# A PROPOSAL CONCERNING ENGLISH PREPOSITIONS

CHARLES J. FILLMORE

The Ohio State University

In chapter 2 of Aspects of the Theory of Syntax,[1] Professor Chomsky points out the essentially relational nature of such grammatical concepts as 'subject' (of a sentence) and 'object' (of a predicate phrase) as opposed to the categorial nature of such notions as 'noun phrase' or 'verb'. According to Chomsky, these notions can be reconstructed in formal grammars by introducing category symbols in the base phrase structure rules which specify the underlying syntactic representations of sentences, and by defining the syntactic relations as in fact relations between category symbols within these phrase-markers. Thus, 'sentence', 'noun phrase' and 'verb phrase' are provided as category symbols by the base, with the notion 'subject' defined as a relation between a noun phrase and an immediately dominating sentence, and with 'object' (in one sense) defined as a relation between a noun phrase and an immediately dominating verb phrase.

My purpose today is to question the linguistic validity of the notions 'subject' and 'object' and to raise doubts about the adequacy of Chomsky's proposal for formally reconstructing the distinction between relational and categorial grammatical concepts.

My inquiry will lead to a proposal which removes the distinction between 'noun phrase' and 'preposition phrase', and to the suggestion that 'grammatical case' plays a less superficial role in the groundwork of grammars than is usually recognized.

To begin my argument, I should like to ask, concerning such expressions as in the room, toward the moon, on the next day, in a careless way, with a sharp knife and by my brother, how it is possible in grammars of the type illustrated in Aspects to reveal both the categorial information that all of these expressions are 'preposition phrases' and the relational information that they are adverbials of 'location', 'direction', 'time', 'manner', 'instrument' and 'agent'. It ought to be possible to recognize that a 'preposition phrase' whose head is a time noun has the syntactic relation 'time adverbial' to the constituent which dominates it.

Some of the phrase-structure rules for English that I have seen in recent months introduce adverbial notions such as 'manner' and 'location' categorially. Either the strictly categorial information is lost, or perhaps it can be rescued by having non-branching rules which re-write each of these categories as 'preposition phrase'; but in any case the formal distinction between relations and categories is lost and constraints on the further expansion of the 'preposition phrases' need to be provided in ways that have not yet been made clear.

Other grammars that I have seen contain rules allowing more than one 'preposition phrase' in the expansion of a single category. In the abbreviated form of such rules, all of these 'preposition phrases' are optional. Difficulties in establishing the constraints on expansion of these categories remain as before, but now a new difficulty in the collapsing of rules becomes apparent. If category A is to be rewritten as B followed by two independently optional Cs, as in (1),

(1)  $A \rightarrow B\ (C)(C)$ [2]

then there are two non-distinct ways of interpreting this rule. I may choose the first C and skip the second, or I may skip the first C and choose the second; but in either case I end up with the same thing, namely B + C. Certainly different choices in the base component ought to correspond to differences in the language. [3]

The obvious alternative within the present model is to introduce new structure so that, whenever a sentence may contain more than one preposition phrase, each one must be immediately dominated by a constituent of a different type. That was the choice I made for noun-phrases in my original analysis of indirect object constructions. [4] There the object was dominated by a node VP, the indirect object by a node Vtr.

There are, then, certain difficulties in the formal recognition of the distinction between categories and relations ( = 'functions'). I

should now like to ask whether the two grammatical relations which Chomsky discusses in this chapter--namely 'subject' and 'object'--are in fact linguistically significant notions on any but the most superficial level.

The deep structure relevance of syntactic functions is with respect to the projection rules of the semantic theory. The semantic component recognizes semantic features associated with lexical elements in a string and projects from them the meaning of the string in ways appropriate to the syntactic relations which hold among these elements. I do not believe that 'subject' or 'object' are to be found among the syntactic functions to which semantic rules must be sensitive.

Consider sentences (2) and (3).

(2) The door opened.

(3) The janitor opened the door.

The semantically relevant relation common to the two sentences is that between the subject of the intransitive verb and the object of the transitive verb, not between the subjects of the two sentences. In sentences (4) and (5)

(4) The janitor opened the door with this key.

(5) This key opened the door.

we find once again that there is no constant semantically relevant function shared by the subjects of the two sentences, but there is between the subject of (5) and the instrumental preposition phrase of (4). If the term 'ergative'[4a] can be used for the relation between the subject of an intransitive verb and the object of a transitive verb, a natural way to describe the syntax of the verb open is to say that it requires an ergative, tolerates an instrumental and an agentive. If the ergative is alone, it becomes the subject. If an instrumental accompanies the ergative, it becomes the subject, unless there is an agentive present. In a sentence with both instrumental and agentive, the agentive becomes the subject and the instrumental comes late, set off by means of a preposition.

Sentences (6) to (9) present further evidence that the syntactic relations with which semantic rules must operate are not simply those of subject and object.

(6) My foot hurt.

(7) The knife hurt.

(8) The knife hurt my foot.

(9) He hurt my foot with the knife.[5]

We have seen one case where a syntactic relation was overtly identified--the case of the non-initial instrumental marked with the preposition with. The next problem that must concern us is

the source of such prepositions.

In the typical case the ergative can become the subject only if instrumental and agent phrases are not present. There are situations, however, in which the ergative can be made the subject even in the presence of these other elements, that is, when the verb is passivable and when there is a passive marker in the auxiliary. When the ergative is up front, the agent phrase appears non-initially, preceded by the preposition by, as in (11).

(10)   The door was opened with this key.

(11)   The door was opened by the janitor.

When we consider nominalizations like (12)

(12)   The opening of the door by the janitor (with this key)

where the ergative is itself indicated by a preposition, in this case of, it begins to appear that our account must concern itself with the source of prepositions in general.

It is my hope that a satisfactory solution to the problems uncovered in the above remarks may be worked out by accepting the following proposals.

I: The major constituents of a 'sentence' (S) are 'modality' (Mod), 'auxiliary' (Aux) and 'proposition' (Prop). This is expressed in rule (13).

(13)   S → Mod⌢Aux⌢Prop

II: The constituent 'modality' consists of 'sentence adverbials', 'time adverbials', as well as interrogative and negative elements. I have no strong conviction that these various elements comprise a single constituent, but for the time being I shall assume that they do. For the remainder of the paper I shall also assume that the modality elements are optional and at any rate are not involved in the observations that I shall be dealing with. No further mention of them will be made here.[6]

III: The category 'proposition' includes the verb and all those nominal elements which are relevant to the subