standard English also provides support for the restriction upon the application of [\pm TOPIC] to NP's.

In any case, that restriction takes on significance here by contrast with the feature [+FOCUS], which can evidently occur in the feature matrix of virtually all categories. In this sub-section I briefly outline focus interpretations of a number of syntactic processes which involve categories other than nouns, by way of establishing the contention that [+FOCUS] is pan-categorial. The processes outlined below probably do not exhaust the focus devices for any one category.

Verbs are focused in constructions that Chomsky (1957: 65) has called affirmatives, such as (50b):

(50) (a) Xeno came.

(b) Xeno DID come.

Capitalization indicates that contrastive stress is obligatory in such constructions. These constructions can be generated by specifying that the normal verb affix attachment rule can operate only when the V is [-FOCUS]. Otherwise, the tense (T) node will be peeled out to the left of a focused V. Thus, by blocking affix attachment in constructions which would otherwise be realized as (50a), the tense-carrier do will automatically be inserted by the rule of DO SUPPORT, and the construction is realized instead as (50b).

Actually, a case can also be made for affirmative constructions as surface realizations of focused tense. It seems to me that they can in fact be either. As suggestive evidence for this, consider the linguistic context in which a sentence like (50b) can occur. As a reply to (51), (50b) is apparently an instance of V focus, since it implies that the act of coming is of primary importance:

(51) If Xeno wasn't such a snob, he would have come to the orgy.

On the other hand, considered as a reply to (52) it is apparently an instance of T focus, since it implies that the time of coming is of primary importance:

(52) Is Xeno ever going to come to an orgy here?

It follows that surface structures like (50b) are ambiguous with regard to what is being focused. They are, however, disambiguated in the deep structure if we extend our analysis so that the affix attachment rule is blocked by either [+T, +FOCUS] or [+V, +FOCUS].

Most adverbs ending in -ly can be focused. Conveniently ignoring the possibility of deriving such adverbs from underlying adjectives (Lakoff 1965: F3ff; Keyser 1968: 366ff) for the sake of simplifying the exposition, I assume that the unfocused adverbial position is in the VP and that the marked position, which is contingent upon the specification [+FOCUS] triggering adverb extraposition, is initially and/or finally. Jackendoff (1969: 200-03) has organized some data on adverbs in -ly which nicely correlates with this interpretation. He observes that the position in which they can

virtually all occur is (what I have called) the unfocused position, as illustrated by (53):

(53) {
 apparently
 cleverly
Xeno { specifically } denounced the Christians.
 frequently
 totally

Some adverbs, like merely, simply, utterly and virtually, cannot occur elsewhere. These irregular cases can be specified in a grammar which incorporates deep focus by including the feature [-FOCUS] in their lexical entries, in the manner already outlined. However, all but a few of them permit initial preposing, as in (54):

(54) {
 Apparently
 Cleverly
 Specifically } Xeno denounced the Christians.
 Frequently
 *Totally

Those which do not allow initial preposing, however, may be postposed, and many can be extraposed both ways:

(55) {
 *apparently
 cleverly
Xeno denounced the Christians { specifically }
 frequently
 totally

Evidently some rule feature is required to subcategorize these data with respect to the positions they can assume when focused, but for our purpose it is sufficient to note that

the specification [+FOCUS] on adverbs ending in -ly is a plausible motive for extraposition.

Demonstratives are focused in deictic constructions (see footnote 2, §1), like (56):

(56) (a) This farmer here raises wildebeest.

(b) That farmer there raises crabgrass.

The specification [+FOCUS] on a demonstrative can be used to trigger a rule which copies part of the feature matrix of the demonstrative and adds other features to it which provide for the insertion of the phonological shape here or there on a later lexical pass.

Provisionally, it seems that verbs, adverbs, demonstratives and tense formatives are among the categories other than nouns which can be focused. Of course, all categories can be contrastively stressed, including even articles and verb particles, as in (57a) and (57b), respectively:

(57) (a) It is A theory of syntax, not THE theory of syntax.

(b) He went AWAY for a rest.

As a focus device, contrastive stressing will be triggered by a feature specification which includes [+FOCUS] on these constituents (cf. §5.4). Thus the feature [±FOCUS] must be allowed to occur not only more freely but also more widely in the grammar than does [±TOPIC].

The recognition of [+FOCUS] as a pan-categorial feature raises a theoretical issue which foreshadows an argument in §6.4 below. The framework of the standard theory does not provide any means of capturing the notion that

certain rules of the grammar must be pan-categorial. Instead, it requires, at best, that such rules be repeated for each category, with the possibility of conflating them under the condition that the rules are ordered sequentially, as is indicated by (58):

$$(58) \left\{ \begin{array}{c} \cdot \\ \cdot \\ \cdot \\ [+V] \\ [+DEM] \\ [+T] \\ \cdot \\ \cdot \\ \cdot \end{array} \right\} \rightarrow [\pm FOCUS] .$$

Vanek (1969b: esp. 562-63), on the basis of different data, argues that the model should be revised in order to allow such rules to be expressed in terms of the "natural classes" of categories to which they apply. That is, he argues that the standard model's distinction between categories and features should be eliminated by the reanalysis of presently accepted categories as sets of features, one of which might be [+CATEGORY]. Under this revision, the complex rule represented by (58) can be significantly simplified as (59):

$$(59) \quad [+CATEGORY] \rightarrow [\pm FOCUS]$$

The analysis of [\pm FOCUS] as a pan-categorial feature provides additional evidence for Vanek's proposal.

FOOTNOTES

1. The preposition by is attached to all subject NP's by the "preposition segmentalization" transformation (1967b: 47); when passivization does not take place by is deleted. This analysis has been attributed to Postal (see R. Lakoff 1968: 44) who suggests that "by is present in the deep structure of all sentences preceding their subjects, as a nominative case marker." A similar proposal is used in case grammar (Fillmore 1966; 1968), where all noun phrases in the deep structure have prepositions as sister nodes, which are deleted under certain conditions, one of which is when the PP is the subject node.

2. Emonds (1969: 66) stars such constructions, but he refers to them as "somewhat unacceptable"; he accepts Fillmore's data provisionally. Apparently his dialect hedges between Fillmore's and my own.

Indirect object constructions seem to show considerable irregularity, not only in different judgments about acceptability, but also in the subcategorizations of verbs which allow indirect objects, as we shall see below. Another dialect variation involves structures like (I):

(I) A hat was given me.

This is apparently grammatical for Fillmore, but it does not occur in my speech at all, being replaced by (II):

(II) A hat was given to me.

One is tempted to cite the irregularities as an instance of transition from the regularity of inflectionally case-marked OE toward some new regularity, perhaps in pervasively preposition-marked post-MnE. In any case, OE indirect object constructions are regularly formed as (III):

(III) hē sealde ælcum āne pening
 (= he-NOM gave each-DAT a penny-ACC)

The apparent ungrammaticality of sentences like (25) in some dialects may be the result of strange or confused readings of the surface subject NP as nominative or accusative rather than dative after the case markings were lost (cf. Fries 1940: 306), as in (25'):

(25') (a) John was bought... [at an auction?]

(b) The guests were saved... [by an evangelist?]

(c) My sister was built... [?]

3. Note that the indirect object node of envy must be optional to permit structures like (I) as well as (29a):

(I) I envy your garden.

A few speakers I have questioned about pairs like (I) and (29a) consider the latter to be ungrammatical. Many, including myself, find it somewhat strange.

4. The optionality of the indirect object of purchase is meant to indicate the grammaticality of sentences like (I):

(I) He is purchasing a sump pump.

However, it may be that purchase should in fact obligatorily include an indirect object in its deep structure analysis, since sentences like (I) always imply an indirect object which is identical to the subject NP and sometimes is present in the surface structure, as in (II):

(II) He is purchasing a sump pump for himself.

Perhaps the indirect object is always present in deep structure, and sentences like (I) are the result (in part) of a late deletion. Something like this may also be going on with verbs like envy (footnote 3 above), since its indirect object is usually repeated as a possessor in the direct object.

Notice that a verb like donate always requires an indirect object, either in the surface representation or in its linguistic context. Sentences parallel to (II) with donate are anomalous:

(III) ?He is donating a palimpsest to himself.

This fact presumably finds a semantic explanation in the fact that donate presupposes that something is given to a second party. Because of the presupposition, the indirect object can never be identical to the subject NP, which means that deletion can never apply.

5. Notice that indirect object constructions require the preposition whether the indirect object precedes or follows the passive agentive. Thus, the for-dative constructions parallel to (39c-d) are (Ia-b), respectively:

(I) (a) A Clydesdale was bought for John by the farmer.

(b) A Clydesdale was bought by the farmer for John.

The preposition peeling rule will have to apply to any indirect object when it follows another NP, and also when it precedes by + NP.

§4: THE TOPICALIZATION PROCESS

§4 offers proposed reanalyses of some syntactic processes of English in order to corroborate and extend the conceptual framework of deep focus developed so far. In §4.1 parallel arguments for all the main points made in §3 are exemplified in interrogatives. In §4.2, the bifurcation is further motivated for certain structures with be. In §4.3 the claim that every S has one and only one topic NP is demonstrated in certain complementation constructions. The consideration of these data leads to the extrapolation of a general process of TOPICALIZATION in §4.4. Finally, §4.5 speculates on a further generalization which is suggested by the description of English data in terms of deep focus.

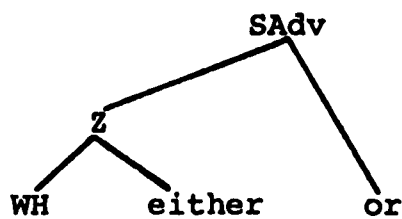
4.1. Interrogatives and focus

The discussion which follows is based on the analysis of interrogatives by Katz and Postal (1964: 79-112). In general, Katz and Postal consider interrogatives to derive from deep structures marked by the sentence 'type' node Q as the leftmost constituent. Although they propose by their analysis to obliterate the well-known distinction between YES/NO questions and WH questions (cf. Chomsky 1957: 63,69) by positing an underlying WH-form in both of them, the distinction remains in the way in which WH is attached in each case. In YES/NO questions, WH occurs under the dominance of a Sentence Adverbial (SAdv) as the surface formative whether,

for which Katz and Postal posit the deep structure

(1) (1964: 96):

(1)



They point out that whether is related to either-or in sets like (2):

(2) (a) Either John came or not.

(b) I noticed whether John came or not.

This analysis of YES/NO questions with underlying whether which is obligatorily deleted after it triggers AUX preposing (rule T2, 1964: 105) is supported both diachronically and synchronically. Diachronically, they note that the obligatory deletion of whether is a fairly recent development in English syntax (1964: 97); at one time, sentences like (3) occurred (for examples, see Lieberman 1967: 133-43):

(3)*Whether did John go or not?

Synchronically they find cogent support for their analysis in the realizations of Q-dominated embeddings of verbs like wonder (1964: 110). They note that the WH-words, including whether, turn up in the surface structures of such sentences, although the embedded S does not undergo AUX preposing, as in (4):

(4) (a) I wonder when John came home.

(b) I wonder where John lives.

(c) I wonder how John sleeps.

(d) I wonder whether John sleeps.

In constructions like (4) the outer S can be postposed, and when this happens the embedded S's are realized as fully formed interrogatives, including AUX preposing. However, in this case the form with whether, (4d), deletes its WH-word, leaving the embedded YES/NO question of (5d):

(5) (a) When did John come home, I wonder.

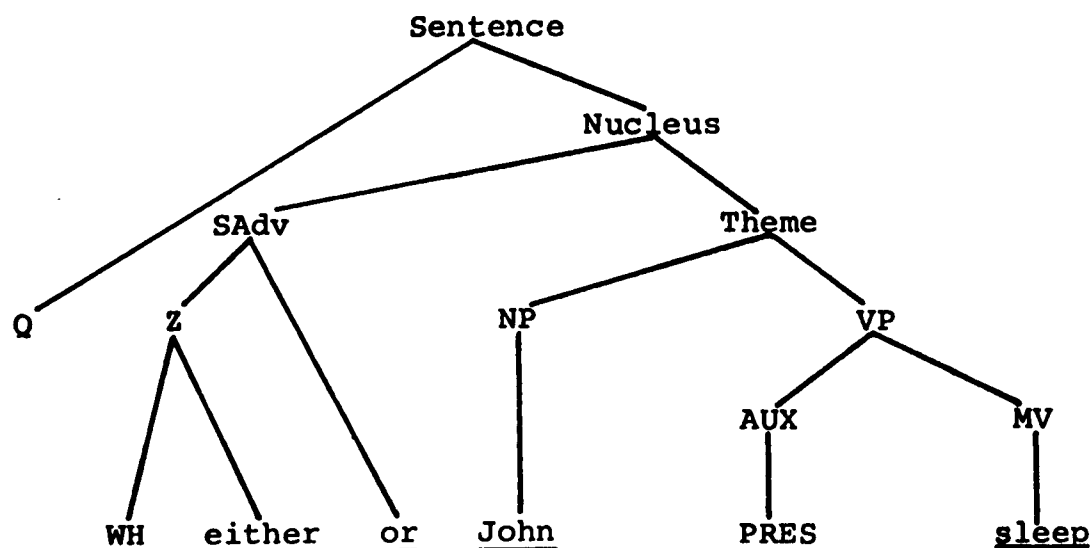
(b) Where does John live, I wonder.

(c) How does John sleep, I wonder.

(d) Does John sleep, I wonder.

In sum, they propose that YES/NO questions be derived from deep structures like (6) (1964: 104):

(6) Deep structure: Does John sleep?

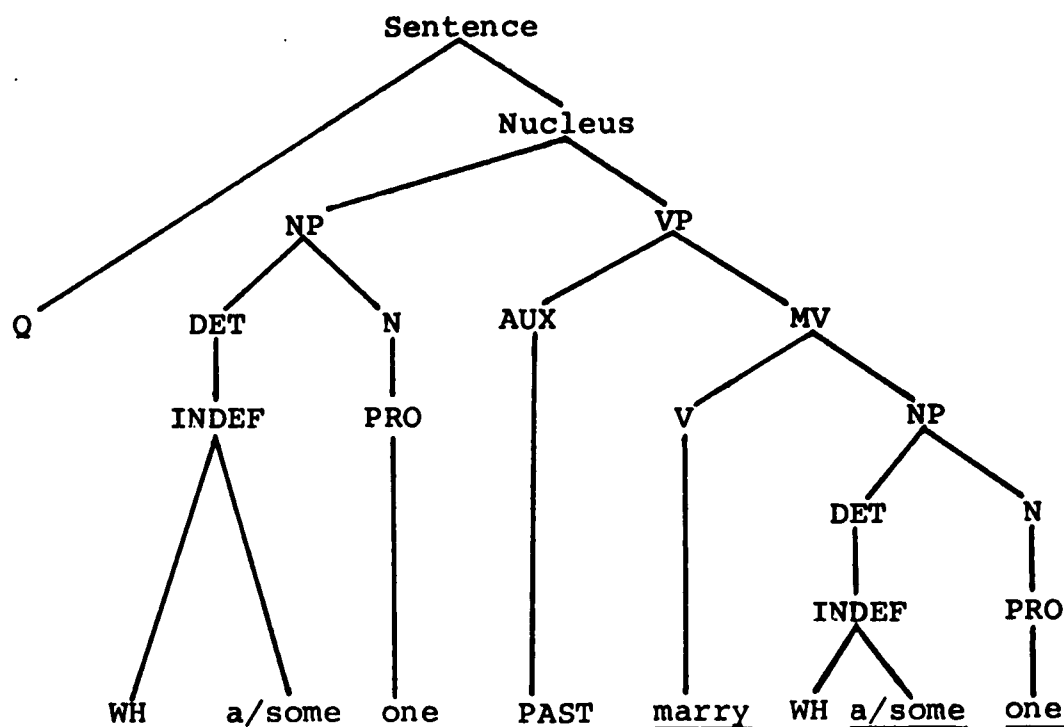


By contrast, deep structures for WH-questions have WH attached to the DET constituent of NP's of which the N is obligatorily PRO. The constituent PRO is a terminal symbol of all lexical categories which is, in effect, content-less (1964: 80-84).

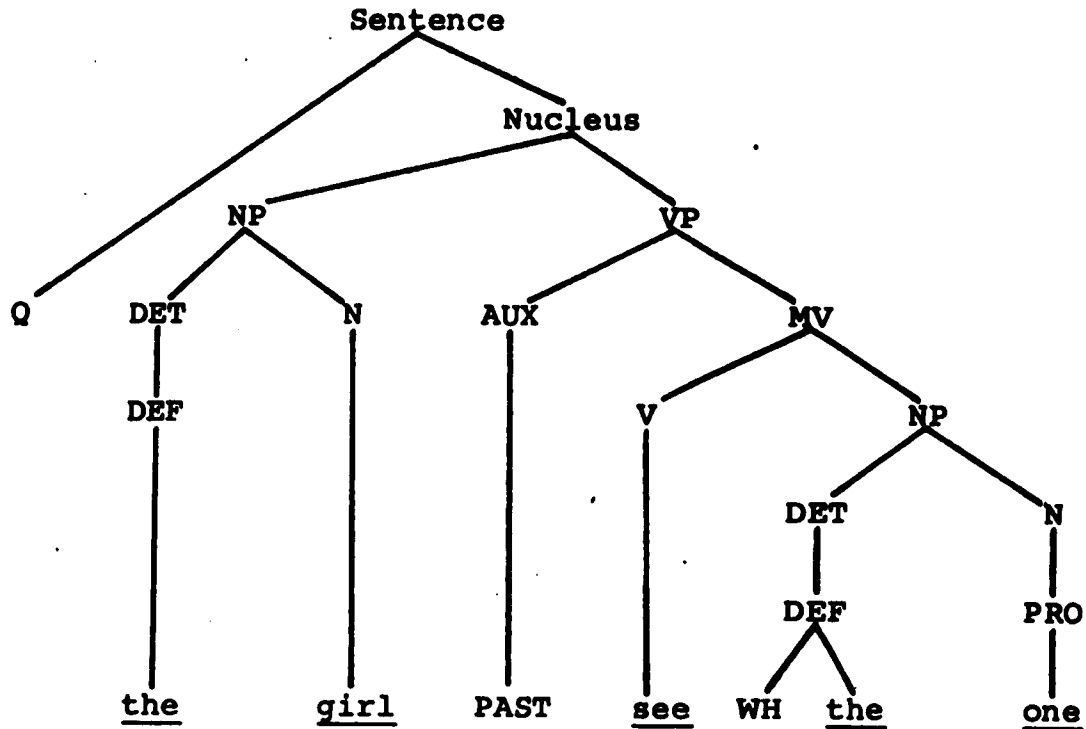
Its postulation in the deep structure of constituents realized as who, what, and so on, captures the fact that semantically

such items express 'genus' but not 'species' properties, whereas the original formulation (Chomsky 1957: 69-72) had ignored this fact and arbitrarily derived who, what, and so on, from specific N's like John, the Clydesdale, and so on. The attachment of WH to the determiner node is motivated by a distinction among WH-words corresponding to the distinction between definite (the) and indefinite (a/some) articles (1964: 91-93; this analysis is by no means universally accepted-- cf. Kuroda 1968b: 251-54 and Browne 1970: 269-70). As an illustration, note the underlying representation for who as WH + a/some + PRO in (7) and for which one as WH + the + PRO in (8). P-markers (7) and (8) exemplify the deep structures of WH-questions (1964: 103):

(7) Deep structure: Who married whom?



(8) Deep structure: Which one did the girl see?



The above outline presents the essential points of the analysis on which my own comments are predicated.

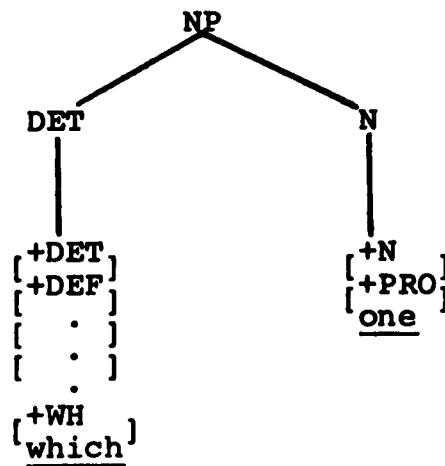
A few minor notational differences should be pointed out, although nothing crucial hangs on them. In my analyses, I consider AUX and DET to be sets of features on V and N, respectively, in the deep structure rather than nodes. (An elaboration and justification of the conception of grammar which underlies this analysis is presented in §6 and §7.) Leaving AUX out of consideration for now, this means that the rightmost NP of (8), for example, will be written as (9):

(9)



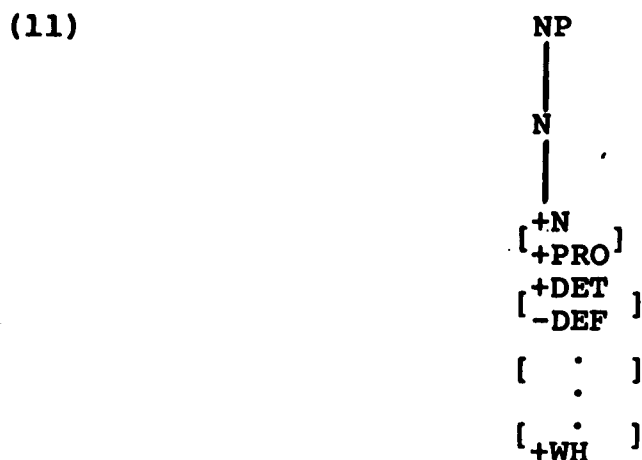
The derived structure, which more closely resembles (8), results from the determiner attachment rule by which articles, demonstratives, inalienable possessors and WH-definites are peeled out as nodes (cf. §6.3.2. below). The attachment rule peels out a subset of the N matrix to the left of N, and a subsequent lexical pass fills in the phonological shape, deriving (10):

(10)



(See §7.2 for details on derived structure.) Although one notational system is readily transliterable into the other, note that the system of (9) and (10) is more economical. In place of the morphophonemic rule which quite arbitrarily derives the phonological shape which from the string WH + the,

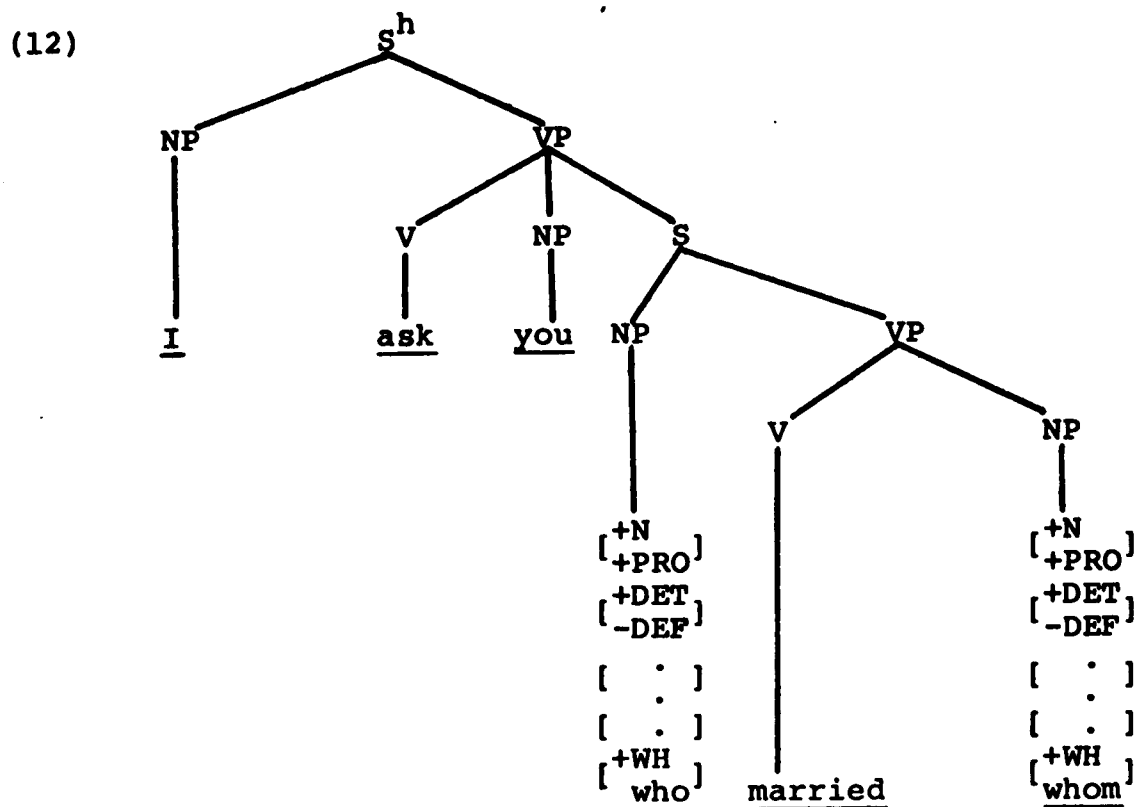
it inserts the phonological shape which according to a configuration of syntacto-semantic features attached by an independently motivated rule. The notational economy is even more obvious in the case of WH-indefinites such as who(m), which Katz and Postal derive by a morphophonemic rule which operates on the rightmost node of (7). The notational equivalent of this node in (7) is (11):



That is, the determiner attachment rule is not applicable to (11), and who(m) is generated directly. This treatment automatically captures the generalization noted by Katz and Postal (1964: 91-92) that indefinite articles are invariably attached to following PRO-forms to form single words, as in someone, somebody, something, but not to following non-PRO-forms, which are therefore two words, as in some man, some person, some book. Katz and Postal use this generalization to motivate a rule which eliminates the word boundary between indefinites and PRO-forms. The alternative analysis captures the generalization more directly, by not imposing a boundary in the first place. Arguments for this notation which are more substantial

than notational economy are reserved for later sections, as already noted.

One final point on notation. Several grammarians have recently proposed that interrogatives (and all other sentence types) are embedded in higher S's with performative verbs called "hypersentences" (cf. Ross 1968, McCawley 1968b: 155-61, and Sadock 1969a, 1969b--the term is due to Sadock). In the proposed hypersentence analysis, a structure like (7) above will be represented as something like (12):



(where S^h = "hypersentence"). To the extent that it has been developed so far, the hypersentence seems to be a well-motivated innovation for generative theory. However, I intend to retain here the "type" marker Q which, essentially, the hypersentence replaces. My doing so should not be construed

in any way as an implicit criticism of the innovation. In fact, it seems to me that hypersentences find strong motivation in the fact that they explicate the semantic content of Q (as well as IMP(erative), DEC(larative), and other "type" markers) which in Katz and Postal is an arbitrary symbol to which the content is merely assigned. Nevertheless, I maintain the use of Q because it simplifies notation and enhances comparability of my analysis with the Katz and Postal analysis, and also because I regard Q as a kind of abbreviation of the S^h rather than a counter-proposal to it. In fact, Katz and Postal anticipate the hypersentence proposal in their description of the semantic content of Q as "I request that you answer..." (1964: 85-87), and also in their representation of Q as a sister node of S, which they write as "Nucleus" (see (6), (7) and (8) above), both of which are dominated by the root node "Sentence". The node "Sentence" is thus equivalent to the node S^h in (12) and it will be abbreviated as S^h in subsequent P-markers. The one point in their analysis of Q which is patently not equivalent to any aspect of the hypersentence proposal is their provision that Q be postposed in derivations of YES/NO questions, in which position it signals "rising intonation", which they posit as a possible "universal morphophonemic rule for Q" (1964: 110-11). This claim, which is wholly inconsistent with the thesis that Q and hypersentences are roughly equivalent, must be amended or thrown out anyway in view of the evidence that rising intonation does not universally characterize YES/NO questions (cf. Swadesh 1946: 317). By and

large, then, the proposals are equivalent.

Against this background, I wish to demonstrate the adequacy of the conception of deep focus by showing that it supplements the foregoing analysis of interrogatives at two crucial points. I begin by establishing a point on which the rest of the analysis is based.

4.1.1. Wh-forms as focused constituents. There are a number of details which indicate that WH-words are focused constituents. First among these is the fact that un-preposed WH-words, as in (13), are always at the intonation centre of the sentence:

(13) (a) Xeno saw who yesterday?

(b) She gave what to Sam?

In (13), rising intonation and main stress fall on who and what, respectively, rather than on the sentence-final constituents. Notice, incidentally, that the WH-words are not at the intonation centre when they are preposed, as in (14):

(14) (a) Who did Xeno see yesterday?

(b) What did she give to Sam?

I regard this as further evidence that topicalization is a special case of focus, in the sense that front-shifting and placement at the intonation centre do not overlap. On the other hand, if preposing the WH-words in (13) resulted in the retention of focus intonation, I would have to regard this process as a serious challenge to the bifurcation.

A second detail which supports the claim that WH-words are focused constituents is the evidence that indirect objects which are 'questioned' must undergo dative movement, which

implies in terms of the analysis of §3 that they are therefore [+FOCUS]. As a result, the (a) members of (15) and (16) are grammatical but the (b) members are not:

(15) (a) Fergy passed the puck to whom?

(b)*Fergy passed whom the puck?

(16) (a) Who did Fergy pass the puck to?

(b)*Who did Fergy pass the puck?

The claim that only focused constituents can be questioned builds into the grammar a natural way to exclude the (b) members.

The third argument is less direct. In discourse it happens that an answer to a question which includes a WH-word must include a replacement for that WH-word (or answer to it) at the intonation centre. That is, in the discourse represented by (17), the intonation centre will normally be the underlined constituent in (17A):

(17) (Q) Fergy passed the puck to whom?

(A) He passed it to the referee.

This intonation centre is, of course, normal and expected. But notice that in those cases where the answering constituent would normally be away from the unmarked intonation centre, the answering constituent still receives the main stress, usually by reducing the answer to a "semi-sentence" (Katz 1964). In the discourse (18), both (A') and (A'') are plausible answers to (Q), but the semi-sentence (A') is perhaps the more expected:

(18) (Q) Who received the pass from Fergy?

(A') The referee.

(A'') The referee received it from him.

In terms of deep focus, the widespread occurrence of semi-sentences as answers can be interpreted as, in part at least, a reflex of the unnaturalness of a topic which is at the intonation centre, as in (A''). For my purposes here, it is sufficient to note the implication of a parallel between focused constituents in the questions and answers of discourses, which I adduce as indirect evidence that WH-words are focused. This claim has significant ramifications for the analysis of interrogatives.

4.1.2. The assignment of WH in underlying representations.

One central problem in the Katz and Postal analysis is their inability to "characterize precisely the required universal syntactic rule for introducing WH" (1964:101). They consign this problem to the future on the basis of a forthcoming theoretical revision evident in some then-unpublished work of Chomsky. The revision has since appeared as Aspects (1965), but unfortunately the key to codifying the WH-assignment rule is not included in it.

A second problem, which turns out to be related to the first insofar as they have the same solution, is the assumption that Q and WH are independently chosen. As a result, it is possible to generate a deep structure WH in the absence of Q, which does not generate a surface structure except in embedded relative S's, and thus requires a transformational filter in the grammar. Some grammarians evidently consider

In this analysis, the related pair of sentences in (19) differ in their deep structures by the specification [+FOCUS] on the direct object of (19a) and [-FOCUS] on the same constituent of (19b). Both sentences are generable in a grammar which incorporates rule (20), since the deep structure direct object of (19b) simply fails to meet the SD of the rule.

Notice furthermore that (20), a transformational rule, does not violate the Katz-Postal principle on the semantic effect of transformations. While the content of the direct objects in (19), whom and someone, is semantically different, the difference is accounted for before the application of (20) by the underlying contrast in focus. Rule (20) would, however, violate the Katz-Postal principle if it were associated with a rule to front-shift WH-words, as has usually been the case in generative analyses of interrogatives. Chomsky (1957: 69) considered that WH-words were front-shifted obligatorily, and Katz and Postal (1964: 104) consider that they are front-shifted optionally. For all cases in the Chomsky analysis and for those cases in the Katz and Postal analysis when the front-shifting option is exercised, I would claim that the deep structure does not take account of the superficial topic and thus the transformations add semantically relevant information. These considerations foreshadow the second point in the supplemented analysis of interrogatives.

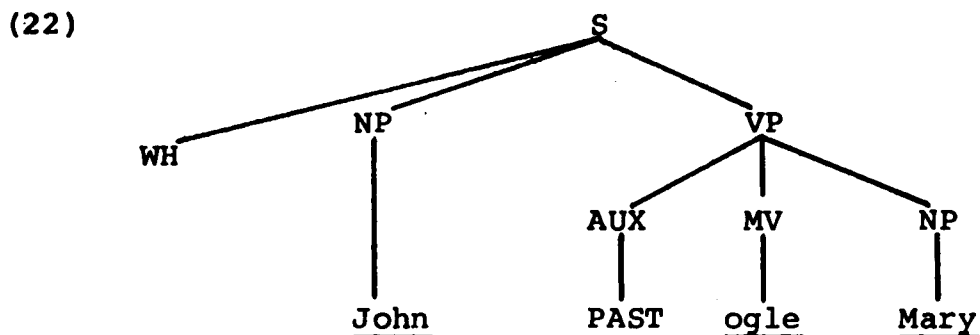
4.1.3. Ordering of WH-words in surface structures. Katz

and Postal motivate their decision to associate WH markers with NP's rather than with S on the basis of the occurrence of sentences with more than one WH-word (1964: 91), as in (21):

(21) (a) Who did what to whom?

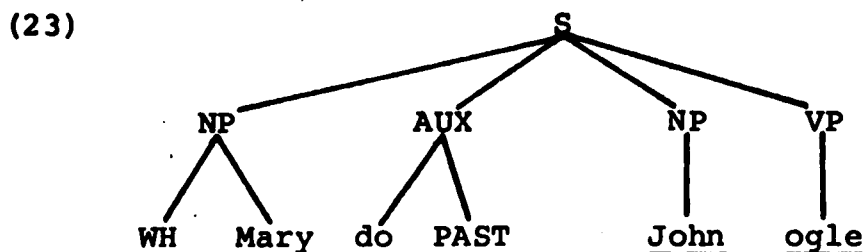
(b) Where did who do what?

Sentences of this type were characterized in §2, footnote 4, as "Goldie Hawn" sentences, a characterization to which I return below. Earlier formulations were unable to generate structures like (21) because they associated the WH marker with the underlying S as its leftmost constituent (Chomsky 1957: 69; Klima 1964: 11). Generally the WH was attached transformationally as a node, deriving a P-marker like (22) from the underlying declarative P-marker:



Subsequent rules obligatorily 'attracted' an NP to the WH and then permuted the AUX to the right of the WH + NP constituent. (Of course, the second step applies vacuously if the attracted NP is the deep structure subject, John in (22).) Application of these rules and obligatory DO-SUPPORT produces the surface structure (23), where the NP Mary is

the attracted node:



Morphophonemic rules later collapse the WH-ified NP and the AUX elements to yield: Who did John ogle?

By associating the WH marker with NP's rather than S's, Katz and Postal automatically allow more than one occurrence of WH per S, as required by (21). Moreover, by specifying that the rule which preposes WH + NP is optional, rather than obligatory as in the "WH-attraction" analysis, they can generate interrogatives with unpreposed WH-words, as in (13). However, their analysis is problematic insofar as it considers WH-preposing merely optional. That is, in the Katz and Postal analysis, the superficial relations among constituents in Goldie Hawn sentences are merely arbitrary, in the sense that the three members of (24) must have identical deep structures:

(24) (a) Who did what to whom?

(b) What did who do to whom?

(c) To whom did who do what?

In the Katz and Postal analysis, WH preposing applies willy-nilly to any (or no) WH-ified N; all such constituents meet the SD of the rule.

Deep focus eliminates the arbitrariness in both preposed/unpreposed alternations and Goldie Hawn alternants. Let us

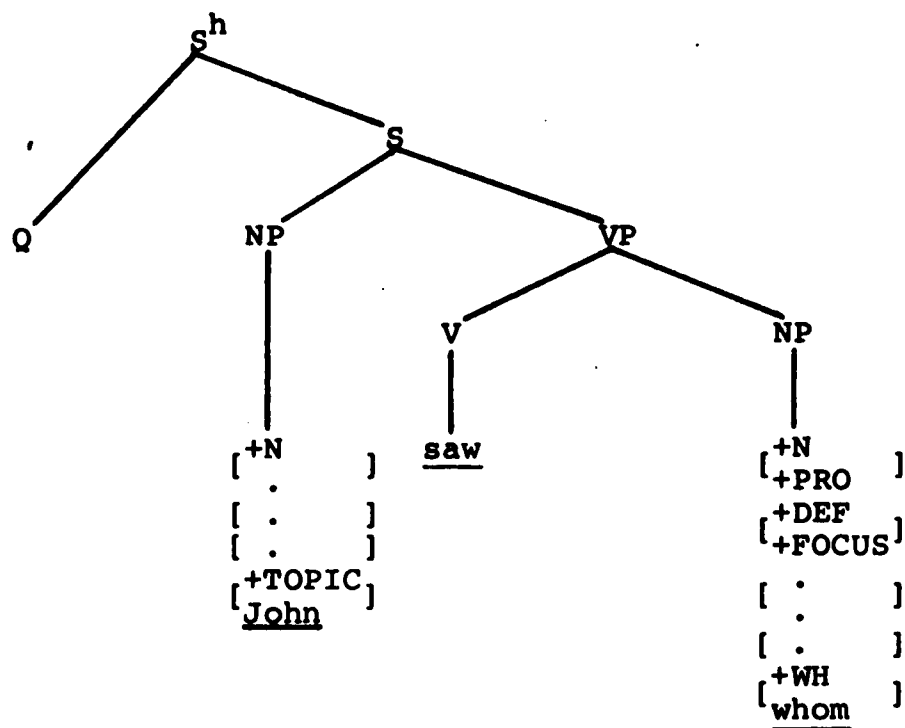
consider first the preposed/unpreposed alternants (25):

(25) (a) John saw whom?

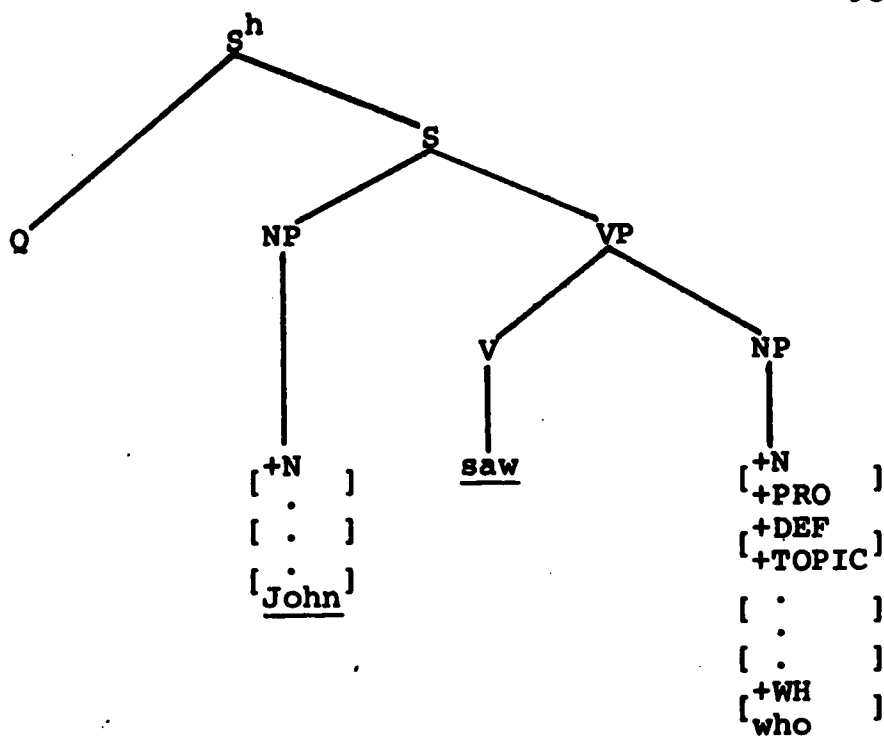
(b) Who(m) did John see?

The basic difference between the alternants is the topic, which is John in (25a) and who(m) in (25b). The underlying difference in terms of deep focus is that the focused deep structure object of (25a) includes the specification [+FOCUS] whereas in (25b) the same constituent is [+TOPIC]. The fact that focused constituents have alternative realizations as in (25) is a further detail which arbitrates in favor of the bifurcation of §3. Specifically, the distinction is realized in a grammar by distinctive underlying representations, as in (26), where (26a) represents the deep structure of (25a) and (26b) represents the deep structure of (25b):

(26) (a)



(26) (b)



Thus the preposing rule in the focus analysis is obligatory rather than optional, applying to constituents which are [+TOPIC]. The same analysis provides a non-arbitrary account of deep structure distinctions in the Goldie Hawn alternants, where, for example, in (24a) the deep structure subject is [+TOPIC] and the objects are [+FOCUS], in (24b) the direct object is [+TOPIC], and in (24c) the indirect object is [+TOPIC].

I note in passing that the claim in §3 that [+FOCUS] must apply to all N's (as well as other categories) in the deep structure is corroborated by the occurrence of Goldie Hawn interrogatives like (24) as well as by contrastive stress cases like (27):

(27) MARIE gave the BIRD to CLYDE.

In fact, the structures characterized by the rubric

"Goldie Hawn sentence", exemplified by (24) and (27), which I have yoked together on the grounds that they presuppose an unusually baffled speaker-hearer, find a formal characterization within the grammar as those S's which include more than two focused constituents. Similarly, the claim in §3 that [+TOPIC] must be specified on only one N finds corroboration in the application of deep focus to interrogatives. As Katz and Postal point out (1964: 107), two or more occurrences of WH-preposing within an S--in the present analysis, double or triple topicalization--are ungrammatical, as illustrated by (28):

(28) (a) *Where when did John travel?

(b) *When where how did John see Bill?

Similar structures are grammatical, but only by means of conjunction reduction, as indicated by the superficial occurrences of conjunctions and comma intonation in (29):

(29) (a) Where and when did John travel?

(b) When, where and how did John see Bill?

The preposed WH-words in (29) each receive the specification [+TOPIC] in the deep structure S in which they are constituents.

4.2. Another argument for the bifurcation

Another syntactic argument for the bifurcation of deep focus is available from an analysis of certain constructions with be in English. Consider the sentences in (30):

(30) (a) Some toys are in the box.

(b) There are some toys in the box.

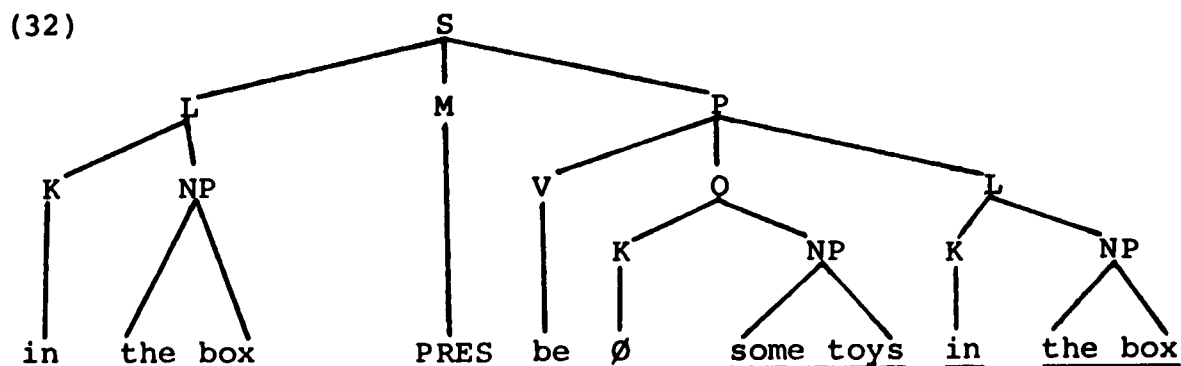
(c) In the box are some toys.

That constructions like (30a) and (30b) are related is commonly observed in the literature (cf., for example, Fillmore 1968: 45-46; Kirkwood 1969: 101ff; Chomsky 1968: 25-26). As the underlying structure for such sentences, I propose the SD (31):

(31) NP + be + ADVloc

(where ADVloc is a cover term for a PP which is [+LOCATIVE].) From (31), the variant (30a) can be derived by fairly direct rules. In order to derive (30b), I propose that the complex of features underlying there be inserted transformationally, under the condition that the head noun of ADVloc is specified [+FOCUS].

The derivation of the expletive construction by a transformational insertion in this manner contrasts with Fillmore's solution (1968: 45-46) in case grammar. Fillmore considers that the ADVloc node is copied in the initial position. The first occurrence of ADVloc is then 'reduced' to the expletive, which he considers to be the PRO-form of a locative, by PRONOMINALIZATION. P-marker (32) is the (essential) intermediate structure of an expletive construction after the operation of Fillmore's copying rule:



After PRONOMINALIZATION applies, the surface structure (30b) is derived. In terms of deep focus, a structure like (32) would seem more appropriately to be the result of a transformation which is sensitive to the specification [+TOPIC] rather than [+FOCUS], because Fillmore's rule derives there as a PRO-form of what is in essence the derived subject NP. Yet the topic of (30b) is intuitively the underlying subject many toys rather than the locative in the box or its PRO-form (in Fillmore's terms) there. That the ADVloc takes on greater emphasis as a result of the expletive derivation (30b) as compared to the unmarked construction (30a) seems to me to be correct, but I would maintain the analysis that it is result of a non-topicalizing focus device. Thus the analysis of expletives in terms of insertion rather than node-copying and pronominalization, and focusing rather than topicalization fits naturally into the framework of deep focus.

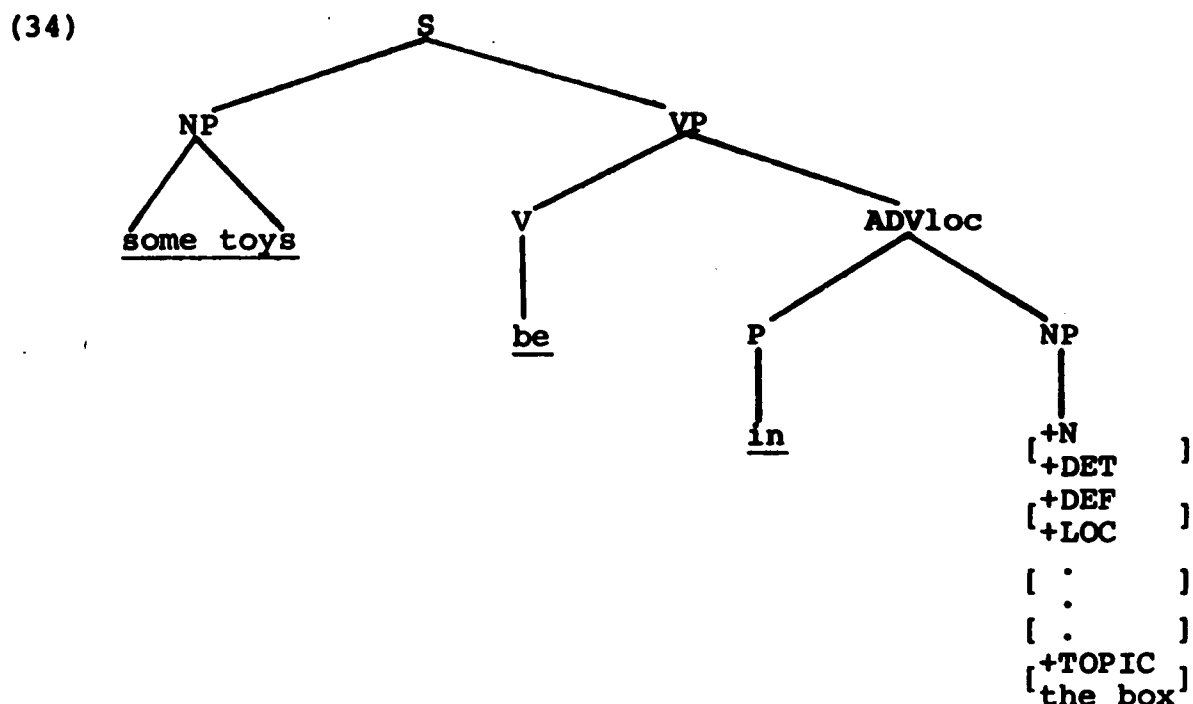
There are, however, more compelling reasons for maintaining the focus analysis. As a general criticism of Fillmore's analysis, note that there in (30b) is not locative there, which occurs with secondary stress rather than weak stress and permits a definite NP in its predicate whereas (30b) does not, as illustrated by the contrast between (33a) and (33b):

(33) (a) ²There is the ¹book on the table.

(b) ³There is a ¹book on the table.

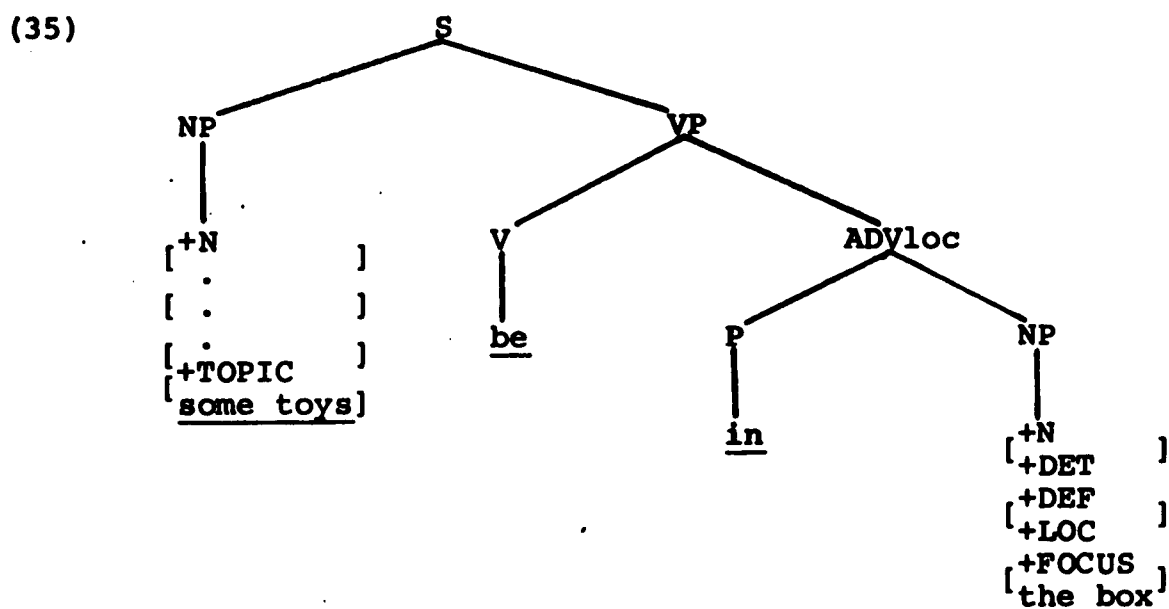
(See §6.3, footnote 7, for a more detailed analysis of these

constructions.) Consequently, Fillmore's derivation of the expletive as a PRO-form of the locative would seem incorrect. Moreover, from the underlying structure of the sentences in (30), for which (30b) is one possible surface structure, the grammar must also derive the surface structure (30c). Sentence (30c) involves permutation of the ADVloc to the subject NP node. I propose that it be derived from the underlying representation (34) by a transformation sensitive to the specification [+TOPIC] on the head noun of ADVloc:



On the other hand, structures with the there expletive like (30b) will be derived from underlying representations like (35), with the same underlying phrase structure as (34) but with the deep structure subject marked [+TOPIC] and the

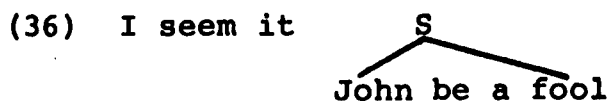
head noun of ADVloc marked [+FOCUS]:



The unmarked surface structure (30a) will be derived from the underlying representation of (35) except that ADVloc is specified [-FOCUS] rather than [+FOCUS]. Evidently, then, the bifurcation of deep focus into [+TOPIC] and [+FOCUS] can be further motivated in order to provide both possible marked constructions as derivations from the more 'basic' phrase structure of the related unmarked construction.

4.3. FLIP and FLOP

The claim that only one NP per S can be specified [+TOPIC] finds substantiation in a consideration of both passivized indirect objects and of interrogatives. However, I have not yet offered any substantiation for the complementary claim that not only is there only one such NP but there is always one such NP. Superficially, this claim would seem to be strongly challenged by an underlying representation like (36) (from R. Lakoff 1968: 41):



Notice that in the higher S of (36), the theory of deep focus is forced to assign the specification [+TOPIC] to either the impersonal PRO-form it, which is a mere placeholder, or to the underlying subject I, which cannot occur as the superficial subject of seem because of an idiosyncratic constraint (which also applies to appear) that it requires a subject complement in the surface structure. In what follows I want to demonstrate that the claim for one topic NP per S in the deep structure can be maintained with regard to (36) insofar as both possibilities for [+TOPIC] assignment yield intuitively correct surface structures, and that furthermore the feature [+TOPIC] can be used to motivate derivational steps from (36) to the surface which in the present analysis are optional. My excursus, except for the interlocutions about deep focus, closely follows the exposition of Robin Lakoff (1968: 38-43).

The schema (36) has been proposed as a deep structure with two possible surface structure realizations, shown in (37):

(37) (a) John seems to me to be a fool.

(b) It seems to me that John is a fool.

Since the underlying string is not related to either of the sentences in (37) in a very obvious way, it is perhaps useful to review the syntactic argument by which R. Lakoff motivates it as an appropriate deep structure. She notes that

seem and appear belong to a class of 'mental state' verbs which can undergo not-TRANSPORTATION, as exemplified in (38) and (39):

(38) (a) I think John isn't here.

(b) I don't think John is here.

(39) (a) It seems to me that John isn't here

(b) It doesn't seem to me that John is here.

She then points out that not-TRANSPORTATION "must be constrained so as to apply to a small class of object complements." If one assumes that in the deep structure seem and appear have subject complements as they must in the surface structure, they apparently prove to be the only cases where not-TRANSPORTATION must apply to subject complements. As a result, R. Lakoff concludes: "To consider these as subject complements, the form of the not-transportation rule would have to be greatly complicated and perhaps would become impossible to express." Therefore she considers seem and appear to have underlying object complements.

Accepting (36) as a reasonable analysis, then, it follows that seem and appear must obligatorily undergo the FLIP transformation in their derivation in order to permute their underlying object complements.¹ "Although...flip cannot be stated formally" (R. Lakoff 1968: 38), examples of its effect may be seen by comparing the (a) and (b) members of the following pairs (from G. Lakoff 1965: A15-17):

(40) (a) I was amused at what he did.

(b) What he did amused me.

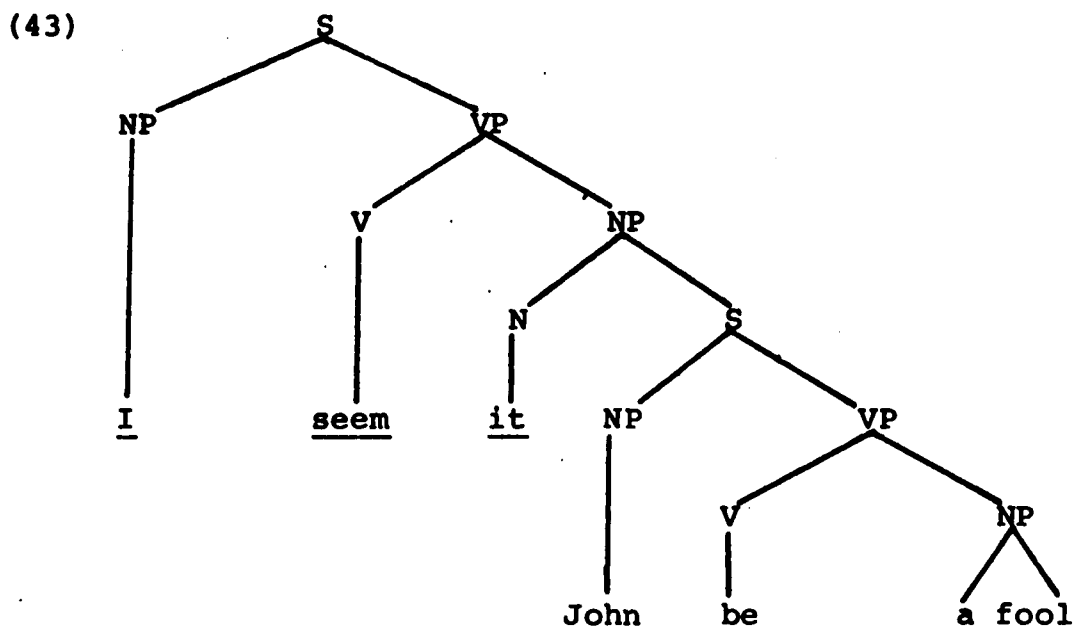
(41) (a) I was satisfied with his explanation.

(b) His explanation satisfied me.

(42) (a) She was pleased at what he had done.

(b) What he had done pleased her.

First, we replace the schema (36) by the P-marker for which it stands:

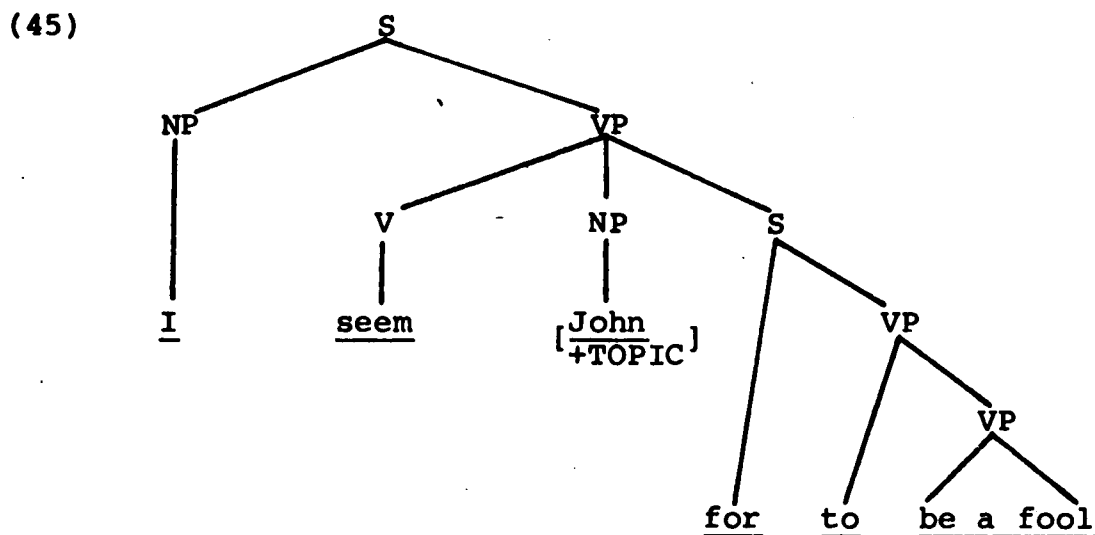


The deep structure (43) must undergo complementizer-placement. As can be seen in (37), either for-to or that-finite may apply. In R. Lakoff's analysis, the choice of one or the other is simply optional, and the surface structures in (37) are, of course, the result of the complementizer choice. If the for-to complementizer is selected, SUBJECT-RAISING and FLIP apply, resulting in (37a). If the that-finite complementizer is selected, FLIP and EXTRAPOSITION apply, resulting in (37b).

Following these derivational steps but introducing deep focus into the analysis, I propose that for-to complementation be contingent upon the underlying configuration (44), where (44) represents the formatives attached to the P-marker. (43):

(44) I seem [_{+TOPIC} it] [[_{+TOPIC} John] be a fool]

Keeping in mind the analysis of it as an impersonal placeholder, its specification as [+TOPIC] has force only under the negative interpretation that the alternative to it, namely I, is not the topic. Syntactically, this is realized by SUBJECT-RAISING, by which the only plausible alternative to I is raised from the embedded S to replace it, as in (45):



Now FLIP applies, with the effect of delivering the topic NP to the subject position. This analysis yields the correct result, since John and not I is the topic of (37a).

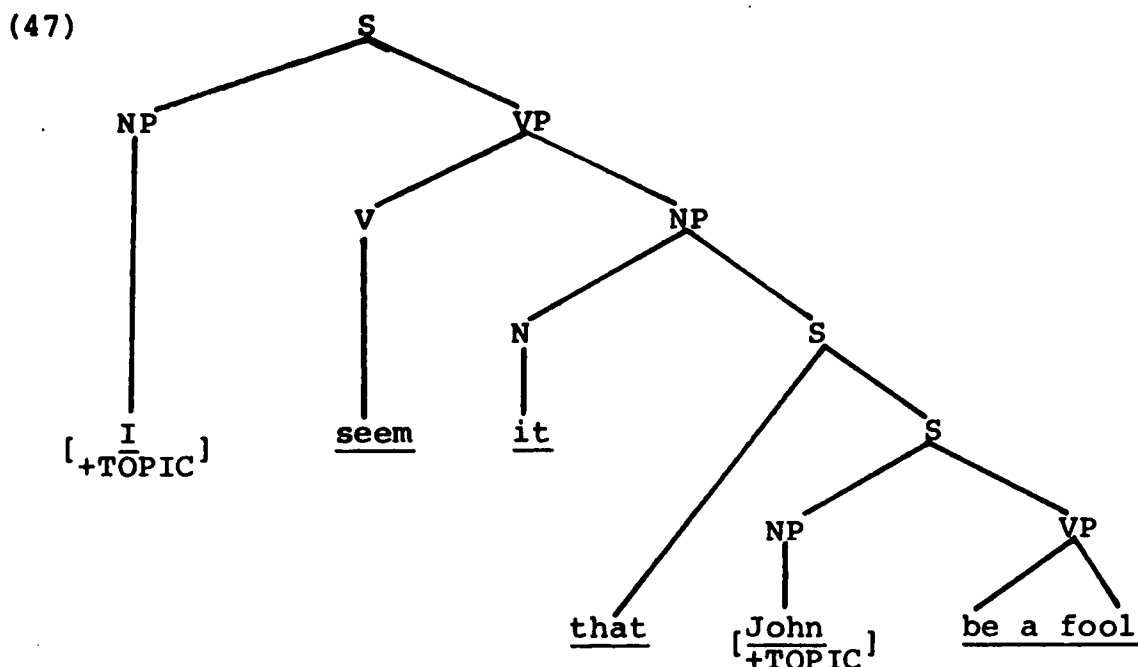
Similarly, I propose that the introduction of the that-finite complementizer be contingent upon the underlying

configuration (46):

(46) [_{+TOPIC}^I] see it [[_{+TOPIC}^{John}] be a fool]

This again gives the right result, since I (= to me) is the topic of (37b), and therefore the claim that every S contains one (and only one) topic can be maintained.

Although the surface subject node is filled not by I but by it, notice that this is the result of the idiosyncratic constraint upon seem and that the semantically empty placeholder appears as a reflex of the general constraint that surface subject nodes in English must be filled, with certain well-defined exceptions (namely, imperatives and "frigatives"--cf. Quang 1966). However, R. Lakoff's analysis does not capture this generalization. Moreover, her analysis is problematic on another count. At the point when that-finite placement has applied, we have the intermediate derivation (47):



This intermediate derivation is already very close to the surface actualization of (37b). However, R. Lakoff considers that this structure next undergoes FLIP, which in this case interchanges it + S and I (which is tacitly deleted from this point onward in her representation), thus deriving a structure much less like the surface than (47). Then EXTRAPOSITION applies, with the effect of undoing most of what FLIP had done. The end result is that FLIP and EXTRAPOSITION accomplish the interchange of I and it.

As a better alternative, I propose that FLIP be construed as operating only when it has the effect of placing the constituent which is [+TOPIC] in the subject slot, as it did the analysis of (37a) and as it does throughout the examples in (40)-(42) as well. If this is the case, FLIP does not apply to (47) at all. The subject and object interchange, which is all that is required to convert (47) to its surface structure, will be accomplished by a highly restricted rule capturing the idiosyncratic constraint that the subclass of 'mental-state' verbs which includes seem and appear can never occur with its deep structure subject on the surface. That is, in the present interpretation, FLIP will have the effect of transforming a string like (48a) to (48b):

(48) (a) I seem [^{John}_{+TOPIC}] . . .

FLIP applies

(b) [^{John}_{+TOPIC}] seem I . . .

By contrast, the idiosyncratic constraint will have the effect of transforming a string like (49a) to (49b):

(49) (a) [_{+TOPIC}^I] seem it . . .

the idiosyncratic constraint applies

(b) it seem [_{+TOPIC}^I] . . .

The rule which expresses the constraint must not precede FLIP or its output will trigger the FLIP rule and give the wrong result. Furthermore, it must be ordered immediately after FLIP or the contiguous formatives it-that will trigger either the EXTRAPOSITION or it-DELETION rule which immediately follow in the sequence of complementation rules (cf. R. Lakoff 1968: 44-46). This intimate association between FLIP and the proposed rule is highly suspect. In fact, an attempt to formalize them reveals that they are perfect mirror images of one another, in the precise sense of Langacker (1969: 576): "We may say that one rule is a mirror image of another when the terms of their structure indices [SD's] and output sequences [SC's] are identical, but occur in exactly reverse order." The mirror image relation may be seen by comparing (50), an approximation of the FLIP rule, with (51), which I will hereafter call FLOP. In (51), I adopt Langacker's device of reversing the integers of the SD to elucidate the mirror image relation:

(50) FLIP

SD:	N	V	[^{+N} +TOPIC]	
SC:	1	2	3	+
	3	2	1	

(51) FLOP

SD:	[^{+N} +TOPIC]	V	N	
SC:	3	2	1	→
	1	2	3	

Thus we see that these rules are not only strictly ordered but conflatable. By Langacker's convention, the asterisk on (52) designates that the rule can apply either from 'left to right' or from 'right to left':

(52) FLIP-FLOP

SD:	* N	V	[^{+N} +TOPIC]	
SC:	1	2	3	→
	3	2	1	

Of course, neither (50) nor (51) is a functional statement of the rules which they represent. Most notably, the V which occurs in the SD of both rules must somehow be specified so that it includes the subclass of 'mental state' verbs excepting seem and appear in (50) and the subclass of 'mental state' verbs including seem and appear in (51). Such specificity casts light upon the reason FLIP "cannot be stated formally", and at the same time casts doubt upon the cogency of the analysis. However, for our purpose here, it suffices as an illustration of the way in which a focus interpretation can be applied to the standard analysis of FLIP.

4.4. The topicalization process

We have now considered the syntactic processes of

passivization, dative movement, interrogation, topic locatives and flip, among others, in more or less detail within the conceptual framework of deep focus. In each of these processes we have explicated a strategy which has the effect of delivering the [+TOPIC] constituent to the sentence-initial position. To recapitulate, compare the (a) members representative of deep structures with the (b) members which are their corresponding surface structures in (53) - (57):

(53) (a) Zeus hit [^{Xeno}_{+TOPIC}]

(b) Xeno was hit by Zeus.

(54) (a) The farmer bought [^{John}_{+TOPIC}] a Clydesdale

(b) John was bought a Clydesdale by the farmer.

(55) (a) Xeno saw [^{who}_{+TOPIC}] yesterday

(b) Who did Xeno see yesterday?

(56) (a) Many toys are in [^{the box}_{+TOPIC}]

(b) In the box are many toys.

(57) (a) I was satisfied with [^{his explanation}_{+TOPIC}]

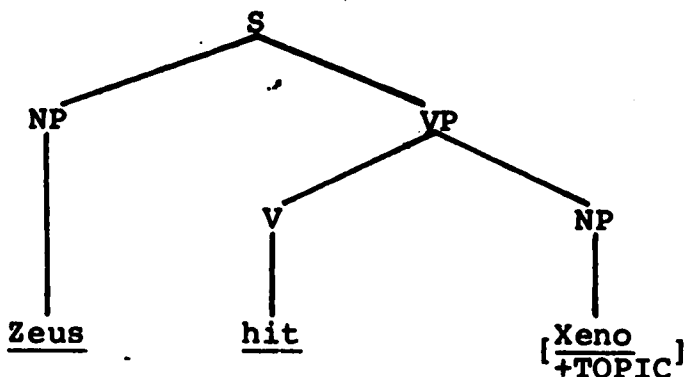
(b) His explanation satisfied me.

I propose that the grammar should express this general process directly rather than by repeating it piecemeal in the several rules in which it operates. In other words, it should be factored out as a general TOPICALIZATION transformation, by which the [+TOPIC] constituent is obligatorily front-shifted. The first issue that arises in the formulation

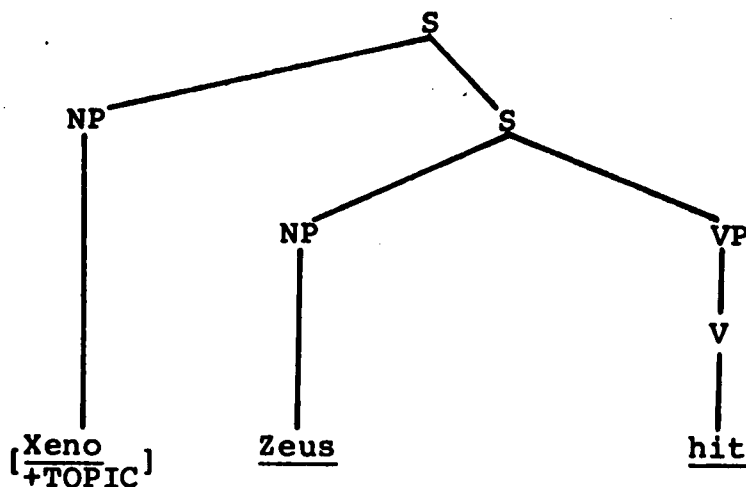
focused constituents. Thus, on these grounds, I propose that TOPICALIZATION Chomsky-adjoin the [+TOPIC] constituent to its S node.

While the type of adjunction required thus seems reasonably clear, another issue remains in the formulation of TOPICALIZATION. In one formulation the rule will operate on the structure (59) by adjoining the [+TOPIC] constituent in the prescribed manner and at the same time deleting its occurrence elsewhere, yielding the intermediate structure (60):

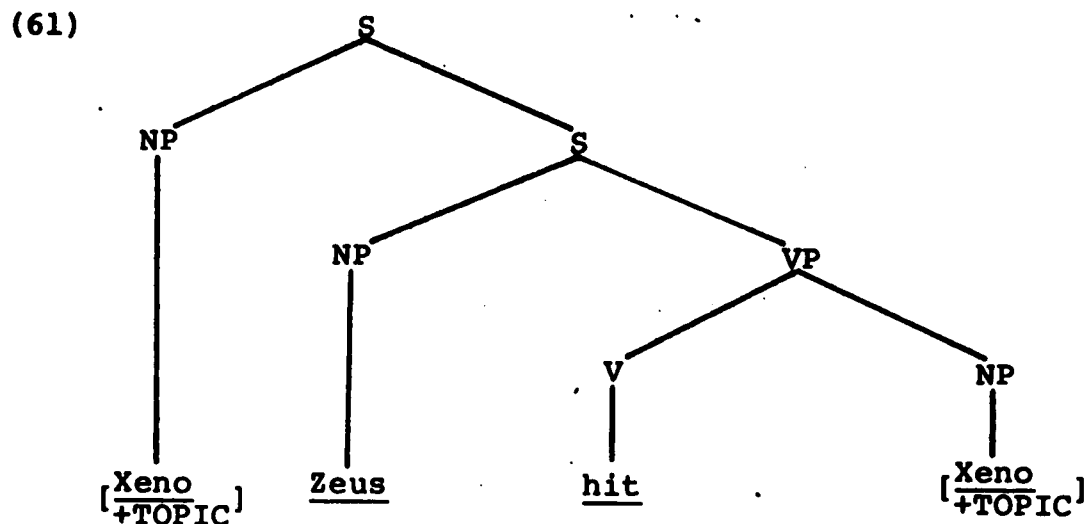
(59)



(60)



In the second formulation, TOPICALIZATION adjoins the [+TOPIC] constituent by copying it in the prescribed manner, thus retaining its occurrence elsewhere, as in (61):



Again dislocation constructions provide a syntactic argument for choosing (61) over (60). Consider the examples in (62):

(62) (a) Salt, I taste it in my food.

(b) My father, he's Armenian, and my mother, she's Greek.

(c) This guitar, I've sung folk-songs on it all my life.

Notice that these sentences require the configuration (61) rather than (60) because the [+TOPIC] constituent occurs in its underlying word order as a surface PRO-form. However, before deciding on (60) on this basis, we should consider its formal implications.

Obviously, if the proposed TOPICALIZATION transformation produces P-markers like (61) which later undergo passivization, interrogation, and the like, the grammar will require an adjunct rule which deletes the original [+TOPIC] constituent in these cases. However, there must be a deep structure

difference between these cases and the dislocation cases, in which the copied NP is not deleted but pronominalized. In fact, there is such a difference, in that dislocations have the underlying specification [+FILL] on the focused constituent, as is explicated in §5, whereas passives, interrogatives, and the like, do not.

On the other hand, I can find no clear evidence that the deletion rule must be separated by intervening rules from the proposed TOPICALIZATION rule, which leads one to suspect that the two-rule proposal which is motivated out of deference to structures like (62) is missing a generalization, and that the one-rule proposal represented by (60) is after all correct. If so, we are required to imply by the formalism that dislocation constructions are not really cases of topicalization, since they cannot be derived by the application of the TOPICALIZATION rule, and this implication certainly seems incorrect. Moreover, a case can be made for the deletion rule itself as part of a more general process. When we consider the effect of the deletion rule, which essentially derives (60) from (61), we notice that it eliminates the second occurrence of an identical [+TOPIC] constituent. It turns out that this kind of deletion is not uniquely carried out by the newly proposed deletion rule. In fact, the rule of EQ-NP-DEL (equivalent noun phrase deletion) deletes the topic of an embedded complement just in case it is coreferential with the topic of the higher S (see G. Lakoff 1968: 66-72). That is, it

operates as a derivational step between surface structures like (64b) and their underlying representations (64a), but not between surface structures like (63b) and their underlying representations (63a):

(63) (a) [[_I _{+TOPIC}] hate it [_{John} _{+TOPIC}] eat peas]

(b) I hate for John to eat peas.

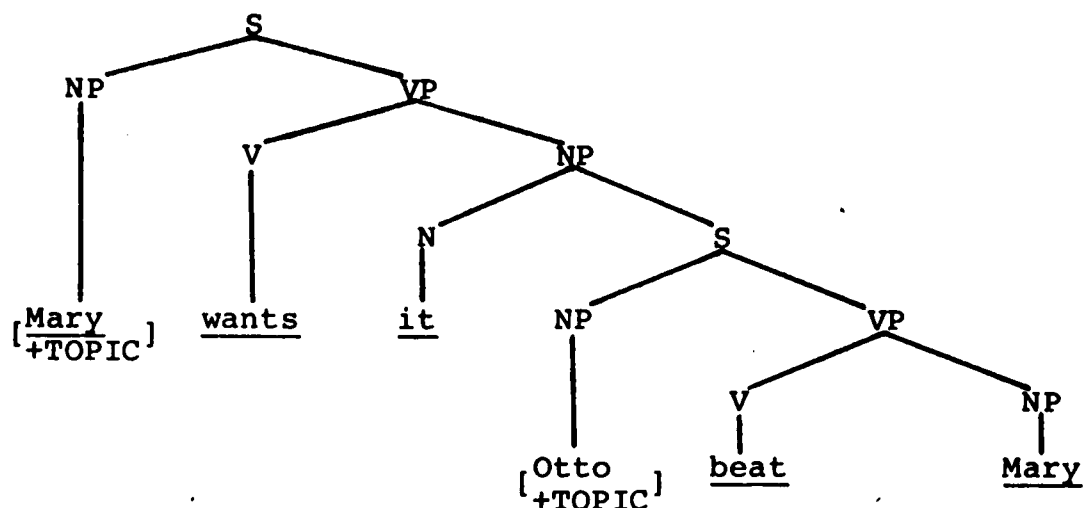
(64) (a) [[_I _{+TOPIC}] hate it [_I _{+TOPIC}] eat peas]

EQ-NP-DEL applies

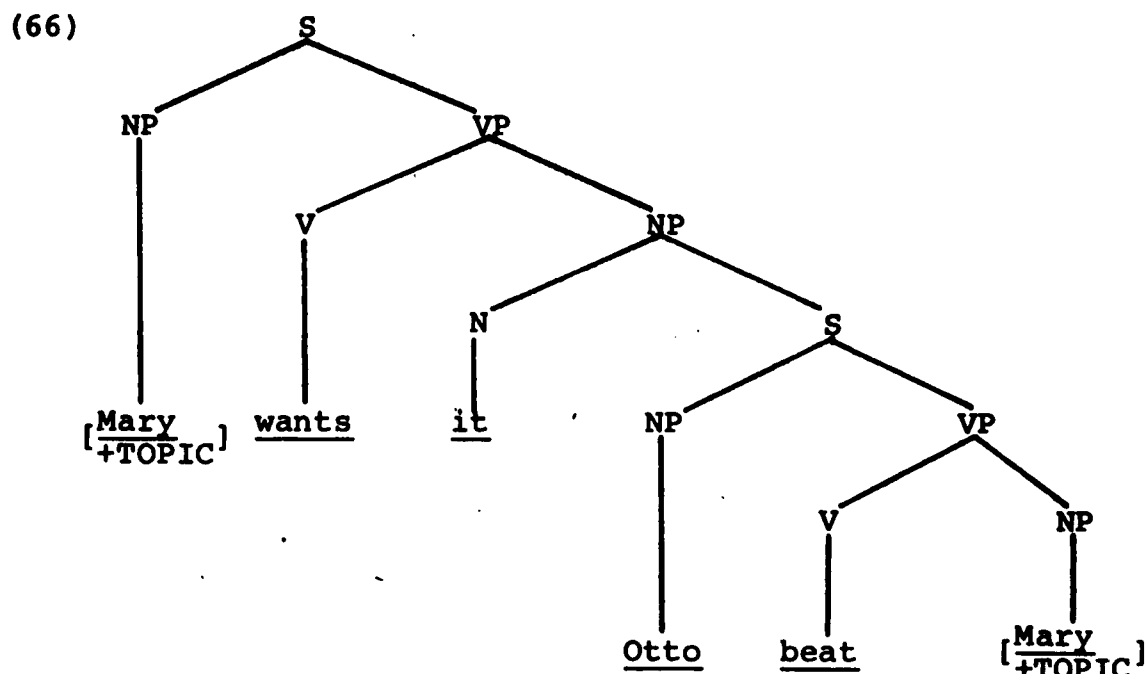
(b) I hate to eat peas.

Of course, EQ-NP-DEL has not usually been construed as deleting an occurrence of a redundant "topic"; in grammars which take no account of focus, it has been stated in terms of subject deletion. However, it correctly operates upon identical topics rather than merely on identical subjects, and has been constrained to do so in all its formulations. Notice, for example, that it does not apply to the deep structure (65), in which the topic of the higher S is Mary and of the embedded S is Otto (Lakoff 1968: 70-71):

(65) Deep structure: Mary wants Otto to beat her.



On the other hand, notice the result if the occurrence of Mary in the embedded S is [+TOPIC], in the same underlying phrase structure:



Grammars which do not account for focus have ensured that EQ-NP-DEL will apply to structures like (66) by ordering it strictly after the PSV rule has operated, at which point the embedded topic is in the subject position, ultimately deriving the surface structure (67):

(67) Mary wants to be beaten by Otto.

Thus, strict rule ordering has constrained the rule to operate on identical topics. Hence it seems correct to say that both EQ-NP-DEL and the proposed deletion rule are instances of a more general process of EQ-TOPIC-DEL, in which the former operates on redundant topics in complement constructions and the latter on redundant topics after topicalization.

Assuming that the argument for EQ-TOPIC-DEL is essentially correct, I proceed with the formalism of the TOPICALIZATION

rule in terms of (61). In the notation of (68), the symbol '#' indicates Chomsky-adjunction:

(68) TOPICALIZATION (precyclic)

SD:	[	X	[^{NP} +TOPIC]	Y]
	S				S
SC:		1	2	3	+
	2#	[	1	2	3
		S			S

Notice that (68) must be precyclic or else it will operate ad infinitum upon its own SC on successive cycles, since it creates a higher S which always includes a [+TOPIC] constituent.

Rule (68), which is an obligatory copying rule, should not be confused with the optional chopping rule of the same name proposed by Ross (1967: 115). In fact, Ross's rule seems to include another instance of the operation of (68), along with passivization, interrogation, and the like. His rule generates structures like (69b) from (69a):

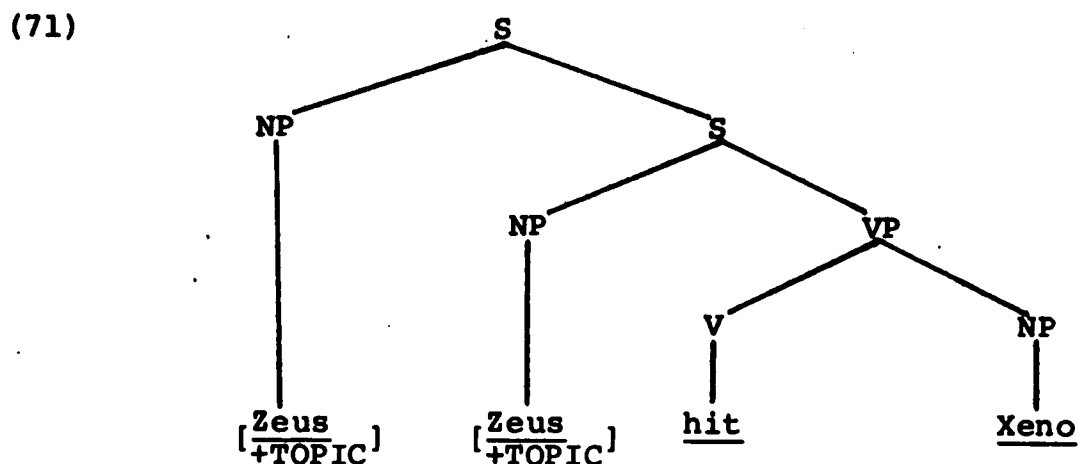
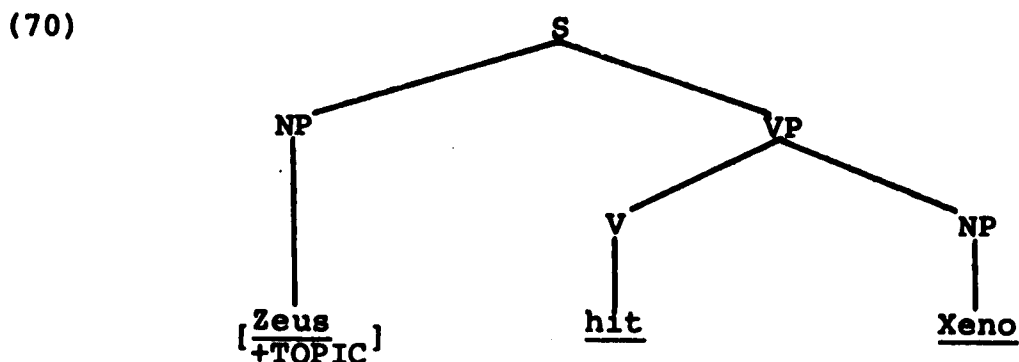
(69) (a) I'm going to ask Bill to make the old geezer take up these points later.

(b) These points I'm going to ask Bill to make the old geezer take up later.

Exactly how (69b) fits into the framework of deep focus is not clear. It seems to share basic characteristics with dislocation constructions, and may therefore fit into the analysis of §5 (cf. Ross 1967: 232-37).

Rule (68) has now been formalized so that even deep

structure NP's which are [+TOPIC] will undergo it. For example, given the deep structure (70), TOPICALIZATION applies to derive (71):



The rule could, of course, be formulated to preclude its application to deep structure subject NP's. However, derived structures like (71) are required in certain hyperfocus devices, as will be seen in §5. Except where hyperfocus devices are derived, the structure (71) will simply be reduced again to (70) by EQ-TOPIC-DEL and tree pruning. The formulation of (68) to apply to deep structure subjects does, however, require a further revision of the characterization of "unmarked structure" in §3.4.1.

The revision is again straightforward: viz, unmarked structures are those derived without the application of any focus device(s) except TOPICALIZATION, where a focus device is defined as a transformation which is sensitive to either [+FOCUS] or [+TOPIC].

4.5. The NP-cluster breaker conspiracy

For all the structures to which TOPICALIZATION applies except some cases of interrogation (which are discussed below) the preposing of a topic NP which is not also the deep structure subject NP is followed by further permutations which have the effect of re-establishing the Subject-Verb-Object configuration. I want to assert as a kind of premise for what follows that there is no a priori reason for expecting these further permutations in a language. Specifically, there is no a priori reason for expecting that the topic must be established as the superficial subject (cf. the Maranao data in §1.3.2.)

Semantically, the constructions we have been considering seem to be perfectly lucid in the ungrammatical intermediate form after TOPICALIZATION and EQ-TOPIC-DEL have applied and before the permutations specific to each process have been carried out by PSV, QUES, and so on, as is revealed by the forms in (72)-(76), each of which is an intermediate derivation after TOPICALIZATION has applied to the (a) members of (53)-(57):

(72) *Xeno Zeus hit.

(73) *John the farmer bought a Clydesdale.

(74) *Who Xeno saw yesterday?

(75) *In the box many toys are.

(76) *His explanation I was satisfied with.²

Thus, if semantics alone were the criterion of grammaticality, there would be no necessity for the operation of further rules on (72)-(76).

In speculating on what might underlie the further permutations in particular and the predilection for realizing the topic as the superficial subject in general, I take as text the insight--also speculative--of Bach (1967: 466), who notes that

of seems to be predictable in a large number of instances as a kind of automatic "N-cluster" breaker where a series of N's are dominated by a single NP: some of, all of, the city of Berlin, of or Gen with the subject or object of nominalized sentences, and so on. The form of then acts much like no in Japanese or the e of the so-called izafet construction in Persian.

Like the intervening of in N-clusters, intervening VP in NP-clusters has the effect of breaking up contiguous NP's.

Two analyses might be construed as support, in some sense of that word, for a claim that NP-cluster breaking is operative here. The first involves interrogatives with the SD which underlies (74), in which the topic does not simply become the superficial subject. With apologies for the rampant anthropomorphism to which I am forced by the lack of an available technical vocabulary, I note that in structures like (74) there is motivation to retain the non-topic subject's relation to the verb. However, NP-cluster breaking seems to pose a counter-tendency to subject-verb retention,

with the end result that the VP is torn asunder to permit AUX as a cluster breaker and MV as the VP-delegate in the subject-verb order.

The second analysis involves what Bendix (1966: 39-45, 123-28) calls "the general 'A has B'". I note in passing that the TOPIC TRANSFORMATION which this analysis leads him to propose seems to be another instance of TOPICALIZATION. Schematically, Bendix observes transformational alternants of the following (somewhat simplified) type:

$$(77) \text{ A } \underline{\text{has}} \text{ B } \rightarrow \text{ B } \underline{\text{is}} \left\{ \begin{array}{c} \text{on} \\ \text{for} \end{array} \right\} \text{ A}$$

As examples, he cites the following, wherein the (a) members represent the left side of the arrow in (77) and the (b) members the right side:

(78) (a) This list has the name you want.

(b) The name you want is on this list.

(79) (a) John will have the hardest task.

(b) The hardest task will be for John.

(80) (a) The third shelf has five books on it.

(b) Five books are on the third shelf.

If Bendix is correct in positing a systematic relationship between these pairs, then it would seem that cluster breaking overrides even the semantic relations which accrue in the deep structure, since the have/be alternation is the result of the reorganization of the sentence by establishing the underlying topic as the superficial subject. To see this, note that the semantic relationship is retained intact in (81)-(83), in which the topic is topicalized but the

deep structure subject is retained. Arbitrarily assuming that the (a) members of (78)-(80) are deep structures, (81)-(83) represent intermediate derivations after the application of TOPICALIZATION and EQ-TOPIC-DEL:

(81)?The name you want this list has.

(82)?The hardest task John will have.

(83)?Five of the books the third shelf has on it.

However, the semantic sense of "accrument to the subject" (or whatever) expressed by have in the deep structure and in the intermediate structure shown above no longer holds when the topic becomes the subject, which I am suggesting is a reflex of a general NP-cluster breaker conspiracy in English, where I use "conspiracy" in the technical sense of Ross (1969b; Kisseberth 1969 uses the term "functional unity" to express the same notion). That is to say, various rules in the grammar 'conspire' to produce a similar effect in structures--in this case, they have the effect of breaking up contiguous topic and subject NP's by establishing the topic as the subject and permuting the underlying subject to the predicate.

This kind of speculation, if it has any value at all, is perhaps suggestive of more profound regularities than are presently within our grasp. The similarity of the processes that remain after TOPICALIZATION has been factored out provide a clue to the prospect that cluster breaking may underlie several syntactic processes in English. However, it awaits the intensive research which could lead to

systematisation before it can itself be factored out as a general process (if that is indeed possible) and to speculate further at this time is merely idle.

FOOTNOTES

1. Gunter Schaarschmidt (personal communication) points out that the obligatory application of FLIP in these cases can probably be eliminated under a different formulation of lexical insertion. That is, if one assumes a post-syntactic lexicon and conflated lexical statements instead of a presyntactic lexicon, one can posit an abstract lexical item SEEM with the following lexical entry:

$$(I) \quad SEEM = \left\{ \begin{array}{l} \underline{\text{figure}} / [+ANIM] \quad _ \quad [+N] \\ \left\{ \begin{array}{l} \underline{\text{seem}} \\ \underline{\text{appear}} \end{array} \right\} / [+N] \quad _ \quad [+ANIM] \end{array} \right\}$$

In those cases in which FLIP is not applied in a derivation, the verb is then 'spelled' as figure, as in (II):

- (II) (a) I figure that John is a fool.
 (b) I figure John to be a fool.

On the other hand, when FLIP is applied, the verb is spelled as seem or appear.

2. Some of the examples in (72)-(76) are acceptable in some English dialects, notably in Yiddish English. It has been proposed (I believe by James D. McCawley) that such forms should be marked not with '*' but with '★', as follows:

(72') ★ Xeno Zeus hit.

(76') ★ His explanation I was satisfied with.

My proposal of the general TOPICALIZATION rule finds independent motivation in these data, since it reveals Yiddish English as a variant of standard English which can be derived from the grammar of standard English merely by blocking certain rules like PSV and FLIP, thus eliminating the necessity of an additional transformation of YIDDISH MOVEMENT to generate structures like (72') and (76').

§5: HYPERFOCUS

In §5 I deal with three processes of central interest in any discussion of focus in English: namely, dislocation, clefting and contrastive stress. It happens that these processes represent terra incognita, or virtually so, in grammatical studies. Clefting and contrastive stress, in particular, provide some of the most interesting data for the grammarian, but also some of the most intractable, apparently asystematic and baffling data he can encounter. In §5.3, on clefting, I have had the considerable advantage of having Akmajian's recent analysis (1970) before me. Even so, I cannot hope--or pretend--to offer a definitive stance at this or at any other point throughout §5. Generally, I content myself with presenting an approach to these data which is consistent with the theory of deep focus.

5.1. Three hyperfocus devices

Intuitively, the processes of dislocation, clefting and contrastive stress place greater emphasis on constituents than is usual in the focus devices we have considered so far, let alone in unmarked structures. This intuition is affirmed by the fact that some grammarians approach focus as if one or more of these particular hyperfocus devices comprised the only means by which focus is realized in English. Simple examples of dislocation, clefting and contrastive stress are provided by (1a), (1b) and (1c), respectively:

(1) (a) Zeus, he hit Xeno.

(b) It was Zeus who hit Xeno.

(c) ZEUS hit Xeno.

I do not claim that these three devices exhaust the hyperfocus possibilities in English. Indeed, other such possibilities figure marginally in the thesis, like Ross's "topicalization" in §4.4, pseudo-cleft sentences in §5.3 below, and a verbal hyperfocus device in §7.2. Presumably there are others, perhaps many others.

Beyond its intuitive basis, the term "hyperfocus" has a straightforward interpretation within the formal framework of deep focus outlined so far. In fact, the hyperfocus devices represented in (1) can operate on structures which have already undergone the focus devices in §3 and §4. For example, note that in (2) dislocation, clefting and contrastive stress have operated on structures which are passivized:

(2) (a) Xeno, he was hit by Zeus.

(b) It was Xeno who was hit by Zeus.

(c) XENO was hit by Zeus.

Formally, then, "hyperfocus" designates that these focus devices can operate on constituents which undergo other focus devices. In the analyses which follow, I consider the hyperfocus devices to be triggered by a set of features which always includes [+FOCUS] or [+TOPIC] as one member. The additional, or hyperfocus, feature is arbitrarily written as [+FILL].

In addition to the intuitive and the purely formal characteristics which thus relate these three devices, there is also a semantic link insofar as the three members of (1) are synonymous, and the three members of (2) are synonymous. Furthermore, Susan D. Fischer, in an unpublished paper (1968: 3-7), tentatively offers some syntactic evidence for relating sentences with clefted and contrastively stressed constituents. In what follows, I briefly recapitulate her arguments,¹ and at each point expand them to include dislocations as well.

She notes that sentences with a contrastively stressed element have one negation, as follows (her example):

(3) JOHN didn't buy a new bike for his daughter.

Similarly, dislocations have one negation:

(4) John, he didn't buy a new bike for his daughter.

However, both (3) and (4) have two possible readings. In one sense, the fact that John's daughter has a new bike is presupposed, but the purchaser of the bike is not John. In the second reading, John is identified as the one person of a group whose daughter does not have a new bike. These readings are disambiguated in cleft sentences, which have two negations corresponding to each of these readings:

(5) (a) It wasn't John who bought a new bike for his daughter.

(b) It was John who didn't buy a new bike for his daughter.

Thus negation seems to apply in a parallel manner to these three processes: either the dislocated, clefted or stressed element is negated, or the entire sentence is negated.

Questions, Fischer points out, can query only the clefted or stressed element. This fact is also true of the dislocated element:

(6) (a) John, did he buy a new bike for his daughter?

(b) Did JOHN buy a new bike for his daughter?

(c) Was it John who bought a new bike for his daughter?

In all these cases, the presupposition is that John's daughter has a new bike, but the question remains as to whether or not it was John who provided it for her.

Movable adverbs like even and only attach to hyperfocus elements just as negative and question do. Fischer points out that in unmarked structures such adverbs change meaning depending on where they occur in the surface structure, as is shown in (7):

(7) (a) Even John bought a new bike for his daughter.

(b) John even bought a new bike for his daughter.

(c) John bought even a new bike for his daughter.

(d) John bought a new bike even for his daughter.

(e) John bought a new bike for even his daughter.

(f) John bought a new bike for his daughter even.

However, she notes that meaning is independent of adverb placement under conditions of hyperfocus. For example, sentence (8) is synonymous with (7d-f), which are themselves synonymous, even though the movable adverb in (8) is removed from the focused constituent in the superficial order:

(8) John even bought a new bike for his DAUGHTER.

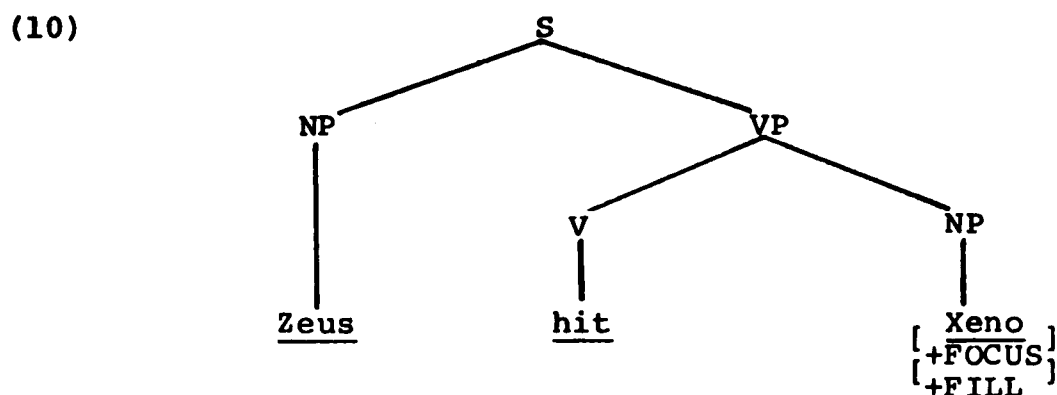
She concludes that "where the adverb is not adjacent to the

contrastively stressed word, it is, nevertheless, still associated with that word in some fashion." This seems to be the case as well in dislocations, where (9) is also synonymous with (7d-f) and (8):

(9) His daughter, John even bought a new bike for her. In sum, contrastive stress, clefting and dislocation apparently share the syntactic property of limiting the scope of negation, questions and movable adverbs.

On the basis of this evidence, Fischer proposes that "contrastive stress and cleft sentences are two surface structure reflections of the same deep structure fact." I incorporate this proposal into the analyses which follow, extending it to include dislocation constructions.

Following Fischer's lead (1968: 12-13), I propose that dislocation, clefting and contrastive stress constructions have as their deep structure what is essentially the underlying declarative, with the added provision that hyperfocus be specified at some node, as in (10):



As Fischer notes, this analysis has "the advantage that it would give clefts and contrastively stressed sentences the same deep structure." I disagree with her, however, when

she adds that it "has the serious defect that it adds a lot of structure", for two reasons. In the first place, as we shall see, much of what she considers ad hoc structure-building is subsumed by the independently motivated TOPICALIZATION transformation in the present analysis. Secondly, I consider structure-building of a restricted kind to have a cogent theoretical basis; this issue is taken up in some detail in §7.

5.2. Dislocation

Ross (1967: 236-37) has argued there must be two separate dislocation rules in the grammar (also see Vanek 1969b: 549). One of these, LEFT DISLOCATION, is exemplified by (1a), (2a) and (4) above. The other, RIGHT DISLOCATION, is exemplified by the sentences in (11), each of which has a counterpart in the left dislocations already cited:

(11) (a) He hit Xeno, Zeus.

(b) He was hit by Zeus, Xeno.

(c) He didn't buy a new bike for his daughter, John.

Superficially, the existence of counterparts like these would lead one to expect that there is only one dislocation rule, and that the counterpart to its output is transformationally derived by extraposition of the dislocated element. However, Ross, with characteristic acumen, has noticed that the processes are distinguished in two ways. In the first place, LEFT DISLOCATION operates on pronouns whereas RIGHT DISLOCATION does not,² as is shown by the following pairs (from Ross):

(12) (a) Him, they let him go yesterday.

(b)*They let him go yesterday, him.

(13) (a) Me, I like beer.

(b)?*I like beer, me.

(14) (a) Us, we'll go together.

(b)*We'll go together, us.

(15) (a) Them, they can't stand each other.

(b)*They can't stand each other, them.

Secondly, the rule of RIGHT DISLOCATION, but not LEFT DISLOCATION, must be upward bounded (Ross 1967: 162ff), that is, the dislocated element cannot be moved above the boundaries of the first sentence above the S in which the dislocated element is a constituent. To see this, note that (16), on which LEFT DISLOCATION has operated, is acceptable, but (17a) which violates the upward bound constraint on RIGHT DISLOCATION, is ungrammatical, although (17b), which does not, is acceptable:

(16) The cops, that they spoke to the janitor about that robbery yesterday is terrible.

(17) (a)*That they spoke to the janitor about that robbery yesterday is terrible, the cops.

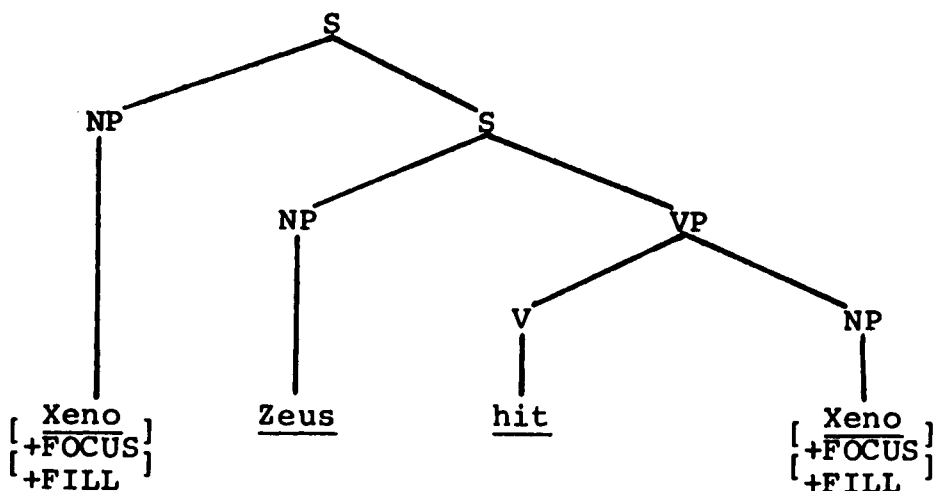
(b) That they spoke to the janitor about that robbery yesterday, the cops, is terrible.

In the following discussion, I consider only LEFT DISLOCATION, under the assumption that the analysis of RIGHT DISLOCATION, with its additional constraints, can be inferred from it.

Obviously, what is required to derive a dislocation from

the deep structure (10) is that the constituent which is [+FOCUS, +FILL] be copied as the leftmost node in some manner and that its deep structure occurrence be specified [+PRO]. While this description does not seem an unreasonable analysis for a SC, it can be significantly simplified by exploiting the TOPICALIZATION rule already in the grammar. Thus I propose that TOPICALIZATION be extended so that it operates not only on all [+TOPIC] constituents, both with and without [+FILL], but also on those constituents which are [+FOCUS, +FILL] as well. While this produces an awkward appearing P-marker as its immediate output from (10), in which the [+FOCUS, +FILL] constituent is Chomsky-adjoined to the [+TOPIC] constituent which is in turn Chomsky-adjoined to the original S, the rule of EQ-TOPIC-DEL applies to delete an occurrence of the redundant [+TOPIC] constituent in the manner outlined in §4, and pruning applies, leaving the P-marker (18):

(18) From deep structure (10), after TOPICALIZATION, EQ-TOPIC-DEL, and pruning:



EQ-TOPIC-DEL clearly does not apply further, since there is only one [+TOPIC] constituent. We will see below, however, that EQ-TOPIC-DEL must be blocked from applying to [+TOPIC] constituents when they are also [+FILL].

P-marker (18), then, is the SD on which LEFT DISLOCATION must operate. Note that node-copying is no longer required in the SD. Moreover, the manner of adjunction which results from TOPICALIZATION is exactly right for LEFT DISLOCATION. That is, the dislocated element must be Chomsky-adjoined as an S to the highest S in the SD (cf. Ross 1967: 232; Gruber 1967: 423; Langacker 1969: 589; Vanek 1969b: 549). The basis for this analysis seems to be twofold. First, as Langacker notes, "the 'comma intonation' that sets off the dislocated noun phrase from the rest of the sentence indicates a major constituent break at that point." Secondly, the underlying S on which DISLOCATION operates is retained intact after the structural change. Any other manner of adjunction would destroy the underlying constituent structure. Langacker adds an argument from French dislocations such as (19):

(19) Vous, frappez-le!

He notes that the dislocated element must be outside the main clause or the object pronoun le would undergo PRONOUN PLACEMENT, deriving the ungrammatical (20):

(20) *Vous, le frappez!

Thus the rule of LEFT DISLOCATION need only specify the feature [+PRO] in the matrix of the underlying [+FOCUS, +FILL]

constituent in (18). PRONOMINALIZATION will then apply to that node to derive the surface structure: Xeno, Zeus hit him.

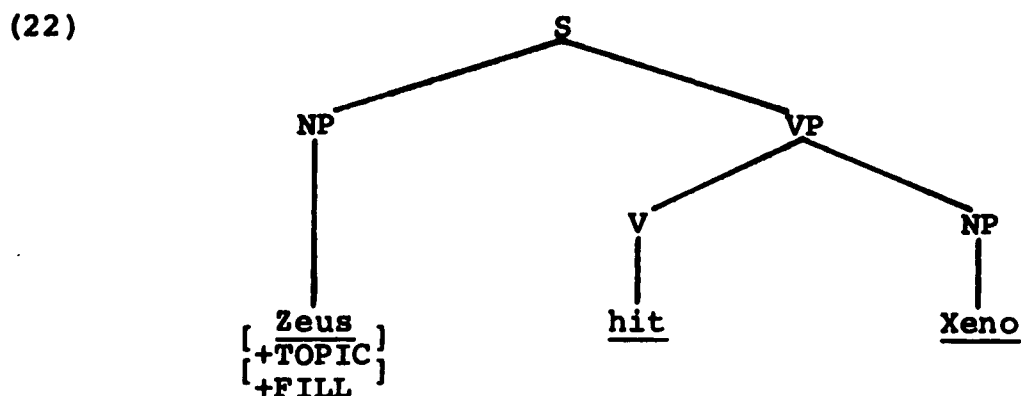
The rule is formulable as (21):

(21) LEFT DISLOCATION

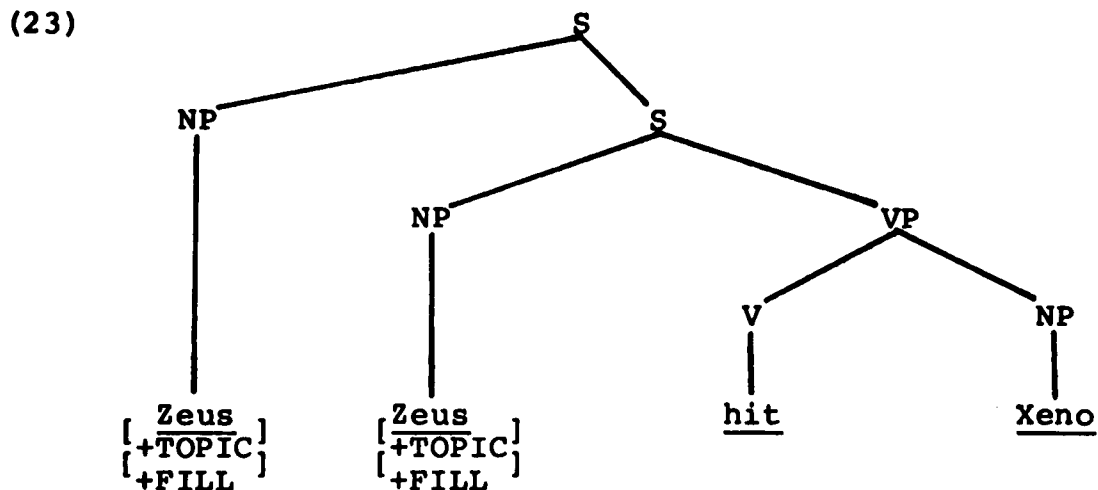
SD:	[	NP	#	[	X	[	NP	Z	]	S
		+FILL		S		+FILL				S
SC:	1		2		3		4	→		
		1		2	[	3	]	4		
					+PRO					

Rule (21), as written, operates on [+TOPIC, +FILL] as well as on [+FOCUS, +FILL].

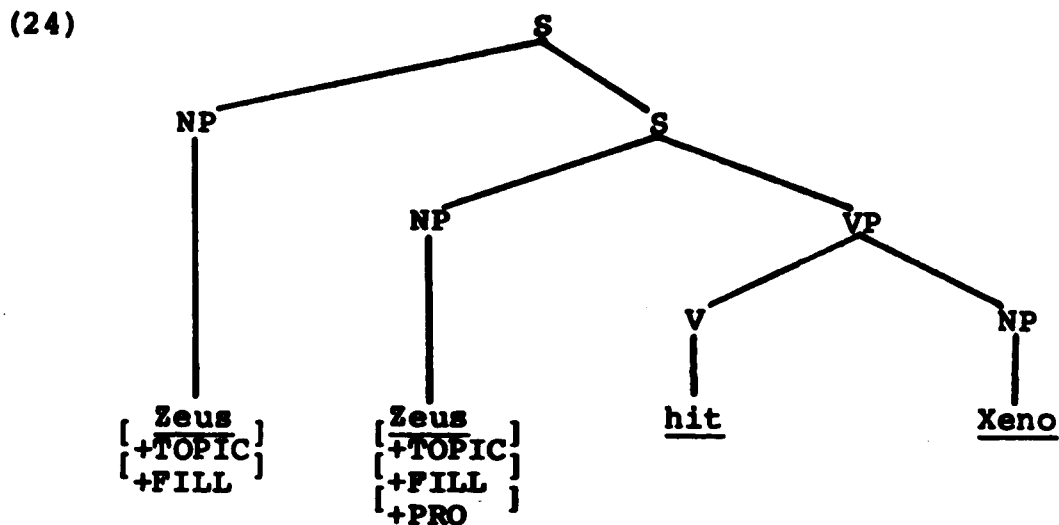
To illustrate the operation of the rule, consider the deep structure (22):



TOPICALIZATION applies to derive (23):

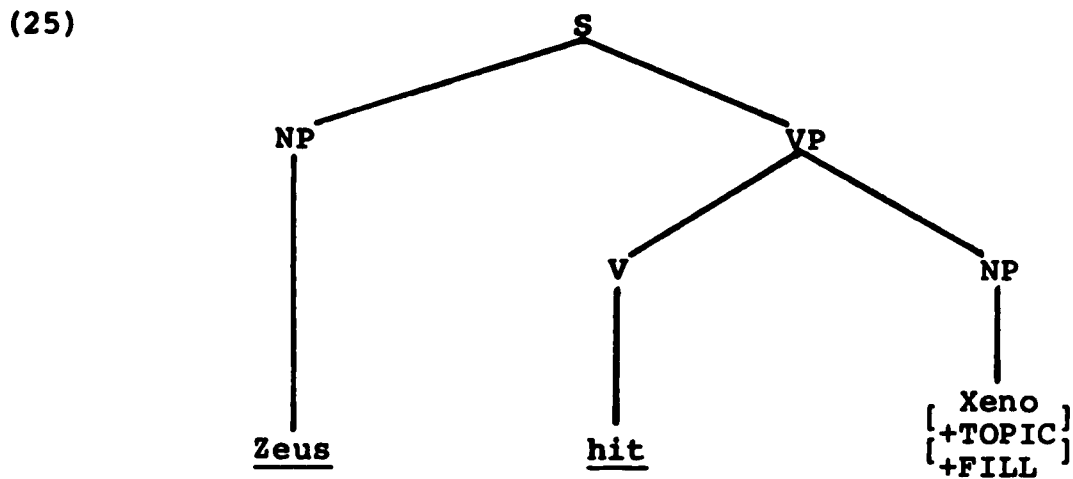


EQ-TOPIC-DEL cannot apply because of the specification [+FILL] on the topic nodes. LEFT DISLOCATION now applies, as follows:

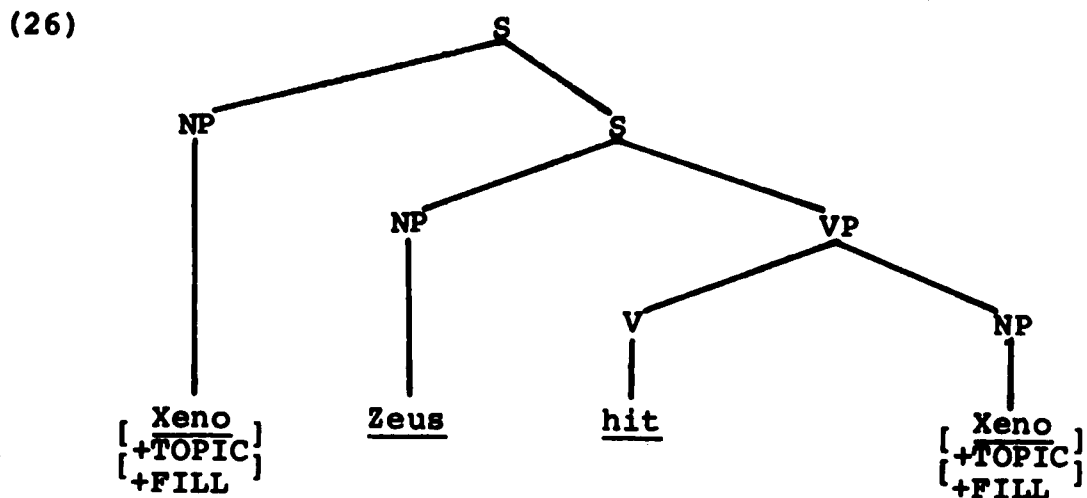


After PRONOMINALIZATION, we have the surface structure (1a):
Zeus, he hit Xeno.

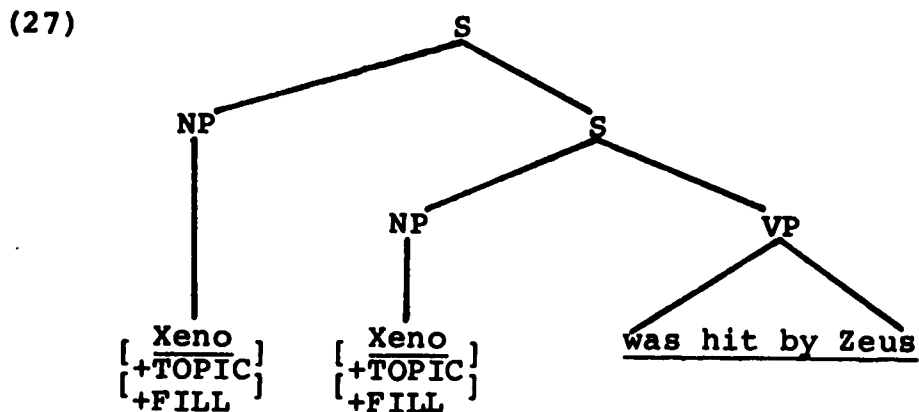
LEFT DISLOCATION must also operate on passivized structures to generate a sentence like (4a) which has the deep structure (25):



After TOPICALIZATION, this becomes (26):



EQ-TOPIC-DEL again does not apply. However, PSV does, exactly as is shown in §3, and (26) becomes (27):



In its essential features, (27) is equivalent to (23). The application of LEFT DISLOCATION and PRONOMINALIZATION yields the surface structure: Xeno, he was hit by Zeus.

RIGHT DISLOCATION, of course, requires that the [+FILL] node be adjoined to the right of the highest S, in addition to the restriction in its SD that the dislocated node be [+PRO] and the condition that it be upward bounded.

5.3. Clefting

Akmajian (1970) has recently shown that many of the 'peculiarities' of cleft sentences are automatically regularized if cleft sentences are derived from reduced pseudo-clefts (UESP 1969: 839-40 reaches a similar conclusion, apparently independently). That is, he proposes that the immediate source of examples (1b), (2b) and (5) above be (28a), (28b) and (28c), respectively:

(28) (a) Who hit Xeno was Zeus.

(b) Who was hit by Zeus was Xeno.

(c) Who didn't buy a new bike for his daughter was John.

He points out that the cleft and pseudo-cleft pairs "are synonymous, share the same presuppositions, answer the same questions, and in general...can be used interchangeably."

His proposal assumes that the reduced pseudo-clefts of (28) are equivalent to full pseudo-clefts, which preface the relative element with "the one", as in (29):

(29) The one who hit Xeno was Zeus. (= (28a))

Granted this assumption, the proposal has considerable force.

As motivation for the proposal, he first considers verb agreement in cleft sentences (1970: 150-55; all examples are Akmajian's). He points out that the verb in the clause always agrees in number with the focused element, but is always third person without regard for the person of the focused element,³ as shown in (30):

- (30) (a) It's $\left\{ \begin{array}{l} \text{me} \\ \text{you} \\ \text{him} \end{array} \right\}$ who is responsible.
- (b) It's $\left\{ \begin{array}{l} \text{us} \\ \text{you} \\ \text{them} \end{array} \right\}$ who are responsible.

The problems of accounting for this agreement pattern in previous analyses are considerable. However, notice that the pseudo-cleft provides exactly the right SD for person and number agreement in clefts, because the pseudo-clefts always have a third person NP as the head noun of the relative clause, as in (31):

- (31) (a) The one who is responsible is $\left\{ \begin{array}{l} \text{me} \\ \text{you} \\ \text{him} \end{array} \right\}$.
- (b) The ones who are responsible are $\left\{ \begin{array}{l} \text{us} \\ \text{you} \\ \text{them} \end{array} \right\}$.

Thus, if verb agreement applies at this point to the underlying pseudo-cleft, it will account for the agreement pattern of the derived cleft sentence.

Similarly, he points out (1970: 155-58) that reflexive pronouns in the clause occur as third persons regardless of the person of the focused pronouns as in (32):

- (32) (a) It's not me who shaves himself with a straight razor.
- (b) It's you and me who nearly drowned themselves out in the lake.

These, too, are correctly derived if reflexivization applies to underlying pseudo-clefts like (33):

- (33) (a) The one who shaves himself with a straight razor is not me.

(b) The ones who nearly drowned themselves out in
the lake are you and me.

Even some apparent counter-examples turn out to be evidence in favor of the underlying pseudo-clefts. Akmajian notices that in some cases the reflexive does in fact agree in person with the focused pronoun, as in (34):

(34) It's me who has to protect $\left\{ \begin{array}{l} \text{myself} \\ \text{himself} \end{array} \right\}$.

However, in these cases, the verb form belies the implication of the reflexive that the clause has an underlying first person subject. That is, the verb form has in (34) agrees with a third person subject, and agreement with a first person subject is unacceptable:

(35)*It's me who have to protect myself.

Thus the third person verb agreement and the first person reflexive within the same S constitute a "syntactic paradox", which Akmajian resolves by positing a low-level correction rule--perhaps "hypercorrection rule" is more appropriate--to account for.

As a third argument he considers "constructions which require identity between the subject and some possessive pronoun", which again turn up in cleft sentences as third persons (1970: 159-60):

(36) (a) Was it you that held his breath for five minutes?

(b) It was me that made up his mind before anyone else.

He points out that the alternative for (36a) is semantically anomalous. The anomaly is clear when one considers that the alternative, (36a'), implies that (36a") is a possible

sentence:

- (36) (a') ?Was it you that held your breath for five minutes?
 (a'') *Or was it John that held your breath for five minutes?

The related pseudo-cleft sentences provide the right agreement patterns for the cleft sentences (36a-b):

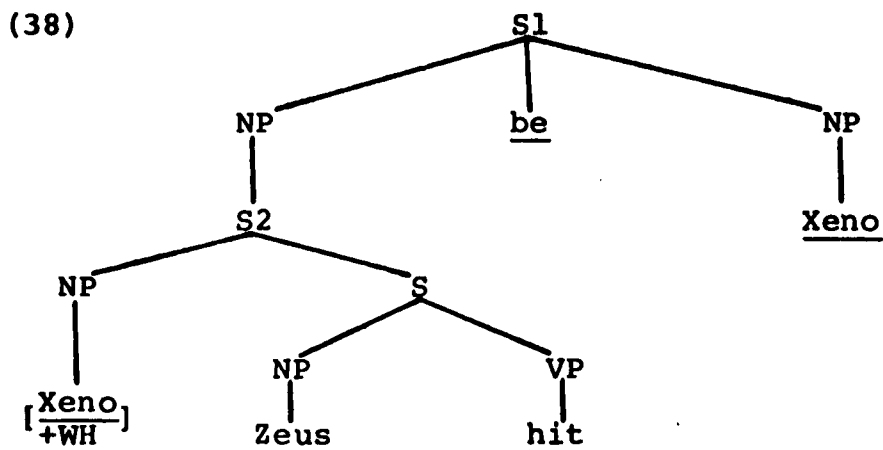
- (37) (a) Was the one who held his breath for five minutes you?
 (b) The one who made up his mind before anyone else was me.

Again, note the anomaly of (37b'):

- (37) (b) *The one who made up my mind before anyone else was me.

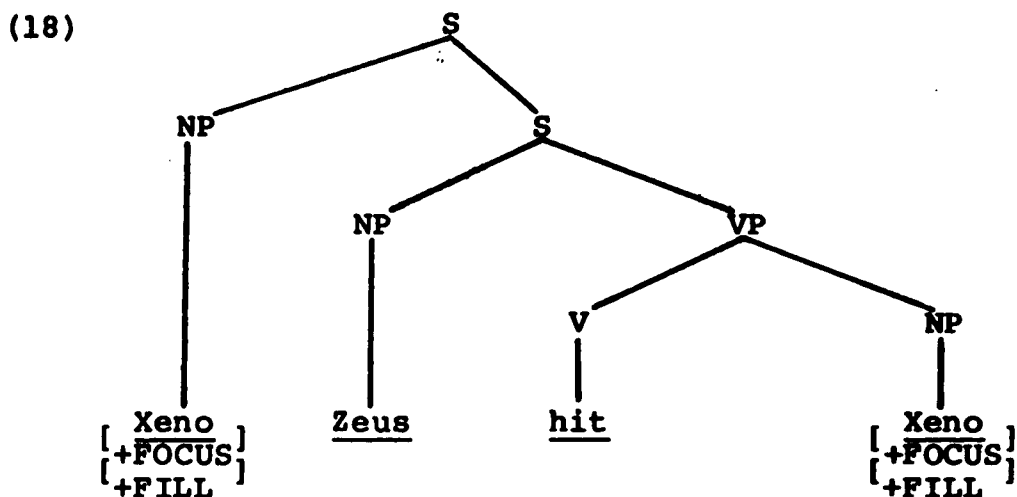
All in all, the arguments summarized above militate convincingly in favor of Akmajian's proposal for generating cleft sentences.

A grammar, then, must at some point provide as input to the CLEFT transformation a reduced pseudo-cleft structure (see 1970: 160-64 for arguments for the "reduced" structure as source), such as (38) (after 1970: 165):



P-marker (38) differs from Akmajian's comparable P-marker somewhat, but the differences are motivated by two recent proposals. First, the specification that NP rewrites as S2 in (38) is argued by Kiparsky and Kiparsky (1968: 6-7, 13), who account for the expletive it which occurs as NP when S2 is extraposed as a "semantically empty prop" which automatically fills an empty subject node, an analysis which has already been implied in §4.3. Secondly, the underlying representation of S2 in (38) follows Langacker's proposal for the analysis of relativization (1969: 593-94), except that the coreferential NP in the higher S is to the right instead of to the left. Note that Akmajian does not consider that the pseudo-cleft is the deep structure: "For our purposes it is not crucial whether [a structure like (38)] represents the deep structure of the pseudo-cleft sentence, or whether it represents some derived stage. It is only crucial that, at some level, we have a structure such as [(38)] available" (1970: 150; he repeats this point at p. 164).⁴

What is required to derive (38) from the deep structure (10)? Again, some of the derived structure is the result of the TOPICALIZATION rule, which, after pruning, derives the intermediate structure (18), repeated here for convenience:



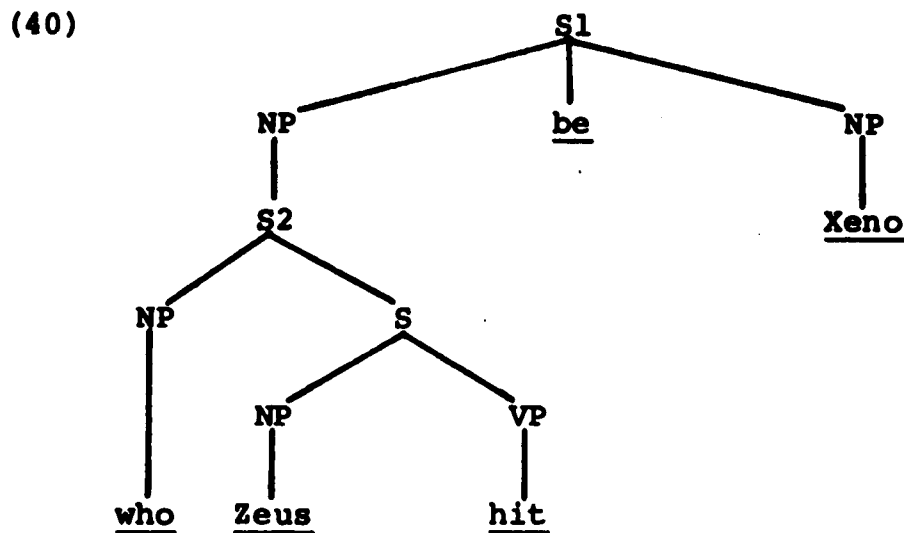
Compared to (18), (38) looks very much like a RIGHT DISLOCATION, with the addition of the copula. However, notice that the PSEUDO-CLEFT rule which applies to (18) must 'dislocate' the lower occurrence of the [+FILL] constituent in order to retain the SD of RELATIVIZATION intact. The dislocation, in effect, creates the SD for RELATIVIZATION by placing the coreferential NP in a position where it commands the leftmost node of (18).

To derive (38) from (18), then, the PSEUDO-CLEFT rule must Chomsky-adjoin the lower occurrence of the [+FILL] constituent to the highest S and insert be (that is, the lexical matrix which be represents), and specify the lower occurrence of the [+FILL] constituent as [+WH]. The rule can be stated as follows:

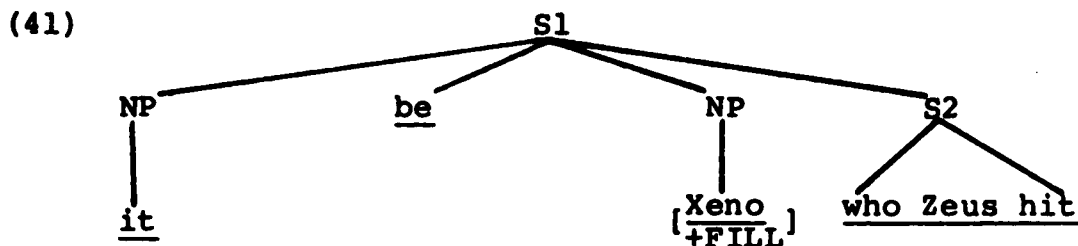
(39) PSEUDO-CLEFT

SD:	[	[	NP	#	[	X	[	NP	Z]]
	S	[	+FILL		S		[	+FILL	S	]	S
SC:	1				2		3		4		+
	[	1			[	2	∅	4	]	]	# be + 3
	[	+WH			S			S	S		

(I disregard the category node dominance and derived structure assignment for the time being; cf. §7.2.) Having derived (38), VERBAL AGREEMENT and RELATIVIZATION can apply to S2 at this point to derive the pseudo-cleft: Who Zeus hit was Xeno (1970: 165-66). The derived structure after these rules operate is shown in (40):

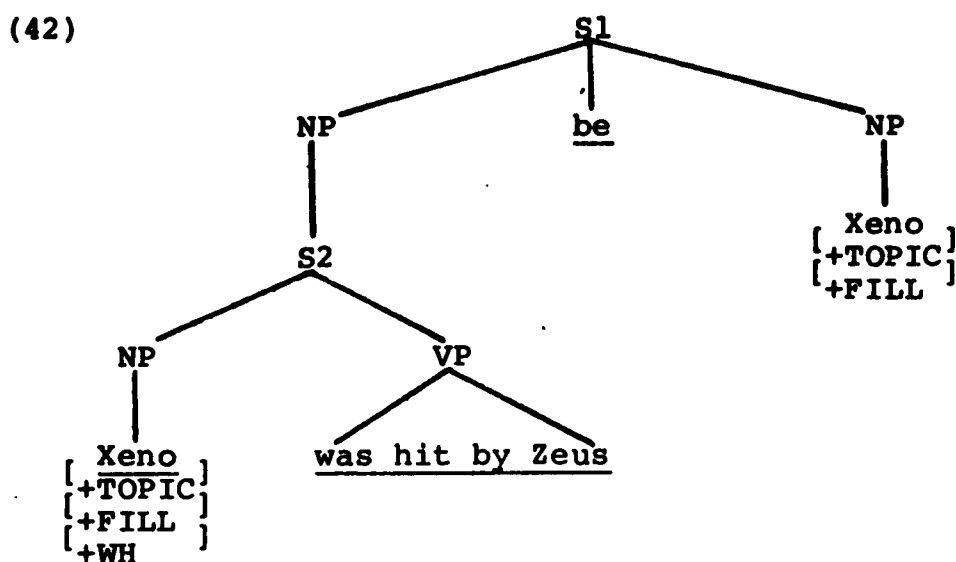


Akmajian's rule of CLEFT EXTRAPOSITION (1970: 166) can now apply to (40), as follows, leaving the place-holder it behind in the otherwise empty NP slot:



Finally, VERBAL AGREEMENT applies to S1, deriving the cleft sentence: It is Xeno who Zeus hit.

The SD of the PSEUDO-CLEFT rule will be met by the P-marker (23) as well as by (18). It also works for passivized structures with the underlying representation of (25), which undergo TOPICALIZATION and PSV as shown in (26) and (27) respectively. Then P-marker (27) meets the SD of PSEUDO-CLEFT to derive (42):



Akmajian's rules take over from here, ultimately deriving the passivized cleft (2b): It was Xeno who was hit by Zeus.

5.4. Contrastive stress

The baffling array of data that a linguist encounters in working on contrastive stress raises the question of whether it is a syntactic process or, as is usually assumed, a phonological process. In some of the data, contrastive stress is predictable from the syntactic string, as in affirmative constructions like (43):

(43) (a) Xeno DID come yesterday.

(b) George DID do it.

Note that these cannot occur without contrastive stress:

(44) (a) *Xeno did come yesterday.

(b) *George did do it.

At the opposite end of the continuum, contrastive stress seems to be predictable from phonological shapes, as in

(45):

(45) (a) The Red Wings are much better OFfensively than
DEfensively.

(b) Alison has a FRACTure, not a RUPTure.

(c) The theory allows both CONjunctive and
DISjunctive ordering.

Notice that in these cases contrastive stress must demarcate the non-rhyming syllable of pairs of rhyming formatives, and--in my dialect at least--they never occur undemarcated (contrary to one datum in Green 1970). The sentences in (45) do not require contrastive stress when the rhyming formatives are replaced as in (46):

(46) (a) The Red Wings are much better at scoring than
at playing defense.

(b) Alison has a broken arm, not a hernia.

(c) The theory allows both conjunctive ordering and
structure-building.

The varied range of data represented by (43) and (45) has so far defied any coherent characterization within linguistics, although two proposals seem to account partially for what

is going on in contrastive stress.

The process exemplified by (45) can possibly be accounted for by extending what Sanders (1968: 158) calls "the extreme simplicity of the contrastive stressing process as it is intuitively known and as it would be stated in ordinary language: stress the non-identical parts of a pair of partly identical sentences." This informal rule, first proposed by Gleitman (1965: 270-73), requires only the addition of the term "formatives" as well as "sentences" to accommodate (45). To illustrate how it also applies to sentences, I cite Sanders' example:

(47) In the MORNING my brother JOHN went to the STORE to buy a BOOK for me; (and) in the AFTERNOON my brother HENRY went to the MARKET to buy some BREAD for me.

I submit that sentence (47) would receive the intonation represented for it only if its details were being spelled out for a near-idiot, and that it is therefore a clear example of a Goldie Hawn sentence.

A further extension of this heuristic, which I will call the 'Gleitman-Sanders rule', may also allow it to accommodate examples which indicate that coreferential NP's in some cases must both occur under normal stress whereas a co-occurrent non-coreferential NP in these cases receives contrastive stress (Akmajian and Jackendoff 1970: 124-25). For example, while (48a) is ambiguous, (48b) and (48c) are not, as indicated:

(48) (a) That George would be Tom's thesis advisor never occurred to him.

(b) That GEORGE would be Tom's thesis advisor never occurred to him. (him is Tom)

(c) That George would be TOM's thesis advisor never occurred to him. (him is George)

(Cf. Cantrall 1969: passim, for similar examples.) Here, non-coreferentiality of one member of a triplet seems to be a special case of the non-identity of parts of partly identical pairs in the terms of the Gleitman-Sanders rule.

Even apart from the fact that the theory provides no means of determining "identity" and "non-identity" as is required to formalize the rule, it seems that the rule does not exhaust the contrastive stressing process. For a simple example, notice that it says nothing at all about the occurrence of contrastive stress in affirmative constructions like (43). Nor does it say anything about the semantic distinction signaled by contrastive stress in the pair of sentences cited in (49), which is due to J. R. Ross (in lecture, LSA Summer Institute, 1968):

(49) (a) Haj is too BIG to climb over.

(b) Haj is too big to CLIMB over.

Apparently the function of contrastive stress in (49) is to provide a 'substitute' for relational information which is otherwise unaccountable in the surface structure because of deletions, since (49a) and (49b) are paraphrased by (50a) and (50b), respectively:

(50) (a) Haj is too big to climb over something.

(b) Haj is too big for $\left\{ \begin{array}{l} \text{something} \\ \text{someone} \end{array} \right\}$ to climb over.

With regard to (49), note that the contrastively stressed forms would probably only occur as a conscious effort to disambiguate one member from the other. In a context where the second member is not possible, or probable, the other would be spoken with normal intonation, and it is of course perfectly grammatical when it is. On the other hand, it seems correct to say that (49a), with contrastive stress, seems to carry the same semantic information as (51):

(51) Haj is too big to climb over something, not Haj
is too big for something to climb over.

If this is true, then (49a) and (51) provide corroboration of a recent proposal by Saltarelli (1969: 5) to derive contrastive stress as a syntactic process from underlying propositions and their complements--where the 'complement' of (51), for instance, is the clause introduced by "not". In Saltarelli's proposal, the complement has no superficial realization except as contrastive stress, which strikes me as being a defect of the analysis, insofar as (51) is a viable surface structure alternative for (49a). In any case, Saltarelli would derive the surface structures which are the (a) members of (52)-(54) from the underlying representations which are the (b) members, in which 'Y' represents the "complement of the stressed element":

(52) (a) JOHN built the house.

(b) John built the house, not Y_1 .

(53) (a) John BUILT the house.

(b) John built the house, he didn't Y_2 it.

(54) (a) John built the HOUSE.

(b) John built the house, not the Y_3 .

Extrapolating again from Saltarelli's proposal, it may even be possible to account for the affirmative constructions by positing underlying representations for (43) something like (55):

(55) (a) *Xeno came yesterday, not Xeno didn't come yesterday.

(b) *George did it, not George didn't do it.

In fact, many of the examples considered so far seem to be implicit affirmations of some alternative, which is the fundamental insight of Saltarelli's proposal as I see it. Thus, for example, (45b) represents a surface realization of both the proposition and its complement which is structurally similar to the underlying representation (54b). And (45a) might be construed as having an underlying representation like (56):

(56) *The Red Wings are much better offensively than defensively, not the Red Wings are much better defensively than offensively.

Saltarelli's proposal is no more formalizable in the standard model than is the extended Gleitman-Sanders rule. What, in effect, it attempts to do is to represent part of the discourse context in the underlying \underline{S} 's, which derive superficial hyperfocus realizations in part by deleting the

contextual information. Hence I conclude that both the extended Gleitman-Sanders rule and the Saltarelli proposal seem to provide insights into what is going on in contrastive stressing but that both are beyond the scope of any present versions of generative grammar.

In the framework in which intonation has been represented in generative grammars so far, deep focus can contribute to the surface realization of contrastive stress. In the early analysis, Stockwell generates contrastive stress by the following (somewhat modified) transformation (1960: 367):

(57) CONTRASTIVE STRESS

SD:	X	Y	C	#	
SC:	1	2	3	4	→
	1	3	2	4	

For purposes of this discussion, 'C' can be interpreted as 'intonation centre'. Thus, rule (57) optionally re-replaces the intonation centre at some point in the S which is not the normal or colorless or unmarked point. That is, given the normal intonation on a string as input, such as sentence (58a), where C is on the underlined constituent, (57) generates as its output (58b) or (58c) or any similar string:

(58) (a) I went to the movies.

(b) I went to the movies.

(c) I went to the movies.

Recast in terms of deep focus, rule (57) would move the intonation centre to the [+FILL] constituent.

In the more adequate recent framework which is due to Chomsky and Halle (1968)--who, incidentally, eschew

contrastive stress on the grounds that "many questions of fact and, perhaps, of principle still remain unresolved in this area" (1968: 24)--deep focus can make the same sort of contribution as it does in the Stockwell analysis. To illustrate this requires a brief recapitulation--if "brief" is the right word--of the salient features of the recent analysis.

Consider first the main stress rule (MSR) as shown in (59):

$$(59) \text{ MSR } V \rightarrow \overset{1}{V} / \text{ ___ } C_o ((W) V (C_b))]_{N, A, V}$$

Rule (59) is a simplified version of Ross's reanalysis (1969c) of the Chomsky and Halle MSR, the rule by which word-stress is assigned to the major categories N, A, and V. The symbol C_b is a mnemonic for several final consonants and consonant clusters which affect stress placement: for verbs, C_b includes the sonorants n, l and r ($= C_b(V)$); for adjectives, it includes all the sonorants and s, t and the cluster nt ($= C_b(A)$); for nouns, it includes all sonorants, all dentals and several clusters ($= C_b(N)$). In general, if a noun ends in $C_b(N)$, its stress is unpredictably either final or non-final; all other nouns receive final stress (1969c: 21-25). If an adjective ends in $C_b(A)$, it is non-finally stressed; all others receive final stress (1969c: 35). Verbs ending in $C_b(V)$ are non-finally stressed; all other receive final stress (1969c: 42). Non-final stress is either penultimate or antepenultimate, depending on the occurrence of a "weak cluster" (W in (59)), where a weak cluster has

the structure shown in (60a) as opposed to the strong cluster (S) structures shown in (60bi) and (60bii):

$$(60) (a) \quad W = C_0VC_0^1$$

$$(b) \begin{array}{l} (i) \\ (ii) \end{array} S = \left\{ \begin{array}{l} C_0VC_2 \\ C_0\bar{V}C_0 \end{array} \right\}$$

(In (60), as in the environment specification of (59), 'v' means 'lax vowel' and ' \bar{v} ' means 'tense vowel'; to facilitate discussion, the expansion of (59) which assigns non-final stress will be called "case b", and the expansion which assigns final stress will be called "case f".) Accepting this version of Ross's rule as given, and omitting for the sake of clarity many of the details on which its adequacy ultimately hinges, the rule applies to assign word-stress as follows:

(61) (a) For all monosyllables, case b is vacuous; case f applies.

(b) For all adjectives and verbs which are non- C_b , case f applies.

(62) (a) For all polysyllabic nouns, those ending in $C_b(N)$ must be marked in the lexicon as either [+ case b] or [+ case f].

(b) Those marked as the latter receive final stress, as does, for example, "guitar":

/ gVtar / [+ case f]

MSR 1

(c) Those marked [+ case b] must be scanned for the SD of (59) to determine penultimate or

bracketed elements, erasing those brackets after they apply, next to the innermost of the remaining brackets, and so on until all brackets are erased. On the first cycle, then, the MSR applies to the three major constituents of (63), deriving the string (64):

(64) $\begin{array}{ccccccc} & & 1 & & 1 & & 1 \\ & & \text{jan} & & \text{amast} & & \text{a fortVn} \\ \text{[} & & & \text{[} & & & \text{]} \\ \text{S} & & \text{VP} & & & & \text{VP S} \end{array}$

MSR:by (61a) by (61b) by (62d)

The MSR can no longer apply to (64), since the N, A and V brackets have been erased.

The rule which is now applicable is the nuclear stress rule (NSR), by which constituents with two occurrences of primary stress undergo stress adjustment (cf. Chomsky and Halle 1968: 89-91). The effect of the NSR is to re-affirm primary stress on one member of such a constituent, thus triggering the stress reduction convention (SRC) (cf. Chomsky and Halle 1968: 16-17; also see Stockwell 1960: 363) by which all other stresses within the constituent are automatically reduced by one degree. The NSR can be most simply stated as follows (after Lightner, in lecture, LSA Summer Institute, 1969):

(65) NSR $\begin{array}{cccc} & 1 & & 1 \\ & \text{V} & \rightarrow & \text{V} \\ & & & / \\ & & & \text{V} \dots \text{---} \dots \end{array} \text{]}_{\text{NP, AP, VP, S}}$

Thus, the NSR applies to the VP of (64), deriving (66):

(66) $\begin{array}{ccccccc} & & 1 & & 2 & & 1 \\ & & \text{jan} & & \text{amast} & & \text{a fortVn} \\ \text{[} & & & & & & \text{]} \\ \text{S} & & & & & & \end{array}$

NSR: 1

SRC: 2

The NSR now applies to S on the second cycle, deriving

(67):

		2	3		1
(67)		jan	amast	a	fortVn
	NSR:				1
	SRC:	2	3		

Sentence (67) has the unmarked or normal stress contour.

Deep focus provides a straightforward mechanical means of specifying the correct stress contour under conditions of contrastive stress. If we allow the syntacto-semantic configuration of [+FOCUS, +FILL] and [+TOPIC, +FILL] to be converted under certain conditions into a phonological representation, we need add only one stress rule. The conditions under which this can occur are not entirely clear, but let us assume for want of a more adequate conception that the conversion rule operates just in those cases where the hyperfocused constituent has not triggered a syntactic rule (I return to this point below). In these cases, then, the phonological segments of the particular formative are marked for hyperfocus. Following Gleitman (1965: 271) who uses a star for a similar purpose, I will mark such segments with the symbol '*'. Furthermore, I consider that the conversion rule which specifies '*' will also apply in those cases like (48b) and (48c) above, when the output of the syntactic rules includes two nouns, one of which is coreferential with a pronoun in the same string, to mark the non-coreferential constituent's phonological segments in the same way. Similar conversion rules are required to

convert the syntactic marker of YES/NO interrogatives into a phonological symbol for rising intonation, the syntactic representation of appositives to a phonological symbol for sustained intonation, and so on. The alternative, of course, is to allow syntactic features themselves as input to the phonological component, and to allow phonological rules to include syntactic elements in their SD's--an interpenetration which has not heretofore been countenanced within the theory (cf. Sanders 1968: 69-72 for a characteristically strong statement on this matter).

With all of this provided, it becomes feasible to formulate a contrastive stress rule (CSR) which operates on the stressed syllable of a formative which is marked '*'. Rule (68) is an approximation of the CSR:

$$(68) \text{ CSR } *V \rightarrow \overset{+1}{V} / \dots \underline{\quad} \dots$$

Rule (68), ordered after the NSR, cannot apply until the NSR has specified the normal stress contour and deleted all brackets. That is, (68) applies only at the level of (67), on the condition that one of its formatives, say, the subject N, is specified for hyperfocus, as is represented in (69):

$$(69) *j^2 a^* n \quad a m^3 a s t \quad a \quad f^1 o r t V n$$

The CSR applies, placing contrastive stress over the secondary stress, and the SRC reduces all other stresses by one, deriving (70):

$$(70) \overset{+1}{j} a n \quad a m^4 a s t \quad a \quad f^2 o r t V n$$

The representation (70) correctly specifies the relative degrees of stress in (71):

(71) JOHN amassed a fortune.

Just as in the Stockwell analysis, deep focus provides a means of attracting the intonation to some particular constituent.

Of course, this analysis is inadequate. Among its problems, perhaps the most noticeable is the condition under which the conversion rule applies. As stated, contrastive stress will be blocked from applying to dislocations and clefts, although (72) are clearly grammatical sentences:

(72) (a) JOHN, he amassed a fortune.

(b) It was JOHN who amassed a fortune.

Note that by the same logic which led to the characterization of dislocation, clefting and contrastive stress as "hyperfocus", contrastive stress in (72) should be construed as "super-hyperfocus", a characterization which, if nothing else, should serve as a reminder about how much is yet to be learned about the process.

FOOTNOTES

1. I omit one of her arguments. She claims (1968: 5-6) that the suppletion of some to any in negatives cannot apply to cleft and contrastively stressed sentences. As a result, she cites the following examples and stars (i) and (iii) as ungrammatical:
 - (i) It wasn't John who was followed by anyone in a black turtleneck.
 - (ii) It wasn't John who was followed by someone in a black turtleneck.
 - (iii) JOHN wasn't followed by anyone in a black turtleneck.
 - (iv) JOHN wasn't followed by someone in a black turtleneck.

For me, these are all quite clearly acceptable, as they are for everyone I have asked. Apparently, even in Fischer's dialect the ungrammaticality of (iii) is somewhat doubtful, since she questions the starring of it. In any case, I have omitted the argument in lieu of repeating it by rote.
2. Paul Fletcher points out that the distinction does not hold for his Liverpudlian dialect, in which the (b) members are every bit as acceptable as the (a) members. This fact suggests that for his dialect the (a) and (b) members should be transformationally related.
3. Akmajian considers three dialectal variants of cleft sentences, of which "Dialect I" is represented here. The others are derived from this one in his analysis. Since Dialect I is my own dialect and the only one for which I can find informants, I cite only it. Nothing substantial seems to be gained or lost by restricting the analysis in this manner.
4. One suspects that his careful qualification on this point may be a tacit recognition of Fischer's proposal for the deep structure of clefts, which is reiterated in §5.1. Akmajian acknowledged Fischer's proposal in an earlier draft of his 1970 paper (1969: 2).

§6: SOME RAMIFICATIONS OF DEEP FOCUS
FOR THE STANDARD THEORY OF THE BASE

In §6, I attempt to formalize the informal proposals for topic and focus assignment in §3. Though the formal devices employed are, naturally, restricted as much as possible to those within the pale of the standard theory, the formalism nevertheless proves aberrant on at least two counts.¹ In the first place, a consideration of the type of the rules reveals that they are different from any type presently permitted within the base. However, an inspection of other recent proposals in generative theory suggests that in fact the base must be extended to allow rules of this type. Secondly, a consideration of the nature of the rules for focus and topic assignment reveals that they are illegitimate candidates for the base because they are intrinsically transformational. This is the result of the problem of defining the scope of the assigned features, a problem which is eliminated by extending the standard theory to allow feature matrices under the dominance of nonlexical categories. This extension, like the one which allows rules of the type written here, has been advocated for different reasons in several recent proposals. Thus I will show that deep focus provides corroborative motivation for two proposed revisions of the base component in the standard theory.

6.1. Formalism within the standard theory

To reiterate the proposal for focus assignment in §3.4.1., the formalism must express the following statements:

- (1) (a) The specification [+TOPIC] must be assigned to one and only one of the head nouns of the subject, indirect object or direct object NP's; and
- (b) all nouns except the one specified by (1a) must be marked either [+FOCUS] or [-FOCUS].

Before attempting the formalism, I want to show that such feature assignments cannot be made in the lexicon. Within the base component, the lexicon includes two means of assigning feature specifications. Both can be ruled out quite simply as possible loci for focus assignment. Lexical redundancy rules, like phonological redundancy rules, are restricted to the assignment of predictable specifications for syntacto-semantic features according to a feature hierarchy (cf. §6.2 below for a more detailed discussion). The features which characterize deep focus differ from inherent features because they do not participate in a hierarchy, and are therefore never predictable on the basis of the inherent features of the N to which they are assigned. The second means of feature assignment in the lexicon is in the lexical entry itself, as illustrated in §3.2, (35)-(38). Features thus assigned are the constant but unpredictable features inherent in a given formative on any occurrence, and, needless to say, neither [+TOPIC] nor [+FOCUS] is inherent in any formative. So we conclude that the rules which formalize (1a) and (1b)

AUX in grammars which analyze it as a node) is represented by the variable Z:

$$(5) \left[\begin{array}{c} Z \\ VP \end{array} \left[\begin{array}{c} X \\ NP \end{array} [+N] (S) \right] Y \right] (= (2b))$$

Case (c), the direct object, is contiguous to the right of the indirect object in the VP, as in (6):

$$(6) \left[\begin{array}{c} Z \\ VP \end{array} NP \left[\begin{array}{c} X \\ NP \end{array} [+N] (S) \right] Y \right] (= (2c))$$

Replacing the informal environment of (2) with (4), (5) and (6) gives (7), the first approximation of the topic assignment rule:

$$(7) \left[\begin{array}{c} S \\ S \end{array} \left[\begin{array}{c} X \\ NP \end{array} [---] (S) \right] Y \right] (a)$$

$$[+N] \rightarrow [+TOPIC] / \left[\begin{array}{c} Z \\ VP \end{array} \left[\begin{array}{c} X \\ NP \end{array} [---] (S) \right] Y \right] (b)$$

$$\left[\begin{array}{c} Z \\ VP \end{array} NP \left[\begin{array}{c} X \\ NP \end{array} [---] (S) \right] Y \right] (c)$$

(where (a), (b) and (c) are a disjunctive set)

We can now introduce abbreviatory devices.

Rule (7) can be simplified in two significant ways. First, parts (b) and (c) can be collapsed as (b) alone, provided that the variable Z is not prohibited from including an occurrence of NP, among other constituents. That it is not so prohibited is, of course, the simpler formulation, since prohibiting it from including NP would require a condition on the rule.

Secondly, the environments are redundant in the designation of the head noun matrix within the NP, that is, in the repetition of (3). Moreover, the specification of (3) which

is repeated in (a), (b) and (c) is precisely the characterization which also occurs in the environments of the sample lexical entries of certain irregular verbs in §3. The redundancy arises out of the necessity of spelling out the notion of "head noun" in each case. A grammar which incorporates deep focus could, then, profitably make use of a conventional definition of "head noun", which would in turn provide the basis for an abbreviatory device to be used whenever the notion had to be specified, whether in the base rules or the lexicon. The metarule (8), in which H is a mnemonic for "head noun", will serve as the definition:

$$(8) \quad H = \left[\begin{array}{c} X \\ \text{NP} \end{array} \right] [+N] \quad (S) \quad]$$

This abbreviation and the conflation of parts (b) and (c), coupled with the factoring out of the Y variable, permits the reformulation of (7) as (9):

$$(9) \quad [+N] \rightarrow [+TOPIC] \left/ \left\{ \begin{array}{l} [\\ S \end{array} \right. \right\} \left[\begin{array}{c} \text{---} \\ \text{H} \\ \text{---} \end{array} \right] Y \quad] \quad (a)$$

$$\left\{ \begin{array}{l} [\\ VP \end{array} \right. \left. \begin{array}{l} Z \\ \end{array} \right\} \quad (b, c)$$

(where (a), (b) and (c) are a disjunctive set)

Metarule (8) should not be considered a mere convenience to facilitate the formulation of a few rules. It is in the grammar anyway, motivated by the requirement that the grammar provide information about functional notions like 'subject', 'predicate', and so on--presumably including 'head noun'--which form part of the full structural description of a sentence (Chomsky 1965: 68-74).

The conditional statement that the environment of (9) is a disjunctive set can be formalized by borrowing the 'angle bracket' notation used in phonology (Chomsky and Halle 1968: 76-77). Chomsky and Halle adopt the notation as a special case of parenthesis notation, expressing disjunction, to handle discontinuous dependencies. Thus, for example, (10a) is an abbreviation of the two strings (10a') and (10a''):

- (10) (a) $X_1 \langle Y_1 \rangle X_2 \langle Y_2 \rangle \dots X_n \langle Y_n \rangle$
 (a') $X_1 Y_1 X_2 Y_2 \dots X_n Y_n$
 (a'') $X_1 X_2 \dots X_n$

Simply stated, the notation requires that if one instance of an angled element is chosen, all angled elements must be chosen. Now the condition on (9) can be expressed formally, as (11):

$$(11) \quad [+N] \rightarrow [+TOPIC] / \left\{ \begin{array}{c} [\\ \langle VP \rangle \\ S \end{array} \right\} \langle Z \rangle [-H-] \quad Y \quad]$$

An accoutrement of the angle bracket notation in phonology which cannot be carried over into syntax is the convention by which the maximal expansion of a disjunctively ordered set of strings is applied first (Chomsky and Halle 1968: 29-31, 61-63), which imposes an intrinsic ordering on disjunction such that, for example, (10a) automatically includes the order (10a'), (10a''), as shown. Under such a convention the feature [+TOPIC] will be assigned in every sentence with a transitive verb to one of the object NP's, and never to the subject NP. If the convention is

appropriate anywhere in syntax--and I know of no instance where it is²--the rule (11) will require a condition which states that the disjunctive set of environments is unordered.

Next we need a base rule to assign the feature [\pm FOCUS] according to (1b). This rule can be very general in contrast to (11), as we have seen. In fact, the one restriction that is evident in §3 is that it cannot be positively specified in a noun matrix which already includes [$+$ TOPIC]. Thus (12) is an adequate statement of the rule:

(12) [$-$ TOPIC] \rightarrow [\pm FOCUS]

The only problem which remains is to provide the specification of [$-$ TOPIC] as a feature of all N's except the one oppositely specified by (11). There are two possibilities that I know of. One is to assign the feature [$-$ TOPIC] to all N's in the deep structure by a rule which precedes (11), and then to allow the rule (11) to change the feature in one instance. This procedure is similar to the one used by Rosenbaum in English Grammar II (1967b:6), whereby nouns are marked [$-$ CASE, $-$ GENTITIVE] initially, and some are later specified oppositely under certain conditions. The second possibility is to extend the convention, already in the grammar, by which negative category features are specified. The convention is stated as follows (Chomsky 1965: 111):

...we may assume that each lexical entry automatically, by convention, contains the feature [$-$ A] for every lexical category A, unless it is explicitly provided with the feature [$+$ A]. Thus...the entry for boy contains [$-$ V], [$-$ Adjective], [$-$ M].

This convention can readily be extended to restricted rules

like (11), but never to general rules like (12). Obviously, it gives the wrong result to reformulate (12) so that the right side of the arrow is [+FOCUS] and to expect the negative specification to be filled in by convention, since there will remain no non-positive specifications for it to apply to. However, in cases where the rules provide only positive specifications in restricted environments, as in the assignment of both category and topic features, the convention is applicable. Furthermore, insofar as every natural language prohibits dual category features on the same constituent and polytopicalization in the same S, the extended convention will be universal. A variation of of this alternative--or, perhaps, just another way of stating it-- is employed in phonological markedness theory, where each marking convention is considered to be a statement of its converse as well. Chomsky and Halle (1968:403) explain this point as follows:

We may think of each [marking convention] as analogous to a phonological rule, except that each schema $[\underline{u}F] \rightarrow [\alpha F]/X_Y$ (where $\alpha = +$ or $-$, and X and Y may be null) is interpreted as a pair of rules, the first of which replaces $[\underline{u}F]$ by $[\alpha F]$ in the context X_Y and the second of which replaces $[\underline{m}F]$ by $[-\alpha F]$ (where $-- = +$ and $- + = -$) in the context \bar{X}_Y .

The proposed extension of the convention by which negative category features are specified may be justified when viewed as a generalization of a convention required elsewhere in the grammar.

6.2. Problems

Superficially, the formalism of (1) as rules (11) and

(12) seems well-formed insofar as it utilizes and sometimes extends notational devices and conventions familiar within the standard theory of generative grammar. However, any attempt to integrate the rules into a grammar immediately reveals two over-riding problems which must be resolved.

First, there is the problem of locating such rules in the base component, a problem which was introduced in a preliminary way above. By way of giving this problem a suitable perspective, I will briefly review the development of the standard formulation of the base by its two principal contributors, Chomsky (1965: esp. Chapter 2) and McCawley (1968a). The background provided by this discussion is essential for the revision of the base formulation which I propose in §6.3.

Chomsky's conception of the base in Aspects of the Theory of Syntax contrasts strikingly with earlier formulations (for example, Chomsky 1957:111; Lees 1963:4-20) in the kinds of rules it admits. In addition to rewrite rules such as (13),

(13) $S \rightarrow NP + \text{Predicate-Phrase}$

which are also common to earlier formulations, he introduces a number of innovations. One is the complex symbol (CS) convention, written as follows (1965: 107):

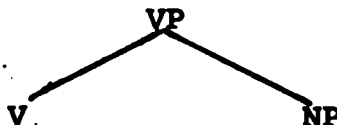
(14) (a) $V \rightarrow CS$

(b) $N \rightarrow CS$

Rules such as (14) introduce under the dominance of lexical nodes--V and N in (14)--matrices containing the positively

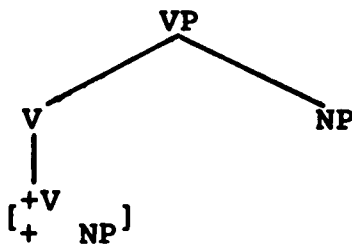
specified lexical node feature, that is [+V] in (14a), and [+N] in (14b), as shown in (15). Moreover, by an extension of the CS convention (1965: 93ff), strict subcategorizational features are introduced by a local transformation into the matrix thus formed. That is, sister nodes of the lexical node which forms a CS by (14) are introduced into the matrix as a feature stating the environment of the node. Thus, the branch of a P-marker (15a) is altered by the application of (14a) above to form (15b):

(15) (a)



The CS convention applies.

(b)



Chomsky also introduces rules which fill in the matrix with inherent features by means of a hierarchical sequence which requires selection of one member of a binary-valued set to the right of the arrow, as in (16)-(18):

(16) [+N] → [±CNT] (= count)

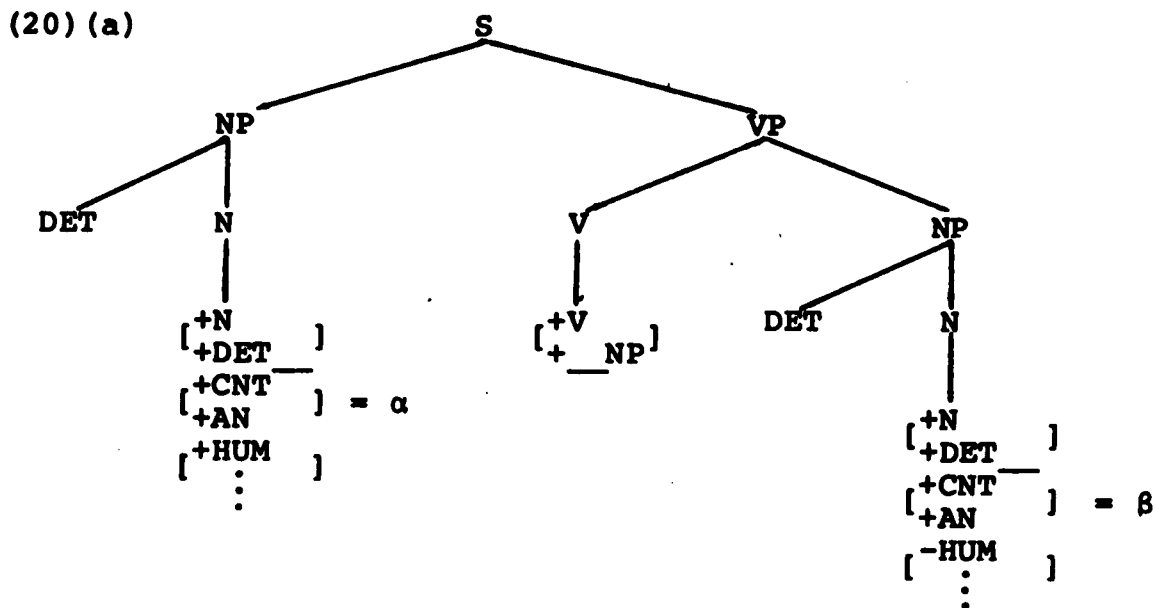
(17) [+CNT] → [±AN] (= animate)

(18) [+AN] → [±HUM] (= human)

And, finally, Chomsky introduces selectional features into the CS of V (and, incidentally, of ADJ) by a rule which he writes as (19):

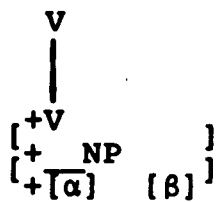
(19) [+V] → CS / α^AUX ___ (DET^β), where α and β are N's

By means of (19), the matrix of a V incorporates as a feature the matrices of the subject and object N's. Thus the node V in the (simplified) P-marker (20a) becomes (20b) after the application of (19):



The selectional features rule applies.

(b)



Into the P-marker formed by rules exemplified by (13), (14), (16) and (19), lexical insertion takes place by 'matching up' feature specifications in a given CS with feature specifications in the matrices associated with formatives in the lexicon. The 'matching up' process is governed by a "distinctness condition" which Chomsky (1965:81) characterizes

as follows: "We say that two segments are distinct just in case one is positively specified with respect to a feature with respect to which the other is negatively specified." As an illustration, consider a grammar which includes the lexical entries shown below (with orthography representing the phonological matrices):

(21) (a) boy [+N, +DET __, +CNT, +AN, +HUM, ...]

(b) dog [+N, +DET __, +CNT, +AN, -HUM, ...]

(c) pet [+V, +__ NP, +[+HUM] __ [+AN], ...]

Upon the derivation of P-marker (20), the CS matrices are compared with the entries in (21) for distinctness. Clearly (21b) cannot be inserted as the subject N of (20) because the former includes the specification [-HUM] while the latter includes [+HUM]; in other words, they are distinct. However, (21a) is not distinct and can be inserted. Similarly, (21b) can be inserted as the object N, and (21c) can be inserted as the verb, thus ultimately deriving the surface structure (22):

(22) The boy pets the dog.

All of this, briefly, is the point of departure for subsequent revisions of the base in generative theory.

Many commentators (for example, Matthews 1967: 128-29, McCawley 1968a: 256, Prideaux 1970: 1-2) have pointed out that Chomsky's formulation is rife with redundancy, a point that may be abundantly clear in the encapsulated summary above. In fact, it is apparently three ways redundant:

- (23) subcategorizational and selectional features inserted into category matrices by rules (14) and (19) repeat information already available in the P-marker;
- (24) subcategorizational and selectional features in matrices are duplicated in lexical matrices such as (21); and
- (25) inherent feature rules such as (16)-(18) specify information also repeated in the lexicon.

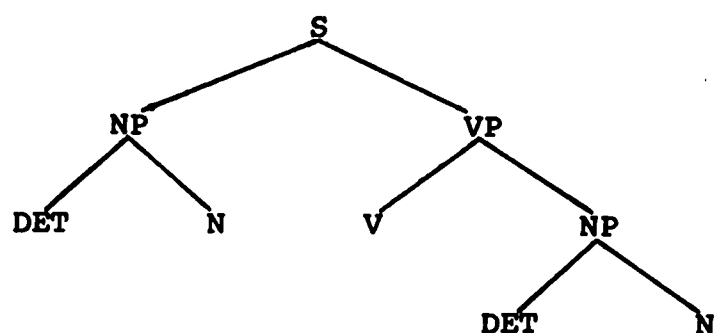
The discussion which follows concentrates on McCawley's reformulation with particular regard to its elimination of such redundancies.³

McCawley (1968a) plunges into Chomsky's thicket of rules and conventions and proposes a highly economical alternative. Basically, he retains the use of branching rules like (13) (but cf. footnote 3 above), but he retains very little else of Chomsky's apparatus. Instead, McCawley proposes that subcategorizational, selectional and inherent feature rules be eliminated in favor of lexical insertion rules which are context-sensitive, as in (26):

- (26) (a) boy [+CNT, +HUM, ...] / DET__
- (b) dog [+CNT, +AN, -HUM, ...] / DET__
- (c) pet ... / NP__NP

That is, as an alternative to developing a CS in the P-marker and matching it up with a matrix in the lexicon, McCawley inserts the fully developed matrix in a specified syntactic environment.⁴ Thus a configuration like (27), the output of the branching rules, includes suitable environments for the insertion of the items in (26):

(27)



The underlying P-marker is formed by attaching the lexical matrices of (26) to the appropriate nodes of (27).

As a final point in the comparison, both formulations provide for redundancy rules but in quite different terms. Chomsky (1965: 214-15) notes that feature hierarchies such as (16)-(18) may have the effect of redundancy rules if interpreted from the bottom up, so to speak. Thus, for example, a rule like (18), in its reverse reading, allows only the value [+AN] in a matrix which includes [+HUM], a relation which is expressed by the rule (28):

(28) [+HUM] → [+AN]

McCawley (1968a: 256-57) proposes that rules such as (28) are more appropriate in the grammar than rules like (18), inasmuch as (28) functions like a phonological redundancy rule in filling in predictable features, while (16)-(18) function unlike any other rules in the grammar by selecting one from the universe of possible feature combinations. Prideaux (1970: 2) adds that McCawley's proposal has the further advantage of permitting specifications like [-ABSTRACT] in the lexical entry for, say, boy, whereas Chomsky's hierarchic rules cannot allow this.

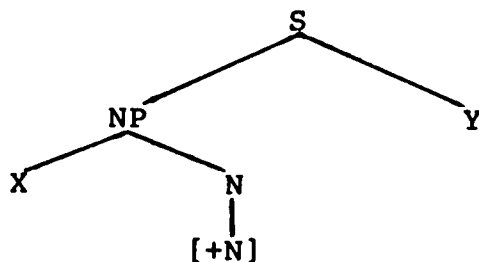
All in all, then, there seem to be good reasons for preferring McCawley's reanalysis to the original formulation of the base component in standard theory. It follows that, while the reanalysis is no more inviolable than the analysis it supersedes, one would hope to be able to maintain the McCawley formulation insofar as possible when bringing new data within the scope of the grammar. In this respect, my analysis of deep focus apparently fails. There is, on the face of it, no place in the McCawley base for rules such as (11) and (12), which assign features in noun matrices at a point prior to lexical insertion. I return to this matter in detail in §6.3.

The second major problem in the formalism of (1) involves the nature of rule (11). As is most clearly seen in (7), the unabbreviated version of (11), the rule is properly a transformational rule rather than a base rule. That is, given the rule schema shown in (29), one must interpret X and Y not as "simple strings" but as P-markers (cf. Bach 1964: 59-61):

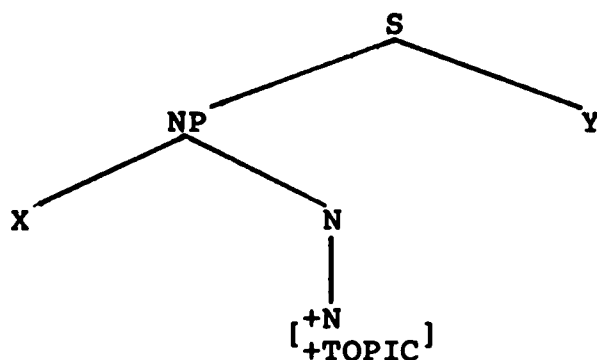
(29) $X \rightarrow Y$

Taking (7a) as a case in point, rule (7) requires consideration of the entire P-marker, and is an instruction to replace the P-marker (30) with the P-marker (31):

(30)



(31)



This criticism is difficult to establish concretely because of the apparent dearth in linguistic literature about the formal constraints upon context-sensitivity in phrase structure rules (cf. Postal 1964a: 76). Among the conditions on rules which have been considered necessary to ensure that a grammar be more interesting theoretically than an unrestricted rewriting system, only one that I know of impinges at all upon context-sensitivity. Postal (1964a: 15, after Chomsky 1959; cf. also Bach 1964: 157-68) imposes (32) as Condition 4 on phrase structure rules:

(32) If $XAY \rightarrow XYZ$, X and Y are null

By definition, then, "systems all of whose rules meet Condition 4 will be called CF-PSG (context-free [phrase structure grammars]), those whose rules do not all meet this condition will be called CS-PSG (context-sensitive)."

The condition is, at best, of marginal utility. Considered as a stricture which delimits the formal properties of a grammar in the sense that all phrase structure grammars must conform to it, which is the sense of "condition" for Conditions 1-3 which precede it (cf. 1964a: 9-15), it is apparently too strong, for no rewriting system that has been

entertained as a model in modern linguistics has in principle prohibited context-sensitive rules in the base (cf. Bach 1964: 36). Considered as a condition under which CF-PSG and CS-PSG receive formal definitions, it is too weak, for a rule like (11) above is a well-formed context-sensitive rule in terms of (32).

However, in practice, linguists have observed constraints upon context-sensitivity, as in the heuristic stated by Koutsoudas in his introductory text (1966: 19; also see McCawley 1968a: 251-52, who makes the same point as part of a more complicated argument):

- (33) Context-restricted P-rules have the same restrictions on them as context-free P-rules, with the additional restriction that the context, or environment, of such a rule, if stated with a class symbol, must be the last expansion of that symbol.

Thus, Koutsoudas considers the set of rules in (34) to be ill-formed because of the environment stated in (34ci), which appears well-formed as (ci') in (35):

(34) (a) A + (B) + C

 (b) B + p + q

 (c) (i) C + $\left\{ \begin{array}{l} r / B_ \\ s \end{array} \right\}$

(35) (c) (i') C + $\left\{ \begin{array}{l} r / q_ \\ s \end{array} \right\}$
 (ii)

For our purposes, it is most important to note that Koutsoudas restricts contextual statements to "a class

symbol" only, barring from consideration any symbols which are not contiguous to the symbol being rewritten, much less the entire sequence of symbols in the P-marker, as in rule (7) above. A similar restriction is imposed by Chomsky (1965: 112-13, 121-22) upon the context of subcategorization rules, when he requires that they be, "in effect, strictly local transformational rules", that is, that they specify only the sister nodes of the category symbol they are associated with. Needless to say, rule (11) falls well beyond any such constraints. A possible solution to this problem is the subject matter of §6.4.

6.3. Packing rules as an augment to the base

When we consider the revisions necessary in McCawley's base to accommodate rules like (11) and (12) it becomes evident that some backtracking is required. At the very least, we will be forced to re-introduce Chomsky's CS convention ((14) above) in order to provide a prelexical matrix into which the specification for [\pm TOPIC] and [\pm FOCUS] can be placed. Since to this extent our hope of maintaining the McCawley formulation in preference to the Chomsky formulation is contravened, it is requisite that such a revision be strongly motivated. In particular, if deep focus is the only motivation for such a revision, we should be forced instead to re-formulate deep focus in some way so that it fits the present conception of the base, or, failing that, to utilize some ad hoc means of specifying deep focus which leaves the present organization of the base intact. It is

important to consider whether the proposed revision of the base can be independently motivated.

Apparently it can be. Prideaux (1970) has argued there is a class of features which McCawley's base cannot accommodate. Although his argument leans heavily on evidence from plurality in nouns--an argument which is recapitulated below with a few additional details--he also mentions definiteness in nouns, aspect in verbs, and focus and topic (1970: 3) as other instances.⁵

As Prideaux points out, the only available means for representing noun plurality in the standard model is one of the following:

- (36) (a) as a lexical redundancy rule
- (b) in the noun matrices of the lexicon
- (c) by a transformational rule
- (d) as a node in the branching rules
- (e) as a feature in the CS of a noun, thereby
 requiring a revision of McCawley's formulation
 of the base

Of these, the first two can be dismissed as implausible fairly readily, because plurality, unlike 'Animate', 'Count', and so on, is almost never an inherent feature in nouns, and almost never participates in a feature hierarchy.⁶ Lexical redundancy rules, as noted above, fill in predictable features, but most nouns in English can be either singular or plural. Similarly, lexical matrices specify inherent (but unpredictable) features, and most English nouns are

sometimes plural and sometimes singular. The reductio ad absurdum of representing plurality in the lexicon is to give up the generalization about noun plurality altogether, and thereby virtually double the lexical entries for nouns, as follows:

(37) (a) boy [+COM, +CNT, ..., -PL]

(b) boys [+COM, +CNT, ..., +PL]

The third means, the introduction of plurality by transformation, clearly constitutes a violation of the Katz-Postal principle that transformations do not alter meaning. Even apart from this, which is cogent enough, the only serious proposal for transformational plurality (Sanders 1968: 135-46) is fraught with problems. Sanders proposes that plurality be handled by conjunction reduction, such that (38b) is the surface realization of underlying (38a), and (39b) of underlying (39a):

(38) (a) I saw one and another and another sparrow →

(b) I saw three sparrows.

(39) (a) I saw one and other and other...sparrow →

(b) I saw sparrows.

As Prideaux points out (1970: 10), the derivation of (39b) from (39a) seems particularly unreasonable insofar as it represents (39b) as a multiply ambiguous surface structure, when intuitively it seems representative only of numerical indefiniteness. The analysis faces an equally serious problem in its presumption that deep structures like these can be devised for all the semantic nuances of the variegated

indefinites in English, including the sample in (40):

(40) (a) I saw some sparrows.

(b) I saw a few sparrows.

(c) I saw many sparrows.

(d) I saw several sparrows. etc.

For the fourth means, Chomsky (1965: 170-73) has argued against the representation of inflectional processes such as plurality in terms of nodes because, as he points out, such an 'item-and-arrangement' analysis merely perpetuates certain pseudo-problems which never arise in the paradigmatic analyses available by segmentalization. While he correctly maintains that English, with its relative lack of inflections, does not provide very satisfactory illustrative material on this point, and therefore uses German, the gist of his argument may be gathered by considering the 'chicken-or-egg' riddle which confronts a linguist using the item-and-arrangement (or nodal) analysis of the word brothers' in a phrase like "his brothers' wives". Either (41a) or (41b) can be a possible analysis, where Z1 represents the possessive morpheme and Z2 represents the plural morpheme (after Gleason 1961: 97-100):

(41) (a) brother + Z₁ + Z₂ = brothers'

(b) brother + Z₂ + Z₁ = brothers'

The questions which arise in this analysis but not in a paradigmatic analysis are: (A) Which of the two possible orders is correct? and (B) Which morpheme is phonetically null in the given environment? Such questions are not

generally susceptible of satisfactory answers. Further arguments against representing plurality as a node are those arguments which are adduced in favor of segmentalization of any kind in a grammar, namely, that the elimination of minor category nodes simplifies projection in semantics (cf. Katz and Fodor 1963: 506, Langendoen 1969: 44-48, on projection), reduces the need for variables in SD's (cf. Ross 1967: esp. 1-7 on the general problem of variables), and delimits deep structure categories to a small and probably universal set (cf. Bach 1967: 462, 477). Thus having eliminated (36a-d), only (36e), which requires revision of the base, remains.

Definiteness in nouns is another feature which, like plurality, is noninherent and cannot be accommodated by the present formulation of the base. Several proposals have been put forward which require that noun definiteness must be specified in the SD's of certain transformations in order to block certain derivations. Carlota Smith (1961: 344) points out that definiteness is crucial in determining grammaticality in certain modifier constructions in English, in which the noun head must be indefinite ([-DEF]), as illustrated by (42) and (43):

(42) (a) He needs an informant innocent of the niceties of grammar.

(b) *He needs the informant innocent of the niceties of grammar.

(43) (a) She lived in so small a room that she got
claustrophobia.

(b) *She lived in so small the room that she got
claustrophobia.

Postal (1966: 204-06) lists several other constructions which depend crucially upon definiteness for grammaticality. Among them are genitive complement constructions like (44) and (45), which require a definite N as subject, and certain cleft sentences with complements, like (46), which require an indefinite noun head:

(44) (a) That car is John's.

(b) *Some car is John's.

(45) (a) The soup is John's.

(b) *Some soup is John's.

(46) (a) It was a scandal that John spoke.

(b) *It was the scandal that John spoke.

Several grammarians have noted that expletives are derivable only from underlying structures in which the subject N is indefinite (Postal 1966: 205; Lyons 1968: 390; Kirkwood 1969: 102), as illustrated by the pairs in (47) and (48):⁷

(47) (a) Some toys are in the box.

(b) There are some toys in the box.

(48) (a) Those toys are in the box.

(b) *There are those toys in the box.

Determiners, as these examples indicate, are superficial markers of noun definiteness, but note that proper nouns are syntactically [+DEF] although they typically have no

determiner at all. Therefore, the principled analysis would seem to be the one which advocates that definiteness is a feature on the noun rather than on its determiner. This analysis coincides with my own visceral feeling that the rules which operate on structures like (44)-(47) should be contingent upon the head noun rather than on some otherwise insignificant node like determiner. By means of arguments that parallel those for plurality, noun definiteness can be shown to be another case which arbitrates in favor of the revision which follows from (36e).

Further motivation is available in feature analysis of verb tense ([±PAST]), modality ([±MOD]) and aspect ([±PERF, ±PROG]), as exemplified in Rosenbaum (1967b: 8-9, 21-22, 24). Like plurality and definiteness in nouns, none of these is inherent in particular verbs nor typically predictable in terms of a feature hierarchy. The arguments for analyzing such categories as features in the verbal matrix are again similar to those for plurality which resulted in the elimination of the alternatives (36a-d). Evidence that a feature analysis of verbal aspect succeeds where alternative analyses fail (Prideaux 1970: 7-9) strengthens the argument for feature analysis (Prideaux's argument on this point is reviewed in §7.1.1.).

In conclusion, I concur with Prideaux in proposing that the base component be revised by the addition of two types of rules:

- (49) (a) a CS convention, similar to that of Chomsky (= (14) above, but excluding the strict subcategorizational rider which Chomsky attaches to it); and
- (b) rules of the form $[\alpha F] \rightarrow [\pm G]$, where F and G are features.

Hereafter, I refer to (49a) as the 'packing rule convention' and to (49b) as 'packing rules'.

6.3.1. Constraints on packing rules. In the light of the above discussion, it is important to determine whether the admission of packing rules into the McCawley formulation simply has the phoenix-like effect of re-introducing Chomsky's formulation anew. As was shown above, McCawley's formulation is preferable because it eliminates redundancies and simplifies the formal apparatus. Specifically, I considered the following advantages:

- (50) (a) elimination of the CS convention
- (b) elimination of the strict subcategorizational convention
- (c) elimination of selectional rules from the prelexical component
- (d) elimination of inherent features from the prelexical rules
- (e) elimination of the distinctness condition

I consider that the revision of the base as outlined in (49) will be more highly valued inasmuch as it can maintain (50) wherever possible. However, evidently (50) cannot be

maintained in toto, since (50a) must be reversed to allow the packing rule convention. Whether (50b-e) can be maintained is now an open question. With regard to (50b) and (50c), I find no evidence whatever that they cannot be maintained. The information provided by the subcategorizational convention and by selectional rules is still, of course, available in the P-marker and in the contextual restriction on lexical entries, respectively, and need not apparently be made available through further means. That leaves (50d) and (50e), and here, some complications arise.

The complications originate in the fact that for some subclasses of nouns and verbs, there is an overlap of inherent features and packing features. To take the simplest example, the relationship between noun count-ness and plurality is predictable when the noun is [-CNT], by the following redundancy rule:

(51) [-CNT] → [-PL]

Such a rule has the effect of specifying singularity in the lexical matrices of noncount (mass) nouns. However, assuming that a grammar which includes (51) also includes a packing rule like (52),

(52) [+N] → [±PL]

then it is obvious that the grammar will also have to include among its devices some version of the distinctness condition, and therefore (50e) cannot be maintained. That is, lexical insertion will depend not only upon the environmental specification in these cases, but also upon matching-up the coefficient of plurality in the lexical

matrix of mass nouns (by (51)) with the coefficient of plurality in the CS (by (52)). Notice that giving up the generalization expressed in (51) by marking all mass nouns [-PL] in the lexicon makes no difference, since matching-up is still required.

As a second example, consider verbal aspect in terms of a packing rule such as (53):

(53) [+V] + $\begin{bmatrix} +\text{PERF} \\ +\text{PROG} \end{bmatrix}$

As is well-known (cf. Lees 1963: 92; Joos 1964: 116-20; Lakoff 1965: A9-11), verbs which are inherently stative ([+STAT]) are predictably never progressivized. Thus the sentences in (54) are grammatical but those in (55) are not:

(54) (a) Xeno is ogling the bunny.

$\begin{bmatrix} -\text{STAT} \\ +\text{PROG} \end{bmatrix}$

(b) He is buying the sugar.

$\begin{bmatrix} -\text{STAT} \\ +\text{PROG} \end{bmatrix}$

(c) Jennifer is imitating her father.

$\begin{bmatrix} -\text{STAT} \\ +\text{PROG} \end{bmatrix}$

(55) (a) *Xeno is knowing the bunny.

$\begin{bmatrix} +\text{STAT} \\ +\text{PROG} \end{bmatrix}$

(b) *He is owning the sugar.

$\begin{bmatrix} +\text{STAT} \\ +\text{PROG} \end{bmatrix}$

(c) *Jennifer is resembling her father.

$\begin{bmatrix} +\text{STAT} \\ +\text{PROG} \end{bmatrix}$

Somehow the packing rules must permit the statement that

stative verbs cannot be progressivized in the grammar. One possible reformulation which expresses this generalization is (56):

(56) (a) [+V] → [[±]PERF
 [_±STAT]

(b) [-STAT] → [_±PROG]

This, of course, entails giving up both (50d), by allowing the inherent feature [_±STAT] in the packing rules, and (50e), by requiring that the coefficient for stativity in the CS matrix match the coefficient in the lexical entry. A better alternative is to retain (53), and incorporate the redundancy rule (57):

(57) [_±STAT] → [-PROG]

The second alternative is preferable because it is consistent with (50d), and allows its retention. Like the case of plurality in mass nouns, however, it requires some version of the distinctness condition in order to match up the coefficient of progressive in the CS and in the lexicon.

Thus the revision of the base component to allow packing rules requires that (50a) and (50e) be reversed although it allows perhaps a constrained version of the distinctness condition, and wholly retains (50b), (50c) and (50d).

6.3.2. Packing rules and the comprehensiveness of the grammar. I regard as strong support for the addition of packing rules to the base the fact that they permit the model to handle a considerable range of new data. One such extension is, of course, its incorporation of deep focus. The addition of packing rules, as I have indicated

above, provides a means of incorporating rules for focus and topic assignment in the model. Therefore, the revised base can not only accommodate plurality, definiteness, aspect, and so on, which are venerable candidates for inclusion in a grammar, but also deep focus, which is essentially a new proposal.

Another proposal of the latter sort is 'inalienable possession', for which I will present an analysis in some detail in order to demonstrate further that a grammar which includes packing rules can accommodate new data. The recognition of inalienable possession as a grammatical construction of English is fairly recent (Fillmore 1968: 61-81; Chomsky 1968: 17) and seems to be one result of the increased awareness of the role of semantics in generative theory. The semantic distinction between two kinds of possession is perhaps most clearly seen in an ambiguous phrase like my arms, where "arms" can mean either "weapons" or "appendages attached at the shoulders". In a grammar which does not observe a distinction between the kinds of possession involved in the two homophonous phrases, both senses of my arms are usually derived from the reduction of a deep structure like (58):

(58) the arms [I have (the) arms]
 S

Note the occurrence of the determiner in the embedded S seems appropriate only if "arms" means "weapons"--the alienable form--and inappropriate if it means "body parts"--the inalienable form. However, its occurrence can hardly

be blocked in the latter case, since the rules which operate to reduce deep structures like (58) are typically conditional upon identity of NP's in the deep structure. Thus, from the outset, an undifferentiated analysis is forced to accept a counter-intuitive representation for inalienables. The syntactic distinction is less subtle in the relativized structure derived from (58), where (59a), the alienable sense, is a straightforward surface structure but (59b), the inalienable, is marginal at best:

(59) (a) the arms [= weapons] which I have

(b)?the arms [=body parts] which I have

The latter, but not the former, must usually undergo further reduction. The fully reduced form, "my arms", is acceptable for either sense. However, the syntactic distinction between the two senses is not entirely wiped out. Cantrall (1969: 14) claims that there is a difference in pitch which marks the underlying semantic difference. He cites the following pairs as evidence, using integer superscripts to indicate the eight pitch levels which he distinguishes:

(60) (a) Bill lost his tie in the scuffle.

(b) Bill lost his eye in the scuffle.

He asserts that the sentence (60b) read with the pitch pattern of (60a) "requires Bill's eye to be a 'glass eye' or to be generally from any source not inherent to him; i.e., either detached or detachable"--a statement which characterizes as well as any the meaning of "alienable possession".

In addition to body part terms, kinship terms should also have a separate source of possession based on semantic distinctions. Many languages, especially Amerindian and

Austronesian, distinguish alienable and inalienable possession by superficial markers like distinct possessor morphemes or affix-order differences (cf. Fillmore 1968: 62), both of which are operative in Stony, a dialect of Dakota (Siouan):

(61) alienable (prefix tha-)

(a) $t^h a$ -wowa^vsi 'his servant'

(b) $t^h a$ -s^vũka 'his horse'

(c) $t^h a$ -wi^vču 'his wife'

(62) inalienable (suffix -ku .

(a) hũ-ku 'his mother'

(b) sũka-ku 'her younger brother'

(c) hikana-ku 'her husband'

Notice that in Stony the two types of possession are redundantly distinguished, both by the affix:suffix opposition and by the unrelated possessor morphemes. Unfortunately, the semantic difference is more difficult to explicate for kinship terms in English than for body parts in the absence of any ambiguous phrase. Perhaps the point can best be made by resorting to an elaborate fabrication cum Jerry L. Morgan (and, incidentally, cum grano salis): suppose that an afternoon TV quiz master ventures into his audience to interview a lady with great grandchildren; suppose further that upon finding her he announces, "I have a great grandmother here in the audience." The sense in which she is "his" great grandmother is very different than the sense in which his mother's mother's mother is "his" great grandmother. That difference is a

reflection of the semantic difference between alienable and inalienable possession.

I propose that inalienable possession be derived by means of packing rules which specify possession in the matrix of nouns which are [-ALIENABLE], rather than by embeddings like (58), which can hereafter be restricted to alienable possession. A late transformational rule will peel out the subset of possessor features to the left of the possessed noun, and a subsequent lexical pass will fill in its lexical shape. Such a proposal immediately captures two generalizations missed by the standard analysis. In the first place, it prevents derivations like (59b) automatically. Secondly, it generates the possessor morphemes in a manner identical to determiners in an analysis which utilizes segmentalization. As Postal (1966: 203ff) has shown, forms like our are types of definite articles: they fill the same slots as other determiners and never co-occur with other determiners. The late peeling rule for possessor attachment will be the same rule which attaches determiners. The marking of nouns in the lexicon as [-ALIENABLE] for kinship and body part terms and [+ALIENABLE] otherwise is probably necessary in the standard formulation anyway, in order to state the condition that further reduction is obligatory for (59b) but optional for (59a) and also to signal the pitch contrast in pairs like (60). One minor problem, however, in considering alienability an inherent feature of nouns is that body parts do on occasion

function as [+ALIENABLE] nouns, as in (63):

(63) (a) Geronimo carried his three scalps back from the war.
[+ALIENABLE]

(b) Dr. Cooley prepared his heart for the transplant.
[+ALIENABLE]

Nevertheless, as the examples illustrate, such occurrences are sufficiently rare that they constitute no great theoretical issue.

The proposed analysis of inalienable possession can be incorporated into the revised formulation of the base as a set of packing rules (64) combined with redundancy rules (65) and lexical matrices (66), as follows:

(64) Packing rules

- (a) [+DEF] → [±POSS] (= possessor)
- (b) [+POSS] → $\begin{bmatrix} \pm I \\ \pm III \end{bmatrix}$ (= first person)
(= third person)
- (c) $\left\{ \begin{array}{l} [+I] \\ [+III] \end{array} \right\}$ → [±II] (= second person)
- (d) $\begin{bmatrix} -I \\ -II \\ +III \end{bmatrix}$ → [±PRO] (= pro form)

(65) Redundancy rules

- (a) [-ALIENABLE] → [+POSS]
- (b) $\begin{bmatrix} -I \\ -III \end{bmatrix}$ → [+II]
- (c) $\left\{ \begin{array}{l} [+I] \\ [+II] \end{array} \right\}$ → [+PRO]
- (d) $\begin{bmatrix} \alpha I \\ \beta II \\ \gamma III \end{bmatrix}$ → [-SING]⁸ (= possessor singular)

where α , β and γ are + or - in any (generable) combination not specified for [±SING] in the lexicon.

Rule (64a) relates the possessor morphemes and other definite determiners, as discussed above. The specification [+DEF, -POSS] characterizes the, and further features like [+PROXIMATE, ±SING] characterize the demonstratives. The use of three person features follows Postal's suggestion (1966: 22-23; for suggestions involving two person features, see Boas 1911: 35 and Lyons 1968: 277-78). Rule (64c), together with redundancy rule (65b), blocks the derivation [-I, -II, -III], which, to my knowledge, has no interpretation among the possessor morphemes of English.

Thus the admission of packing rules provides a plausible second source for possessives, as required by semantic considerations. Packing rules find motivation not only in the necessity of providing a location for such traditional categories as plurality, but also by the necessity of accommodating categories which have not often been traditionally recognized, such as inalienable possession and deep focus.

6.4. Feature matrices under nonlexical categories

The second major problem with the topic assignment rule (11) is that it is in reality a transformation inasmuch as its context is not strictly local. The sources of this problem are quite clear: first, for each NP which can accept the feature [+TOPIC], it is necessary to characterize the notion 'head noun', since N's but not NP's can enter into a complex symbol in the standard theory; second, since only certain NP's can be topicalized according to the analysis of §3, it is necessary to characterize those NP's in the

rule as 'subject of S', 'direct object of S' and 'indirect object of S'. Because the formalism of (11) is undertaken with a commitment to retain the notation of the standard theory, we are forced to observe a particular constraint due to Chomsky (1965: 188) with regard to categories and features, namely, that only lexical categories can enter into a complex symbol. As a result, instead of formalizing the straightforward informal statement that 'certain NP's can be topicalized' we have instead been forced to formalize the more convolute statement that 'certain N's within certain NP's can be topicalized, given that the topicalization has the scope of the NP.' As long as the constraint upon features and categories is maintained, the complexity of (11) is unavoidable. If, on the other hand, the constraint is removed, (11) can be stated in a manner equivalent to the straightforward statement above, thus eliminating the problem. We must first consider the implications of removing the constraint.

In fact, the constraint has been challenged occasionally ever since it was originally proposed, and recently Chomsky (1968: 25) has himself challenged it, at the same time pointing out its pre-generativist origins:

In the earliest work on generative grammar it was assumed that the elements of the underlying base grammar are formatives and categories; each category corresponds to a class of strings of formatives. This assumption was carried over from structuralist syntactic theories, which regarded a grammar as a system of classes of elements derived by analytic procedures of segmentation and classification....it was soon found necessary to depart from this assumption in the case of lexical categories. The resulting "mixed theory" had a certain

technical artificiality, in that lexical categories were interpreted both as categories of the base (N, V, etc.) and as features of the lexicon (+N, +V, etc.). In fact, when the reliance on analytic procedures of segmentation and classification is abandoned, there is no reason to retain the notion of category at all, even for the base. We might just as well eliminate the distinction of feature and category, and regard all symbols of the grammar as sets of features.

Thus Chomsky provides historical vindication for overthrowing his earlier proposal.

Weinreich (1966: 434-42) first proposed nonlexical complex symbols to handle several phenomena not accounted for in standard theory, although some of these have since turned out to be accountable in a grammar which employs segmentalization. As an example of the latter, consider Weinreich's proposal as it affects determiner selection for mass and count nouns. He correctly points out that a grammar which, like Chomsky's (1965), assumes DET to be a node cannot account for the co-occurrence relations between determiners and certain sub-classes of nouns. Such a grammar will generate a flood and some blood, but also *some flood and *a blood. As a more adequate analysis, Weinreich proposes that [\pm CNT] be regarded as a feature of NP rather than the N, and that the grammar include rules like (67):

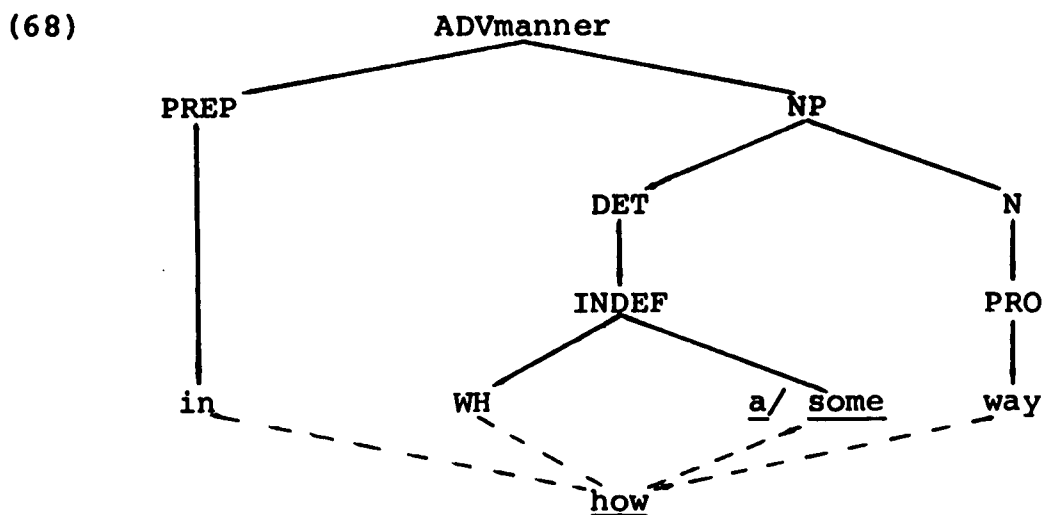
(67) (a) S \rightarrow NP[\pm CNT] + VP

(b) NP[α CNT] \rightarrow DET[α CNT] + N[α CNT]

The specification [α CNT] in (67b) guarantees that the determiner will correlate with its noun with regard to countness, thus blocking the insertion of the indefinite a,

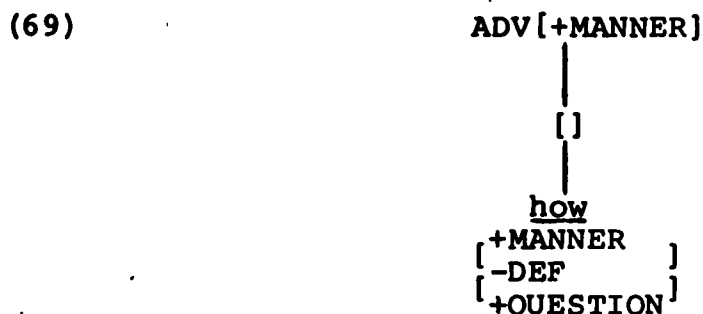
which will be [+CNT] in the lexicon, with blood, which is [-CNT]. The cogency of this argument is lost, however, if one assumes that DET is not a deep structure node but is a subset of features in the N matrix, in a grammar which employs packing and peeling rules in the manner outlined above. In this case, the inherent feature [+CNT] or [-CNT] of the noun is also a member of the N matrix, and can readily be peeled out after lexical insertion applies for the N and before it applies for the determiner.

However, many more of Weinreich's arguments remain cogent arguments in favor of nonlexical category matrices, particularly when they are proposed as alternatives to standard analyses which rely heavily on segmentation, as the quotation from Chomsky above would suggest. For example, Weinreich cites Katz and Postal's treatment of PRO-forms, which typically involve reductions of complex branching structures. As a specific instance, Katz and Postal derive how as a reduction of the following tree:



The phonological shape how is derived by morphophonemic rules which reduce the syntactic string in WH a/some way (as indicated by the broken lines in (68)), a procedure which is, as Weinreich points out, completely arbitrary.

Moreover, he notes that the 'semantically relevant' information which Katz and Postal incorporate by means of the "great excess of linear structure" can be represented by semantic features introduced at a pre-terminal node by an instruction, here represented as [], to make a lexical insertion. This Weinreich proposes that (68) be replaced by (69):



He suggests that the proposal be extended to handle all PRO-forms in the grammar.

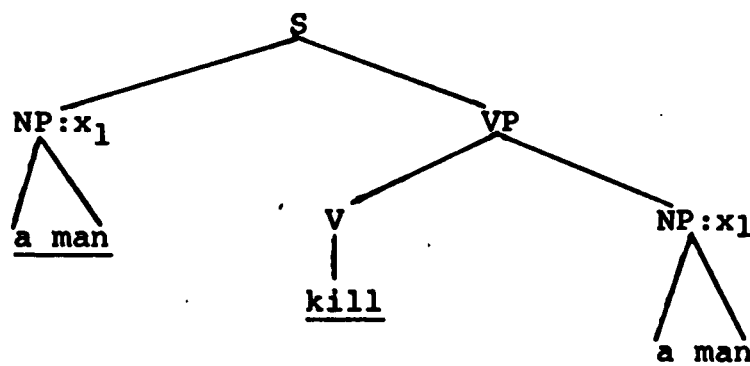
McCawley (1968b: 137fn, 141-42) presents an informal argument for analyzable prelexical nodes based on pronominalization. He notices that Chomsky's system for attaching referential indices (1965: 145-47) gives the wrong result in some cases. In fact, noun coreferentiality is not even required for pronominalization in sentences like (70):

(70) John has a blue hat and I have a brown one.

Here, the the referent of the pronoun one is a different

(non-coreferential) hat. By contrast, those transformations which do require coreferentiality, such as reflexivization, require it of NP's, not merely N's. So McCawley argues for attaching indices to the NP node, as represented in the P-marker (71):

(71) underlying representation: A man killed himself.



He further argues that pronoun choice is determined by the index and certain features attached to the NP node:

"Pronominalization consists of wiping out everything except the index and those grammatical features." Although he doesn't provide details, presumably the features on the NP node would have to include at least [\pm MASC, \pm FEM] and perhaps [\pm PL] in order to determine the appropriate pronoun choice in the lexicon.

Chomsky's reversal of his earlier position that only lexical categories can enter into complex symbols apparently has its origin in his attempt to generate certain types of nominalizations directly in the base. He considers (1968: 19-27) that the grammar must include a base schema like (72) for complex NP's, where (72) represents the right side of a branching rule:

(72) DET + N + NP + (by Δ)

When the (optional) agentive is not generated in the base, the schema is actualized as a possessivized NP, as in

(73):

(73) John's picture of Mary

When the agentive is generated, the underlying string (74a) obligatorily undergoes agent-postposing to yield the surface structure (74b):

(74) (a) John + picture + Mary + by Δ

(b) the picture of Mary by John

Chomsky notes that in the related structures (73) and (74b) there is an alternation between the NP which is ultimately possessivized and the determiner; specifically, when the NP is moved from the DET node, an article occurs in its place. This fact leads him to propose the base rule (75):

(75) ARTICLE + [±DEF, (±NP)]

By (75), an article can be either definite or indefinite or it can be an NP which is either definite or indefinite. In the latter case, the NP can be permuted, as by agent-postposing in (74), leaving the feature for definiteness behind. The 'residue' of definiteness later triggers article insertion.

Having admitted nonlexical categories as complex symbols, Chomsky goes on to suggest further advantages which accrue to the grammar by modifying it in this manner. Chief among these is the possibility of introducing phrase structure through transformations, a problem that was discussed inconclusively with regard to passivization in

§3 and is discussed in some detail in §7. Chomsky illustrates his point by noting that one would like to relate structures like (76) transformationally by deriving (76a) from (76b):

(76) (a) A man is in the room.

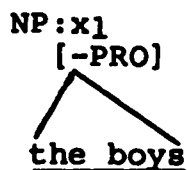
(b) There is a man in the room.

However, he notes that one must assign the transformationally derived there structure as an NP, since, like other NP's, it is subject to such transformations as the interrogative rule. However, a theory which does not permit structure-building by transformation "requires some artificiality" to assign it such structure: presumably (again) an underlying representation with an empty NP node into which there can be transformationally inserted. Chomsky argues that such artificiality can be averted by allowing nonlexical category features in the grammar, since the transformation can then introduce the complex symbol [there, +NP] (where there stands for a complex of features), thus deriving a P-marker which meets the SD of the interrogative rule and other transformations.

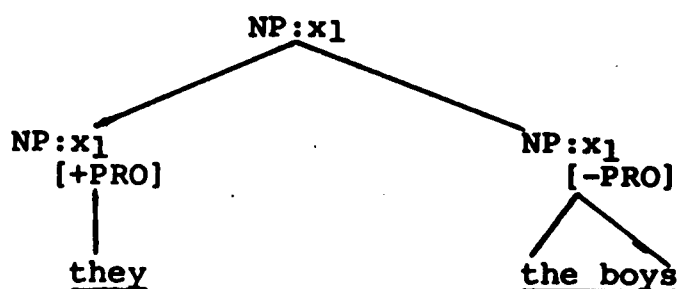
Finally, Vanek, in an important paper (1969b), has argued that the artificial distinction between categories and features has been a hindrance to the linguist's perception of significant generalizations in syntax. As an example, he points out that various PRO-forms seem to originate in a parallel manner, but the processes are not related at all in standard formulations. Pronouns, he claims, are derived in two steps, the first of which copies the original noun matrix to its left by Chomsky-adjunction and specifies the

copied node as [+PRO] instead of [-PRO]. By this rule, the noun node (77a) assuming that it is part of a structure that meets the SD of the pronominalization rule, becomes (77b) by the SC (cf. Vanek 1969b: 540):

(77) (a)



(b)



The second step optionally deletes the original NP node, leaving only the pronoun in the surface structure. For English, though apparently not for Czech or Nahuatl which Vanek also deals with, this rule is obligatory except for first and second personal plural pronouns in which case it is optional, as illustrated by the following sentences (1969b: 544):

(78) (a) We students are in possession of all our faculties.

(b) You guys are the greatest.

Vanek then points out that PRO-adverbs can be derived in the same way, first by Chomsky-adjoining the [+PRO] adverb node to the original adverb or adverbial phrase, and then by optionally deleting the original node, as illustrated by (79):

(79) (a) You couldn't get me to move there (to Miami) in
a million years.

(b) It was then (during the war) that the taxes
started soaring.

Vanek claims that the rules are even more general, and that every category permits adjunction of [+PRO] nodes in the manner outlined. However, the standard theory has militated against recognizing processes which operate on several categories by regarding categories as unanalyzable units, which thereby precludes consideration of categories as natural classes. Following Chomsky's suggestion, Vanek proposes (1969b: 536) that syntactic categories be analyzed as feature complexes, as in (80), where the leftmost column represents features, and the topmost line identifies the feature columns in terms of the familiar category symbols:

(80)		S	NP	VP	N	V
	Sentence [S]	+	-	-	-	-
	Noun [N]	-	+	-	+	-
	Verb [V]	-	-	+	-	+
	Phrase [P]	+	+	+	-	-
	Category [C]	+	+	+	+	+

Vanek maintains that such a classification permits the specification of natural classes in syntax by means of features, and cites as an illustration the heretofore informal notion of (in his terms) "major category" and

"minor category" which can now be specified as [+C, +P] and [+C, -P], respectively. A grammar which incorporates the analysis of (80) can characterize pancategorial rules like PRO-node adjunction in an economical way, as (81) (1969b: 545):

(81) GRAMMATICAL FORMATIVE CREATION

SD:	X	[+C]	Y	
SC:	1	2	3	→
	1	2:[+PRO]#2	3	

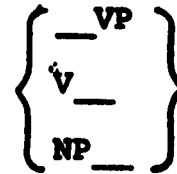
(For another example, cf. the proposal for focus assignment in §3.4.2.) Thus the elimination of the distinction between categories and features permits syntactic theory to utilize the notion "natural class" and capture generalizations in a way that is not otherwise possible.

Topic assignment provides motivation for analyzable preterminal nodes which corroborates McCawley's argument, that is, that certain features are associated with NP's rather than N's. Weinreich's argument, based on the elegance of the formal model, and the arguments of Chomsky and Vanek, based on naturalness, provide additional kinds of motivation.

If on the basis of such evidence we eliminate the distinction between categories and features, we summarily eliminate the remaining problem in the formalism of rule (11) by obviating the need to characterize within the rule the head noun of the NP. Rule (11) can now be reformulated for NP's so that its environment is strictly local, as is illustrated by (82):

(82)

[+NP] + [+TOPIC] /



As the above arguments have illustrated, what appeared to be problems in the formalism of deep focus turn out instead to be general problems in the standard theory, and deep focus provides corroborative motivation for two proposed solutions.

FOOTNOTES

1. My awareness of both counts is attributable to Gary D. Prideaux, through his unpublished paper entitled "Grammatical Feature Rules" (1970) and his comments on an earlier draft of this thesis.
2. On the other hand, I know of another instance where it is not appropriate, although it turns out to be a rather exotic instance. Jackendoff (in lecture, LSA Summer Institute, 1969) conflates the branching rules which--essentially--rewrite NP and VP, as follows:

$$\begin{array}{c} = \\ \left[\begin{array}{c} \bar{X} \\ \langle +v \rangle \\ \alpha v \end{array} \right] \rightarrow (wh) (neg) (\bar{V}) (\bar{N}) (\bar{\alpha}ADV^Y) \langle T (M) (have + en) (be + ing) \rangle \bar{X} \end{array}$$

Obviously, if the maximal expansion convention applied to this rule, the rule would always rewrite VP and never rewrite NP. However, the point of this footnote is predicated on the notion that the rules are disjunctively ordered, as the notation indicates, and Jackendoff's notation is in fact a mistake, since the rules are conjunctive.

3. McCawley (1968a) is, of course, concerned with eliminating such redundancies only as one motive for his reanalysis. However, his other motives are largely ignored in my discussion. For example, his concern with replacing phrase structure rules like (13) above with "node admissibility conditions" does not impinge upon the issue under consideration, and to avoid introducing the complexities of that argument I use the term "branching rules" as a generic reference for either kind.
4. Note that 'syntactic' and not 'syntacto-semantic' is the correct term for McCawley's formulation, though not for that of Chomsky who states the selectional features in terms of syntacto-semantic features such as 'Animate', 'Human', etc. (cf. (26c) and (21c) in the text above). McCawley introduces an argument against the existence of semantic selectional features in the last section of his paper (1968a: 264-68), although he assumes their existence in the earlier sections where he develops the reanalysis. He has since reiterated his argument (1968b: 132-36; 1969a: 1-3), and counter-arguments are just beginning to appear (for example, Kuroda 1969). In general, McCawley argues that sentences which apparently violate so-called selectional restrictions result in 'token-oddity' (or semantic anomaly) rather than

ungrammaticality. For example (1968a: 257fn), a sentence like The waitress hurt himself is considered ungrammatical by Chomsky but can be understood as fully grammatical if interpreted metaphorically, that is, as an imputation of either the effeminacy of a waiter or the virility of a waitress.

5. Prideaux refers to this set of features as "grammatical features", presumably to distinguish them from the "inherent features" in the lexicon, and perhaps to suggest their surface realization as 'grammatical' inflections (plurality, aspect) and function words (definiteness). The rules of the base are termed by him "grammatical feature rules". I prefer the noncommittal term "packing rules", which I use throughout, since it is difficult to see how the term "grammatical" adequately expresses the class membership of topic and focus--or of inalienable possession, which I deal with later. Neither of these is considered in any detail by Prideaux.

The term "packing rules" was first used in characterizing the organization of a grammar which utilizes segmentalization. Obviously such a grammar requires two innovations in the standard theory, which for convenient reference might be labeled "packing rules", the rules of the base by which features for minor categories (AUX, DET, etc.) are specified in the matrices of major categories (NP, VP, etc.), and "peeling rules", the transformations which select subsets of the features and 'peel' them out as branches of the major category node.

6. The qualification "almost never" is required, of course, to account for the handful of exceptions for which plurality is inherent, like scissors, pants and clothes, which are inherently [+PLURAL], and for the class of mass nouns which are predictably [-PLURAL] and therefore may be said to participate in a feature hierarchy.

7. Joos has pointed out an interesting class of apparent exceptions attested in his corpus for The English Verb (1964: 88), which have tertiary stressed or (in casual style) unstressed there and a predicate nominal which is [+DEF], as in (i), paraphrased by Joos as (ii):

(i) There³'s Mr. Lawrence¹

(ii) Mr. Lawrence [also] exists, let's not forget Mr. Lawrence.

Constructions like (i) contrast semantically with stressed (locative) there, as illustrated by (iii) which Joos paraphrases as (iv):

(iii) There's Mr. Lawrence.

(iv) I agree with you that the defense is ready to proceed, for Mr. Lawrence is present: see him?

It seems to me that constructions like (i) also contrast semantically with expletive there as in (47b), with which it is fully homophonous, and that a distinction must be made between expletive there constructions and (what I will provisionally call) enumerative there constructions. Thus (i) is an example of enumerative there, as are (v)-(vii):

(v) There are forty loaves and forty fishes and nothing else.

(vi) There's Mr. Lawrence as well as Mr. Riggs to consider.

(vii) There are those toys in the box and these toys under the chair to be picked up.

Notice that (48b) in the sense of (vii) is grammatical, but in the sense of (47b) is not. Sentences like (48b) are ungrammatical not only if there is "nonlocative", as Postal says (1966: 205), but also if it is 'nonenumerative' as well.

8. There is a true generalization here someplace, though rule (64d) does not express it. The point is that any matrix in which more than one person feature is positively specified must be nonsingular. However, the accepted notational devices express this only by the cumbersome (64d'):

$$(64) (d') \quad \left\{ \begin{array}{l} [+I \\ [+II] \\ \\ [+I \\ [+III] \\ \\ [+II \\ [+III] \end{array} \right\} \rightarrow [-SING]$$

In lieu of (64d'), I have chosen the ad hoc (64d), which has exactly the same effect.

9. I can find no language which makes a superficial distinction between the plural case of (65d), "you two or more persons who are being addressed", and (65e), "you who are being addressed together with the one or more persons not present who I am also talking about". The parallel distinction in first person plurals represented by (65b) and (65c) is, of course, quite commonly made on the surface,

as in Algonkian, yet it seems to be neither more nor less obvious semantically. If it turns out that second person plurals are nowhere differentiated, Jakobson's statement that "it is obvious that in grammar there is no conceptual opposition without a corresponding formal distinction" (1963: 270-71) requires qualification. In particular, we will have a clear case for the claim that languages eschew certain "conceptual oppositions" and favor others as candidates for "formal distinction".

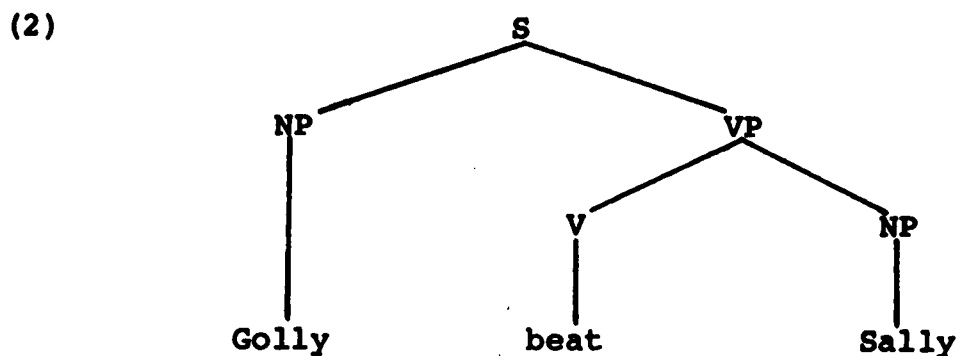
§7: FURTHER RAMIFICATIONS: SOME BROADER ISSUES

7.1. Structure-building by transformation

In one very fundamental way the grammatical analyses presented in this thesis are reactionary--closer, or at least apparently so, to the kind of analyses found in Syntactic Structures (1957) than to those of Integrated Theory (1964) or Aspects (1965). To illustrate, I have maintained in §3 that the passive transformation operates on an underlying phrase structure which is the same as the phrase structure of an active declarative. It is important to notice that the underlying representation of an active and a passive are not identical in my analysis, since the active has [+TOPIC] specified on the deep structure subject NP and the passive has it on one of the object NP's; the distinction between underlying phrase structure and underlying representation is crucial. Furthermore, in §5, I have maintained that clefting operates on an underlying phrase structure which is also no different than the phrase structure of an active declarative, the representation differing in the specification of some NP as [+FILL] for the cleft sentence. That is, the underlying phrase structure for the active declarative (1a), the passive (1b), the cleft (1c) and the passivized cleft (1d) is (2):

(1) (a) Golly beat Sally.

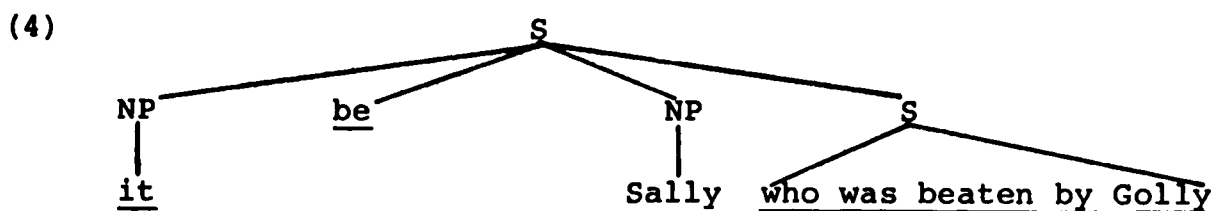
- (b) Sally was beaten by Golly.
 (c) It was Golly who beat Sally.
 (d) It was Sally who was beaten by Golly.



The underlying representations for (1a-d) differ by the feature specifications shown in (3a-d) respectively, where each member of (3) represents the terminal string of (2):

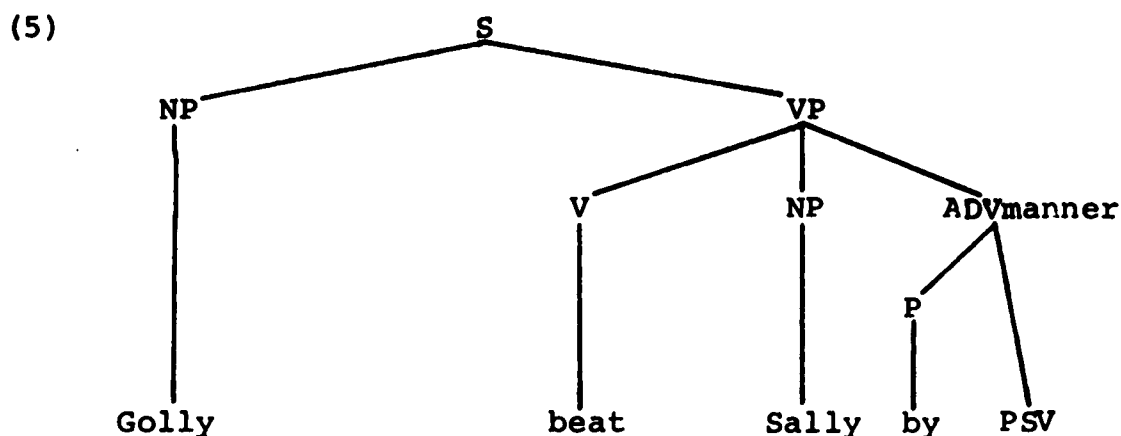
- (3) (a) Golly beat Sally.
 [+TOPIC]
 (b) Golly beat Sally.
 [+TOPIC]
 (c) Golly beat Sally.
 [+TOPIC]
 [+FILL]
 (d) Golly beat Sally.
 [+TOPIC]
 [+FILL]

To take the most complex case structurally, given the P-marker (2) with the feature specification (3d), the much more complicated structure (4) will be derived by transformational rules:



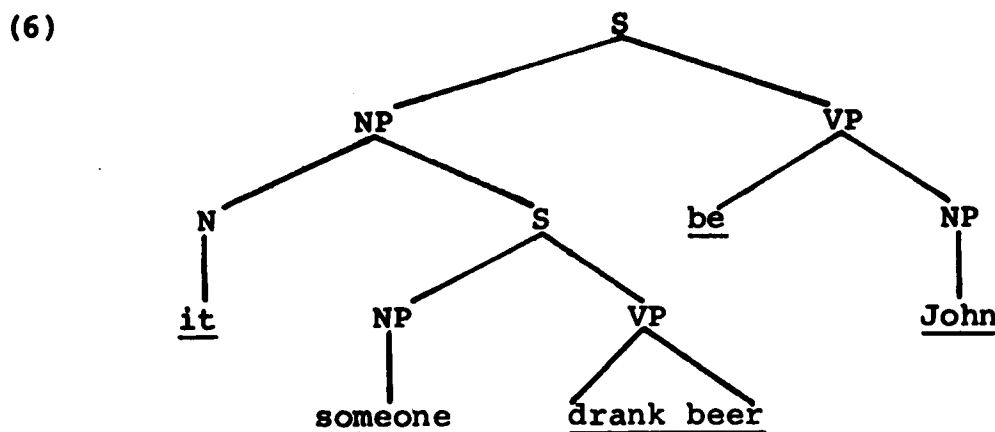
Such structure-building by transformation is prohibited in the standard theory. I want now to examine the motivation for such a prohibition and to discuss an undesirable consequence it has for grammars.

Actually one searches in vain for explicit comment on the structure-building prohibition. As is well known, the original formulation of the English passive (Chomsky 1957: 42-43), which introduces phrase structure transformationally as I have outlined in §3, was first challenged by Katz and Postal (1964: 72-73), who proposed the underlying structure (5) for the passive, which is, by contrast, structure retaining:



However, their motivation for such a deep structure did not include an appeal to the prohibition, notwithstanding the claim of some recent writers (UESP 1969: 844). The Katz and Postal proposal was accepted by Chomsky (1965: 103-05), still without appeal to the prohibition. However, apparently the implicit principle of structure retention in the passive reanalysis has been received as dogma and generalized, since many--indeed most--subsequent analyses observe it.

For example, Lakoff (1965: F40-41) would derive cleft sentences from underlying complement structures like (6)¹:



After extraposition and some other fairly direct rules, this becomes the surface structure (7):

(7) It was John who drank beer.

In this analysis, all of the phrase structure for (7) is present in the 'more basic' configuration of (6).

One problem that is readily solved by the structure-building prohibition is the assignment of constituent structure to transformationally inserted elements, since, of course, there can be no such elements (but cf. §7.2).² Under the prohibition, derived structure is, in effect, anticipated in the underlying P-marker, and the transformations merely move constituents into slots where the correct phrase structure is already present, as when the deep structure subject NP replaces the dummy PSV in (5).

On the other hand, consider what generative theory has given up in order to solve the problem of derived structure. One of the fundamental contributions of generative theory to linguistics is what C.I.J.M. Stuart calls "the

transformational principle" (in symposium, LSA Summer Institute, 1966) which permits "an ordering among the sentences of some language, L, by establishing classes of subsets, where--after Chomsky (1957)--L is considered as a set of sentences." The transformational principle has particular theoretical (and historical) significance in light of the fact that pre-generative linguistics made provision for the structure of utterances (the constituent, the morpheme, the phoneme) but not for the structure of the set of utterances (syntactic structures). Harris (1954: 45-49; 1957) was among the first to propose such a principle, which he viewed as follows:

When we proceed to describe the structure of sentences (i.e., the choices of morphemes that occur in a sentence) in terms of these classes [N, V, etc.], we find that the work is of manageable proportions. In the sentences of any given language, only certain sequences of classes ...will be found; and these sequences which constitute the sentences can be described as the products of a small number of elementary class sequences (constructions) which are combined in certain storable ways. (1957: 156.)

On the occasion of the first forum on generative theory, Chomsky (1958: 211) prefaced his exposition with remarks on "a serious inadequacy of modern linguistic theory, namely, its inability to account for such systematic relations between sentences as the active-passive relation." His proposal for redressing this inadequacy was, in essence, the transformational principle. Similar remarks are not uncommon in the early literature (Chomsky 1957: 46-48; Lees 1957: 387-88; 1963: 2-3; Postal 1964b: 181-86). My point is that a structure-building prohibition weakens the utility of the transformational principle by obscuring the systematic relations between syntactic structures in some instances.

For example, the Katz and Postal proposal for passives, (5) above, implies a closer relation between a passive like (8a) and a declarative with a manner adverbial like (8b), than between the passive and its corresponding active, insofar as the former pair shares an identical deep phrase structure and the latter pair does not:

(8) (a) Sally was beaten by Golly.

(b) Golly beat Sally brutally.

Surely the systematic relationship should obtain not between (8a) and (8b), but between (8a) and (9a), and between (8b) and (9b):

(9) (a) Golly beat Sally.

(b) Sally was beaten brutally by Golly.

Under the structure-building prohibition, the possibility of relating a cleft sentence like (1c) to its corresponding active declarative (9a) is even more remote.

Actually, there is a possibility of retaining both the prohibition and the transformational principle within the theory. Kac (1969: 145-46), in a two-page note which is the only other critique of the prohibition that I know of, assumes--incorrectly, I believe, in view of recent practice--that both are in fact operative. He states the transformational principle P1 and the prohibition P2 in the terms quoted as (10):

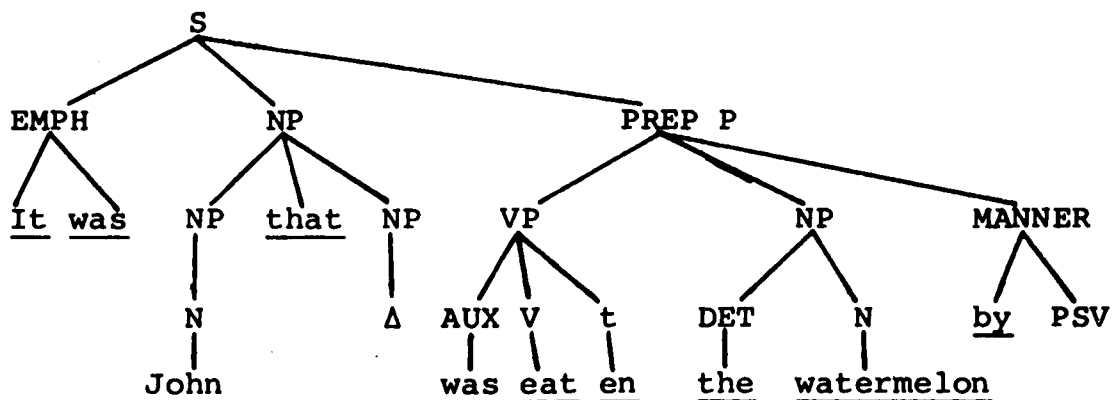
(10) (P1) Sentences which paraphrase each other have the same underlying structure.

(P2) Underlying structure are so constrained as to limit transformations to obligatory substitution or deletion operations.

However, attempts to adhere to both P1 and P2 have some fairly ludicrous consequences, as Kac points out. For example, if one maintains that actives, passives and clefts are systematically related--"paraphrases" in Kac's terms--then according to P1 they must have the same underlying structure. Further, it follows from P2 that the underlying structure which they share will necessarily include the phrase structure appropriate for the passive agentive, the cleft relative, and so on. Thus, (12) must be the common underlying P-marker for all of (11) (Kac 1969: 146):

- (11) (a) John ate the watermelon.
 (b) The watermelon was eaten by John.
 (c) It was John that ate the watermelon.
 (d) It was the watermelon that John ate.
 (e) It was the watermelon that was eaten by John.
 (f) It was John that the watermelon was eaten by.

(12)



The consequences for a grammar which maintains P1 and P2, and which therefore accepts the analysis (12) for structures like (11), are threefold, as Kac sees them: first, descriptions like (12) are plainly counter-intuitive sources for structures like (11a); second, structurally complex constructions are more 'basic' than simpler constructions in the sense that they require fewer derivational steps for their generation: that is, "simple active declarative sentences, a well-entrenched English sentence type, must be seen as derived by a series of operations serving only to delete material associated with far less well-entrenched sentence types"; and, third, either the interpretive rules of the semantic component must accommodate the surfeit of semantically irrelevant structure in a P-marker like (12) or the grammar must include "a set of ad hoc conditions specifying the relevant subtree" (Kac 1969: 146).

In sum, whether the grammar maintains both the structure-building prohibition and the transformational principle or the former at the expense of the latter, the consequences are undesirable. The authors of the UCLA Syntax Project (UESP 1969: 844) purport that the structure-building prohibition has value as a constraint upon the grammar. Yet it is difficult to see how structure-insertion with motivated limitations is less constraining than structure-deletion. Constraints, of course, there must be, but one expects that they will be formulated without violence to the foundations of the theory.

Basically, one must agree with the reasoning which lies behind the structure-building prohibition, if one can extrapolate from the analyses of Katz and Postal which apparently gave rise to it. Katz and Postal were concerned to include all semantically relevant information in deep structures, as a premise for their principle that transformations do not contribute to meaning. Anyone who would maintain the Katz-Postal principle must also provide deep structures which exhaustively include all the semantic information. Hence one must disagree with Kac's 'solution' for eliminating P2, namely, that "transformations become uniformly optional and allow for the full range of operations (i.e adjunction, permutation, etc.)." Such a solution is truly reactionary, backtracking as it does to the relatively semantics-free model of Syntactic Structures. The alternative that underlies my analyses seems to be more adequate. I have permitted structure-building only as a consequence of underlying configurations of syntacto-semantic features. Thus be + en and by are introduced transformationally into a structure only when it includes [+TOPIC] on a particular constituent. The semantic distinction of focus between active and passive constructions is therefore overt in the deep structure, but the superficial syntactic markers of the passive are introduced later. Similarly, the it + be and relative elements of cleft sentences are considered as superficial markers of an underlying declarative with a certain constituent specified [+FILL]. I claim that

P-markers characterized in this way provide more semantic information and less irrelevant phrase structure than any of the alternatives so far considered, and that they thereby facilitate semantic interpretation on both counts while maintaining an intuitively correct account of the systematic relations among syntactic structures.

7.2. The problem of derived structure assignment

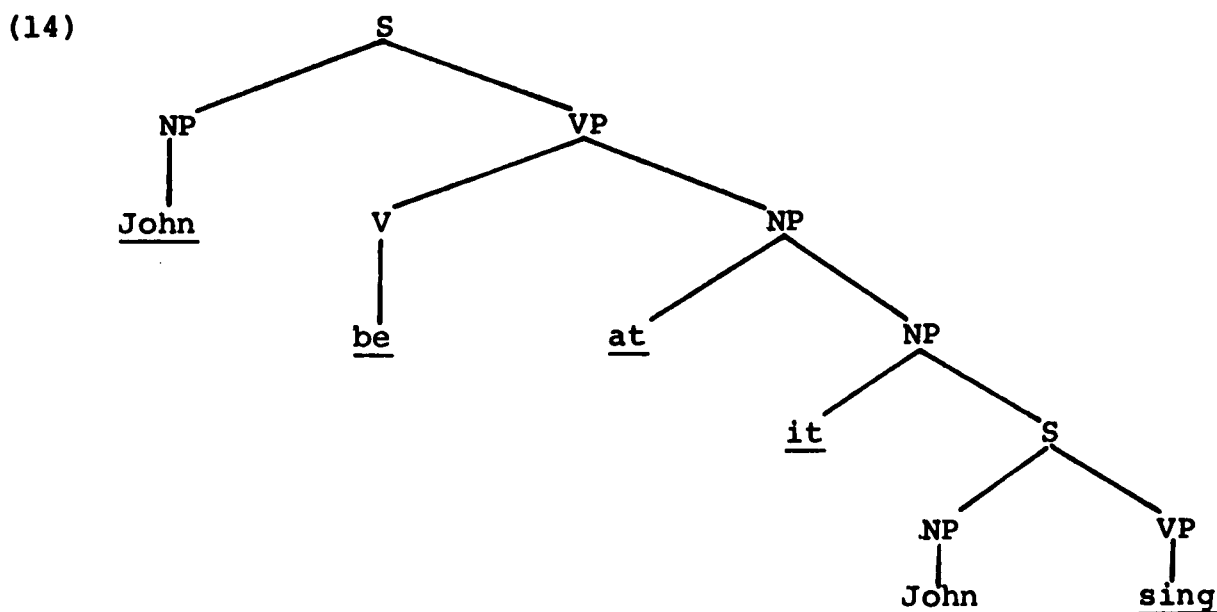
I want to dispute a point which I allowed to pass unchallenged in the previous section, namely, the claim that the structure-building prohibition solves the problem of assigning the correct structure to derived constituents. Given a conception of grammar in which that prohibition can be rigorously maintained, the claim is simply tautologous. However, I question that such a grammar is possible. Throughout §6 I suggested a number of advantages for the segmentalization of minor categories like AUX and DET in a grammar. Furthermore, I followed Prideaux in proposing that a grammar which permits segmentalization can adequately accommodate phenomena like plurality and definiteness, for which there are presently no other viable proposals. This thesis has added focus to the list of such phenomena. Insofar as segmentalization is an integral part of the standard model, the problem of derived structure assignment is still with us.

Now I want to go a step further and present three arguments which demonstrate that structure-building must be an integral part of the standard theory. The first

argument is Prideaux's evidence (1970: 7-9) that of three viable proposals for handling verbal aspect, only the proposal for features which are later peeled out as a node, that is, only the proposal which involves structure-building, is adequate. The two best known proposals for aspect make use of grammatical apparati other than segmentalization. Chomsky (1957: 39; 1965: 107) incorporates it into the phrase structure rule which rewrites AUX, as follows:

(13) AUX → Tense (Modal) (have + en) (be + ing)

This rule neatly accounts for the order of the AUX elements, but it cannot account for the restriction upon progressivization in stative verbs as explicated in §6.3.1. above. On the other hand, Ross (1969a) has proposed that aspect, along with other AUX elements, be generated as V's, thus requiring embeddings for all VP's which include any of the elements on the right side of the arrow in Chomsky's rule (13). For example, a sentence like John is singing has the underlying representation (14):



However, Prideaux points out two major problems with Ross's analysis. First, in contrast to Chomsky's proposal, Ross provides no way of correctly determining the order of the AUX elements. There is no way of blocking strings like (15):

(15) (a) *John is maying sing.

(b) *John is 'singing have.

And, second, the proposal cannot block VP's with no MV element, since the distinction between MV and AUX is obliterated in the phrase structure rules. That is, there is no way of blocking strings like (16):

(16) (a) *John might Hortense.

(b) *John was (do)ing yesterday.

The segmentalization proposal of §6.3.1, on the other hand, does not raise any of these problems.

A second argument that structure-building must be permitted comes from expletive constructions like (17b):

(17) (a) Some students are there.

(b) There are some students there.

The systematic relation between (17a) and (17b) is so transparent that "it is implausible that there is present in deep structure" (Bresnan 1970: 122), and any alternative to structure-building in the derivation of (17b) "requires some artificiality" (Chomsky 1968: 26). See §4.2 for a focus analysis of expletives.

A third argument that an adequate grammar must permit structure insertions by transformation is based on the fact that certain constructions include in their surface

structure formatives which can only be classed as grammatical anomalies. Such formatives, I would argue, cannot be motivated in the deep structure. Consider constructions like the following, which I will call 'verbal hyperfocus':

(18) (a) Did he ever run fast.

(b) Was he ever stupid.

(c) Did he ever clobber that sonuvabitch.

I know of no analyses, traditional or generative, of this construction, which occurs pervasively in North America but apparently occurs nowhere else.³ My point in citing it here is to question any proposed analysis which, in order to prohibit structure-building, would claim that the formative ever should be represented in the deep structure. The formative ever in (18) cannot have the same source as the ADV ever which occurs in negatives and interrogatives (cf. Klima 1959: 280-81),⁴ since, unlike the ADV, which is permutable in the expected ways, as illustrated in (19) and (20), ever occurs in fixed order in (18):

(19) (a) There won't ever be another party.

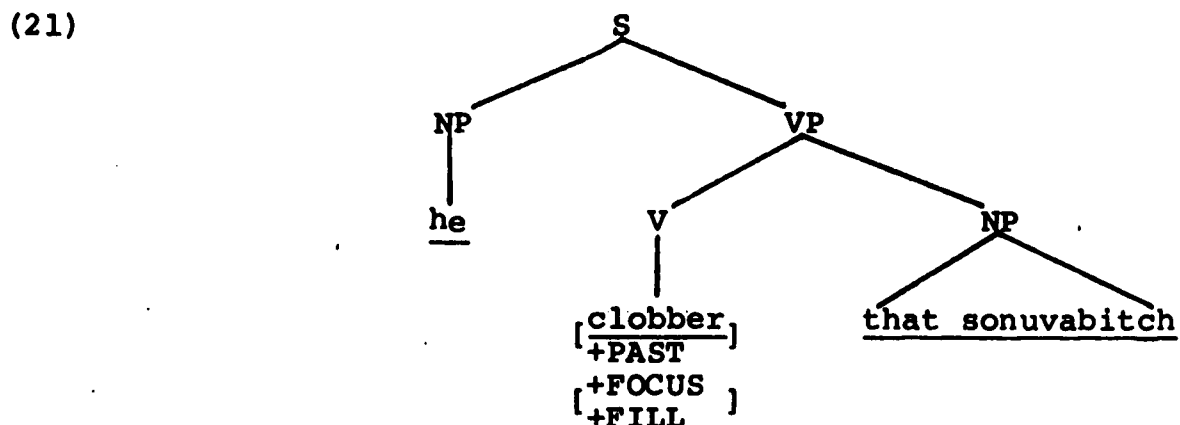
(b) There won't be another party ever.

(20) (a) Did he ever run fast?

(b) Did he run fast ever?

There is also a contrast between the sense of "indefinite time" which ever contributes to (19) and (20) and the semantic vacuity of ever in (18). All in all, ever in (18) is a grammatical anomaly in English, perhaps most convincingly explicated as a particle which signals emphasis on the MV. In terms of deep focus, structures like (18) can be derived

from underlying representations such as (21):



As an intermediate derivation, the feature [+FOCUS] on the V triggers the verb focus transformation outlined in §3.4.2 which in the absence of the specification [+FILL] would result in the surface structure He DID clobber that sonuvabitch. However, the feature [+FILL] triggers the verbal hyperfocus rule, which front-shifts did and inserts the particle ever in its place. Nothing crucial hangs on this analysis, except its implicit claim that the most plausible source for ever is a transformational insertion.

If, then, the grammar must permit derived constituent structure, the prohibition against structure-building cannot even be motivated in terms of the problem of structure assignment. Therefore, I submit that the only adequate proposal for derived structure assignment so far is that of Chomsky (1957: 73) cited in §3, which I repeat here for convenience:

- (22) If X is a Z in the phrase structure grammar, and a string Y formed by a transformation is of the same structural form as X, then Y is also a Z.

Yet a superficial consideration of segmentalization would seem to render impossible the implementation of Chomsky's derived structure condition, since nodes which are formed by peeling transformations (Y nodes in (22)) are not dominated by lexical categories, and cannot therefore be compared with nodes formed by phrase structure rules (X) to determine their common Z-ness. However, this need not be so, in view of the following considerations.

One of the usually disregarded problems in an explicit account of syntax is the necessity of providing appropriate boundary markers in the string which is input to the phonological component. The formal importance of boundaries is amply attested in Chomsky and Halle's work on stress (1968: 69-145) in which correct boundary assignment is crucial for the operation of the phonological rules. As a means of providing boundary assignment, I propose that lexical entries be marked as either affixes or non-affixes ([±AFX]), at least for those categories which are derived by segmentalization. Now word boundary assignment can be accomplished by a straightforward final-cycle transformation:

(23) WORD BOUNDARY ASSIGNMENT

SD:	X	[-AFX]	Y	
SC:	1	2	3	→
	#+1	2	3+#	

Cond: X and Y contain no [-AFX]

From the general lack of success in assigning boundaries in terms of phrase structure (cf. Chomsky 1958: 229;

Chomsky and Halle 1968: 12-14 merely assert that such boundaries are "automatically" present), I conclude that the feature [+AFX], or something equivalent to it, is required for this purpose no matter how much or how little segmentalization is carried out in the model. Affix boundary assignment is similarly facilitated:

(24) AFFIX BOUNDARY ASSIGNMENT

SD: X [+AFX] Y

SC: 1 2 3 +

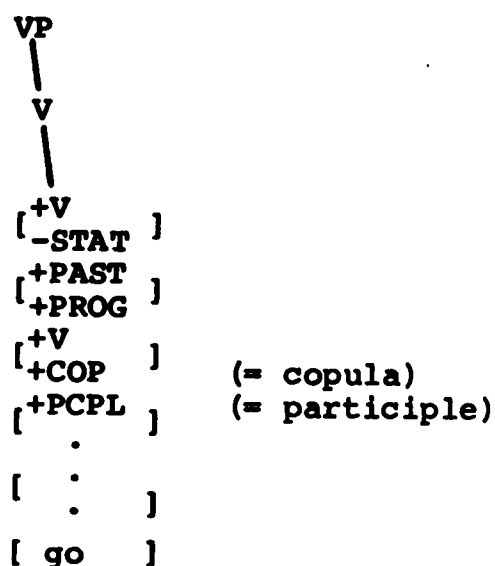
(a) 1 %+2 3 Cond. 1 and 2 are sister nodes

(b) 1 2+% 3 Cond: 2 and 3 are sister nodes

(where I use '%' to denote "affix boundary" instead of the more usual '+' to avoid confusion with the concatenation sign).

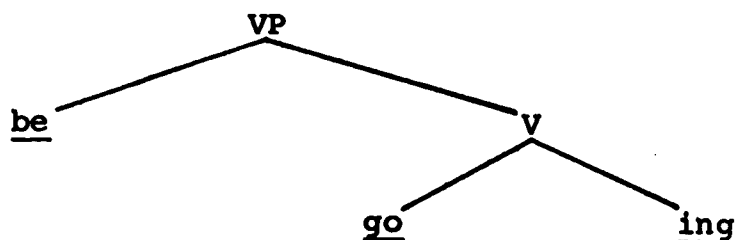
The inclusion of [+AFX] in the grammar can now be exploited to solve another problem of derivations, namely, the problem of node dominance. This problem arises particularly in the node formation by peeling rules of 'mixed' categories such as the progressive in English, which has a [-AFX] element be and a [+AFX] element -ing. Given the configuration (25)-- in which the feature matrix is considered to be an ordered array as proposed by Schaarschmidt (1969)--the progressive peeling rule must apply:

(25)



From this underlying representation, the peeling rule must derive the constituent structure (26), because be is itself an affixable and permutable formative, as indicated by the application of such rules as NEGATION (he wasn't going) and QUES (was he going?), although -ing is not:

(26)



Notice that the correct representation therefore must assign different dominance relations to the two nodes derived by the peeling rule. Notice further that this fact complicates the grammar if we maintain the usual assumption about node dominance in a derivation, viz, that a segmentalized node or a node inserted by permutation becomes a sister node of the node to which it is concatenated in the SC of the transformation. Under this assumption, it is

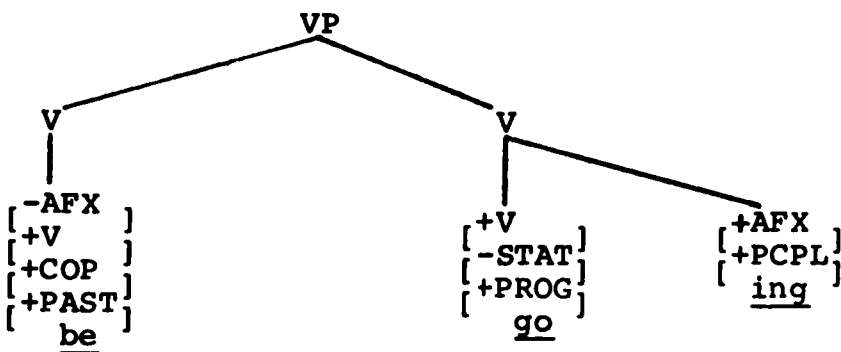
impossible to derive (26) in one step from (25) without some ad hoc conventions for adjusting node dominance. One alternative, of course, is to derive (26) in two steps, the first of which peels out both be and -ing to the left of V, giving an intermediate structure which is similar to that generated in the deep structure by Chomsky's AUX rule ((13) above), assigning what will be the correct node dominance for be to both elements. Then the second step permutes -ing to the right of V, assigning it the correct node dominance in so doing. Such a process is patently artificial, requiring an intermediate step which has little to do with the syntax of the language. It may be impossible to accomplish anyway, since be and -ing can only be peeled out if the CS of V is specified in the SD, and can only be assigned the correct dominance if the V and not its CS is specified as the sister node by the SC of the rule. To avoid these problems, I propose that the usual assumption for node dominance be replaced by the convention (27) which distinguishes between entries which are [-AFX] and those which are [+AFX] by incorporating into the grammar a generalization which is probably universal about the constituent structure of non-affixes and affixes. In (27), case (b) will be recognized as a perpetuation of the usual assumption for derivations in a generative grammar; case (a), called "node shooting" for obvious reasons, is an extension of the usual assumption:

(27) The node dominance convention

- (a) A node which is [-AFX] is dominated by a node which is its category symbol;
- (b) (i) A node which is [+AFX] becomes a sister node of the node cited in the SC;
- (ii) A node created by (a) becomes a sister node of the category symbol node which dominates the node cited in the SC.

For example, when the progressive peeling rule applies to (25), under convention (27) the two segmentalized nodes will have slightly different histories. By (27bi) the node realized as ing becomes a sister node of [+V], in the usual manner; the node realized as be, however, shoots out a node V in accordance with (27a), which then becomes a sister node of V in the usual manner, by (27bii). The derived P-marker is (28):

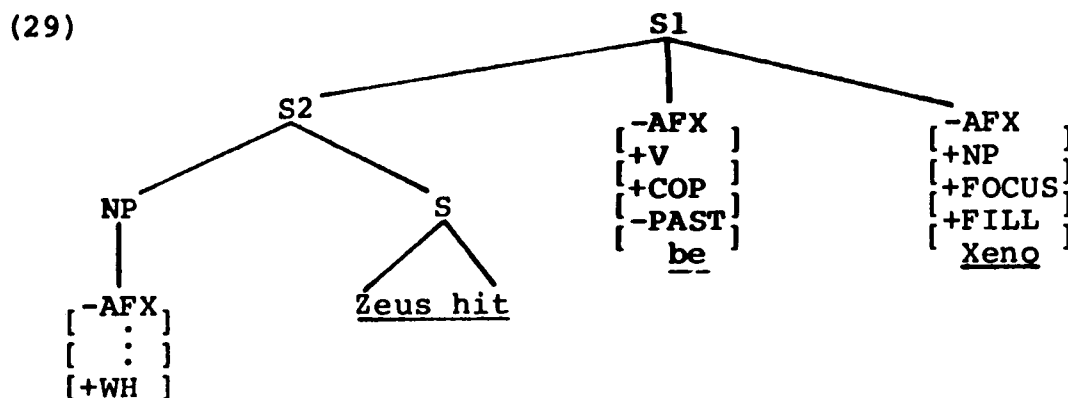
(28)



The incorporation of (27) permits a one-step derivation of the progressive in a natural way. In fact, it assures the correct node dominance for any segmentalized nodes, attaching determiners to NP's rather than to N's and modals to VP's rather than to V's. Moreover, under (27) all late rules which

sort out superficial word order can be formulated in terms of complexes of features--in effect, in terms of formatives rather than categories--with correct dominance relations assigned automatically. Finally, the new convention also provides category dominance for transformationally derived nodes, thus providing a basis for the implementation of Chomsky's derived structure condition.

By way of summarizing the proposals of this section, we return briefly to the analysis of clefting in §5.3. Recall that the proposed deep structure for cleft sentences is a declarative-type phrase structure with the hyperfocus specification, [+FOCUS, +FILL] or [+TOPIC, +FILL], at some node. To this deep structure TOPICALIZATION applies, deriving a structure in which the [+FILL] node is Chomsky-adjoined to the highest S of the deep structure. At this point, the PSEUDO-CLEFT rule can apply, Chomsky-adjoining be plus the lower [+FILL] constituent and specifying the topicalized [+FILL] constituent as [+WH]. Disregarding for the sake of illustration the node dominance convention, PSEUDO-CLEFT derives P-marker (29):



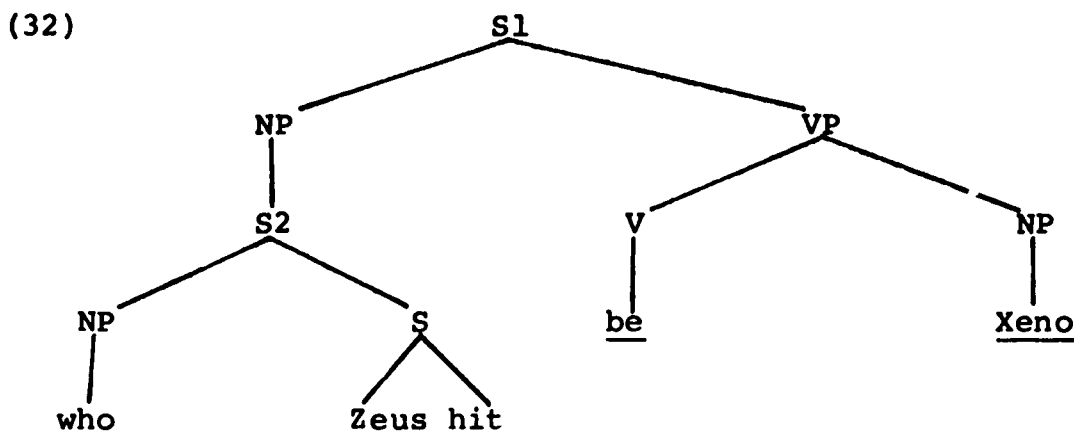
Actually, (29) will never occur as a derivation in a grammar which incorporates Chomsky's derived structure condition (22), because the S2 node will be dominated by NP on comparison with the phrase structure rule (30) (after Kiparsky and Kiparsky 1968: 6-7):

(30) NP → S

Furthermore, in a grammar which incorporates the node-shooting convention, the two [-AFX] constituents in S1 will receive category dominance as V and NP, respectively. The V + NP configuration thus derived in turn undergoes the derived structure condition upon comparison with the phrase structure rule (31):

(31) VP → V + NP

As a result, the counter-intuitive SD of (29) will never occur, and the PSEUDO-CLEFT rule instead correctly derives (32):



Together, the node-shooting convention and the derived structure condition have the effect of mechanically imposing the correct structure assignment on trees which have undergone structure-building by transformation. This

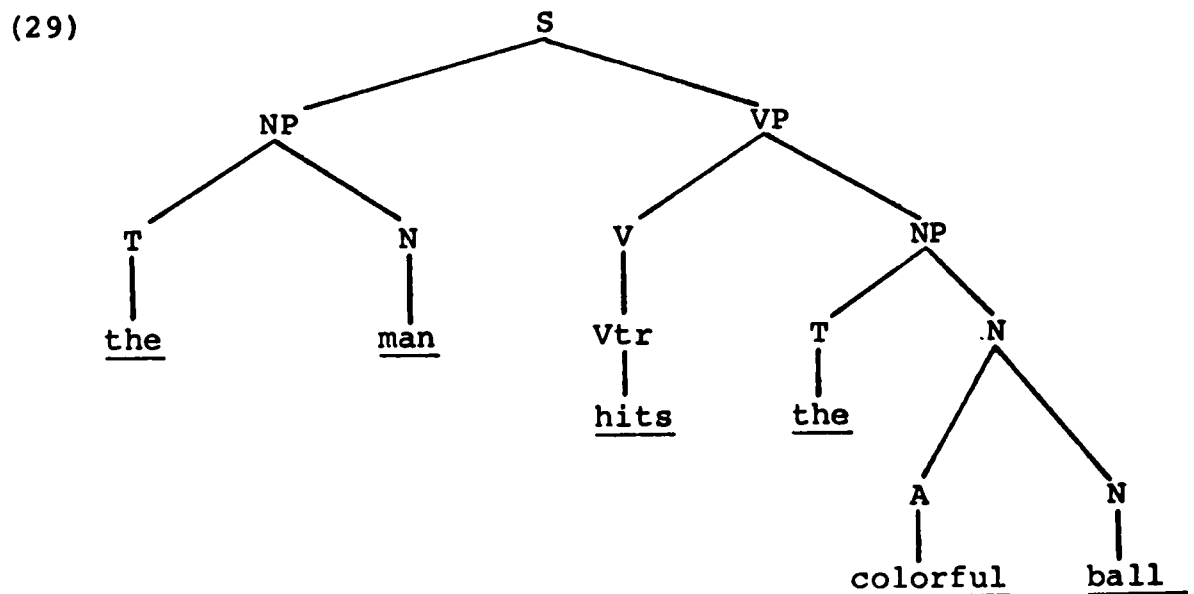
procedure is diametric to the modus operandi of the structure-building prohibition, in its strictest application. For example, Emonds (1969) proposes complex deep structures which include empty nodes wherever constituents can occur transformationally in a derivable surface structure, much in the manner of P-marker (12) above (see, for example, Emonds' proposal for indirect object constructions in §3.2). Thus, categories in Emonds' grammar are analogous to morphemes in structural linguistics, except that considerably more theoretical significance is attached to zero allomorphy by Emonds. Alternatively, in a grammar which incorporates the conventions here proposed, the theoretical construct of 'syntactic zeroes' plays no role.

7.3. A programmatic proposal for generating semantics

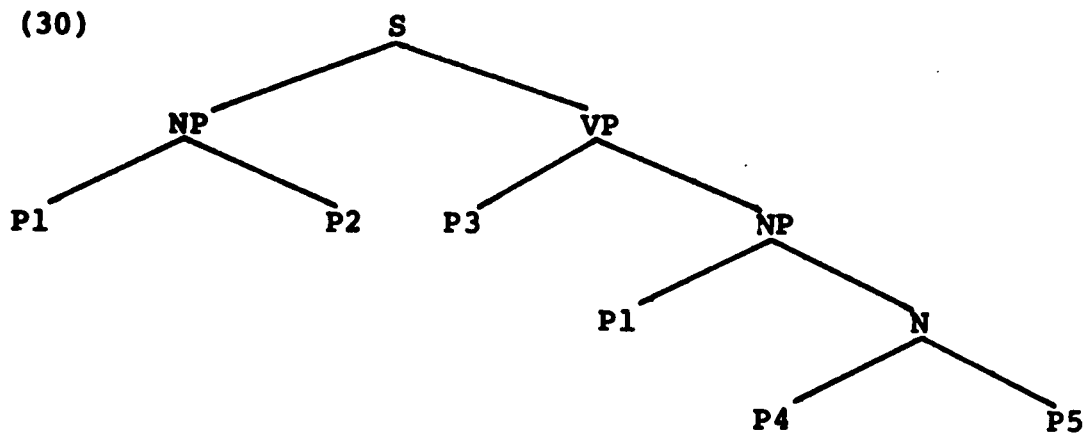
The conception of a grammar outlined so far in §7, in which the grammar incorporates kernel-like deep phrase structures and utilizes structure-building as a formal device, motivates underlying representations which are less like surface constituent structures than those of the orthodox standard theory. If we extend the grammar along these lines, the underlying representations may be seen as comprising an underlying phrase structure tree which expresses only the most fundamental relations between basic sentential constituents like 'subject' and 'predicate', and an underlying feature configuration which expresses the semantic nuances which obtain in a given sentence such as 'subject definiteness' and 'predicate modality'. At the same time

the feature configuration provides instructions to the transformational component which determine the surface syntactic form, as when the features [+FOCUS] and [+TOPIC] trigger permutations among the basic constituents and introduce structure.

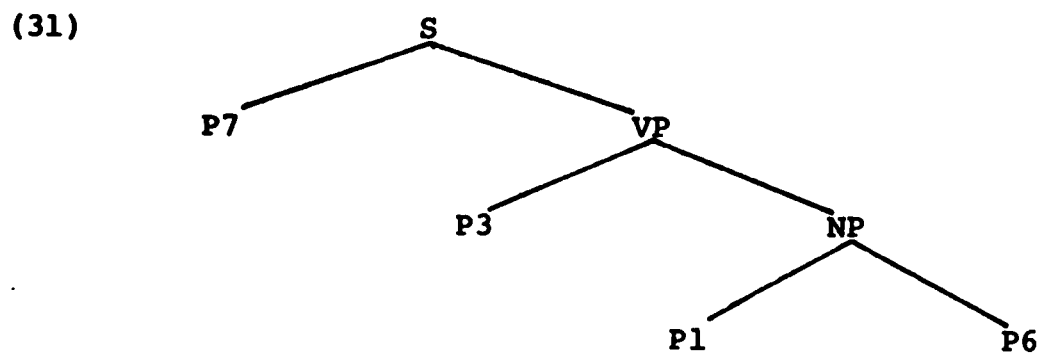
In this view, the underlying representation is very similar to the schema which results after the application of semantic projection rules in the Katz and Fodor proposal (1963: 503-13) to standard deep structures. In Katz and Fodor's proposal, the basic strategy is to eliminate phrase structure by amalgamating nodes in the P-marker and carrying along the semantic information of successive amalgamations. They demonstrate their proposal as it operates on the P-marker (29) (1963: 505):



By means of an instruction from the dictionary, (29) is re-represented as the schematized (30) which associates "sets of paths" (P1, P2, etc.) with nodes. The amalgamation procedure follows the paths of (30) (1963: 506):



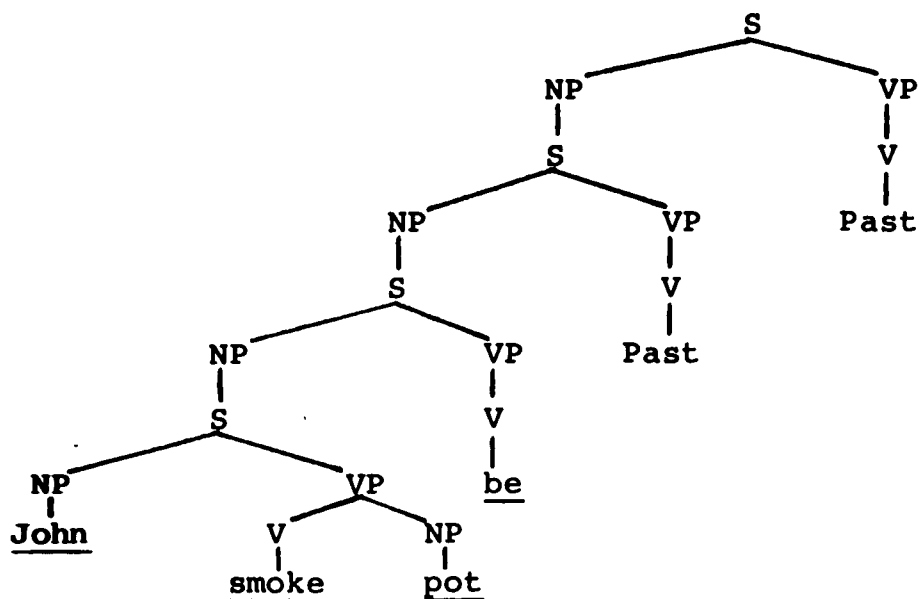
Successive projections reduce the phrase structure and automatically establish new paths, as in (31), where the amalgamation of P4 and P5 in (30) produces P6, and of P1 and P2 produces P7 (1963: 510):



Penultimately, projection rules obliterate the underlying syntactic structure such that it expresses the fundamental relations between the basic sentential constituents as in (32), thus arriving after considerable ado at the configuration which I have here proposed as the underlying deep structure. Furthermore, the semantic information carried along through successive amalgamations is stored as a set of feature-like terms, which for purposes of comparison with my own proposal I have arranged at the relevant path nodes in (32). I have omitted the un-feature-like dictionary

The direct generation of semantic structures has, of course, been a main thrust of generative linguistics within the past few years. Many linguists have pointed out that a more profound understanding of the underlying structures required as a "syntactic basis" for certain constructions tends to be "isomorphic" with the properties which characterize their semantic representations (see, for example, Postal 1970: 37). In general, the linguists working toward generative semantics have taken the opposite stand from that proposed here, inasmuch as they are inclined to denigrate features (McCawley 1969b: 25fn) and espouse phrase structure, particularly in various proposals for deriving constituents like AUX (Ross 1969a), tense (McCawley 1969c) and even "not" (McCawley, in lecture, Calgary 1970) as VP's, which requires that the underlying representation for any construction with a complex verb phrase have one or more embeddings. As a fairly conservative example, consider McCawley's representation for the sentence John has been smoking pot (1969c: 3):

(33)



While it is premature to attempt to weigh one proposal against the other with any confidence, I want to suggest that the feature representation has been summarily dismissed by generative semanticists without the benefit of a hearing. By the same token, multiple embeddings have been adopted by them in mind-boggling proportions, without any serious attempt to develop the rules which determine the order of constituents or the well-formedness of multiply embedded structures (cf. Prideaux's critique of Ross's proposal for AUX as VP in the previous section). By contrast, the proposal that underlying structures consist of a fundamental relational tree and feature sets would seem to have the initial--if wholly pragmatic--advantage of tying in fairly simply with the syntactic analyses developed within the standard theory during almost a decade, since it grows out of that theory directly and basically maintains its apparatus. It is an alternative which seems to me to be eminently viable.

7.4. On making a new blade

We gotta find a sharper blade
or have a new one made.

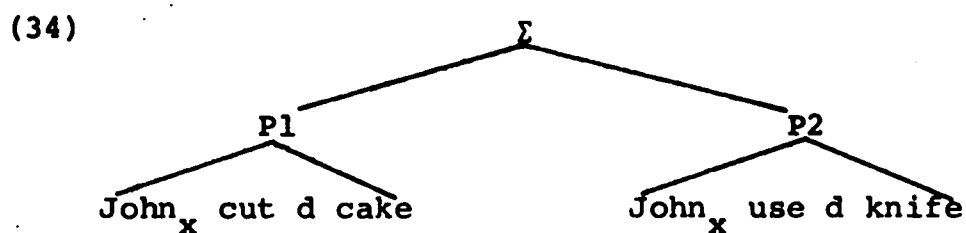
The poet Manuel's couplet reminds us that there are always two ways of proceeding. This thesis, particularly in §6 and §7, has devoted considerable space to 'honing the blade' of the standard theory to make it more nearly adequate to its task. There remains, however, Manuel's alternative.

The alternative of scrapping the standard theory altogether has been gaining adherants recently for a number of

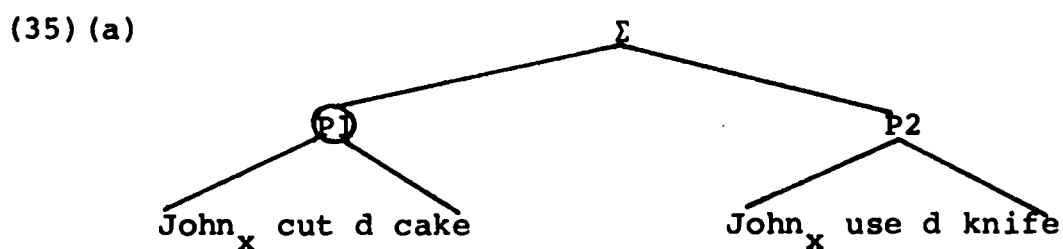
reasons. For one thing, some well-known syntactic processes which resisted generative analysis presumably 'until the facts were better understood' have proven to resist it even then; comparatives are a case in point (cf. Ross and Perlmutter 1970; R. Lakoff 1970). More binding, processes such as pronominalization, formalized once, have proven unformalizeable when better understood (cf. Bach 1970; Bresnan 1970). The proliferation of metatheoretical constraints (Ross 1967; Perlmutter 1970) calls into question the adequacy of the theoretical apparatus. Mathematical studies indicate that the notion of a universal base component is reduced to triviality by the discovery that the power of transformations is equivalent to an unrestricted rewriting system (Peters and Ritchie 1969a, 1969b; Peters 1970). The utility of phrase structure categories (Chomsky 1968: 25; Bach 1968), of a level of deep structure (Lakoff and Ross 1967; McCawley 1968b: 165-69), of the autonomy of syntax and phonology (Vanek 1969a; Zwicky 1969), and especially of syntax and semantics (McCawley 1969b; Lakoff 1969)--all have been thrown into considerable doubt, and all represent aspects of the most rudimentary framework on which the standard theory is built. To some, the standard theory is already beyond revision.

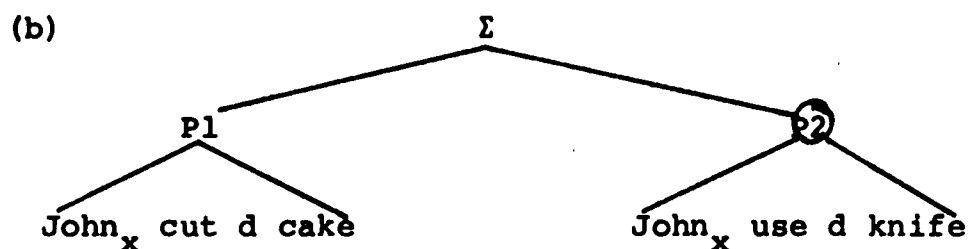
Of the several alternatives which are being proposed--all of which are formally undernourished at the present time--one is of particular interest with regard to focus. The work of Mario Saltarelli (1969) shares with this thesis

the conviction that focus must play a central role in an adequate theory of grammar. However, Saltarelli utilizes focus as a springboard for a new grammatical model which he calls "propositional generative grammar". Essentially, a propositional generative grammar consists of "an algebra of compositions" which is a finite state mechanism with a single loop (1969: 2fn), and "a set of general grammatical processes". The algebra of compositions has as its output a set of underlying propositions, which Saltarelli represents graphically as (34), where the propositions are John cut the cake (P1) and John used the knife (P2), and Σ is the category symbol for the set (1969: 2):



The set of general processes includes "focalization (or the choice of focus in a complex Σ of propositions)" (1969: 9). The two possibilities for focus in (34) are represented as (35a), where P1 is focalized, and (35b), where P2 is focalized:





Among the other general processes are "lexicalization (operating in at least two stages), and structuralization (or the assignment of syntactic structures to the underlying complexes of proposition)." After the operation of these two processes--and perhaps many more besides--the superficial structures in (36) are derived, where (36a) comes from underlying (35a) and (36b) from underlying (35b):

(36) (a) John cut the cake with a knife.

(b) John used the knife to cut the cake.

Although many details are glossed over and many more are not even touched upon in Saltarelli's paper, it is perhaps not wholly unfair to offer some comments on what appears to be a strength and what appear to be weaknesses in Saltarelli's proposal, although this critique is proffered with the proviso that such an appraisal--no less of the strength than of the weakness--is premature.

First the strength. Saltarelli offers as data several pairs of sentences which, discounting focus, are paraphrases (1969: 3-4, 6-7), including the following:

(37) (a) They placed cops around the building.

(b) They surrounded the building with cops.

(38) (a) John sent Mary messages by carrier pigeons.

(b) Carrier pigeons brought Mary messages from John.

(39) (a) John wrote the thesis in three months.

(b) It took John three months to write the thesis.

(40) (a) John opened the door with the key.

(b) John used the key to open the door.

(41) (a) John died of malaria.

(b) Malaria caused John to die.

(42) (a) John died in Vietnam.

(b) It was/happened in Vietnam that John died.

He points out that in these pairs (and also in (36)) there is a preposition/verb alternation which distinguishes the (a) members from the (b) members. To make the point clear, I list the alternants below:

	<u>preposition in (a)</u>	/	<u>verb in (b)</u>
(37)	around	/	surround
(38)	by	/	bring
(39)	in	/	take
(40), (36)	with	/	use
(41)	of	/	cause
(42)	in	/	happen in

From these data, he extrapolates the following generalization about English syntax: "In general in English prepositions alternate with verbs in their weak (not focused) propositions." Although he expends no energy to show that such an alternation is systematic, or that it is a pervasive rather than a restricted fact about English syntax, he may be correct. And if he is correct, I can foresee no natural way in which revision of the standard theory, which requires that

deep structures establish some constituent structure, can accommodate such a generalization. It may be, in fact, that the predilection with phrase structure has inveigled linguists from recognizing Saltarelli's insight earlier. The discovery of a widespread, systematic verb/preposition alternation conditioned by focus would constitute--it seems to me--a strong argument in favor of some version of generative semantics, if not for propositional generative grammar specifically.

On the other hand, if the standard theory suffers from too much phrase structure, surely a theory like Saltarelli's suffers from too little structure of any kind. The underlying propositions, as exemplified by (34), are as yet simply structureless (see 1969: 2-5fn). The processes of lexicalization and structuralization by which propositions are transformed into syntax are uncodified; as yet, they have as much in common with legerdemain as with linguistics. Focus assignment is unformalized. One suspects that further developments will eventually lead propositional grammar to the very problems which the standard theory is contending with right now.

In short, propositional grammar holds out the promise of fresh insights into grammar by approaching its data from a new viewpoint. Whether or not that promise can be fulfilled will be determined when its adherents face up to the sober tasks of rendering it formal and explicit. Until then, it is not unlikely that the best available grammar

will be a revised version of the standard theory, and the most productive work on focus will be couched in its terms. This thesis represents a step in that direction.

FOOTNOTES

1. Cf. Fischer (1968: 2-3) for a critique of Lakoff's proposal.

A particularly clear example of the kind of argument that has come into grammatical analyses with the structure-building prohibition is provided by the following passage from Kaye (1968: 48; emphasis added):

"We have argued earlier that these nominalizations [in Desano] are NP's in the surface structure. They cannot be separate dictionary entries. We have just shown that they cannot be generated in the base. They must therefore be derived transformationally. Since under the present theory transformations do not add structure to what is generated by the base, we assume that the underlying structure of these nominalizations must be dominated by an NP. For the remainder of this paper we will argue that these nominalizations are cases of nominalized relative clauses."

I have no objection whatever to Kaye's ensuing analysis of these structures. However, I would argue that, logically, an appeal to a formal constraint like structure-building should be the result of grammatical analysis rather than a premise of that analysis.

2. Note that structure-building under the guise of Chomsky-adjunction has been tolerated, even advocated, by those who have otherwise practised the prohibition. My comments are relevant to transformationally inserted constituents rather than to transformationally derived constituents--if, indeed, such a distinction can be construed meaningfully.
3. The distribution of this construction, according to some informants, may be more restricted than I have indicated. While it undoubtedly occurs in every sector of Canada and the United States, it seems to have peculiar regional restrictions which are sociolinguistic in nature. One native of the Pacific northwest says it is restricted to males, though it sometimes issues from the mouths of "coarse women" as well. A Texas native says that it is invariably preceded by an exclamation like "Wow!" and "Boy!" in his dialect. It is apparently not germane to any region in the British Isles, and one Scotsman reports that it is considered "barbarous" when spoken by Americans over there.
4. The ADV ever has a somewhat wider distribution in literary English, where it occurs as a synonym of always. Cf. Kurath's tribute to Prokosch in the preface to Prokosch 1939: "[Prokosch] was ever hospitable to the ideas of other scholars and enjoyed nothing more than a clear-headed vigorous discussion of such problems."

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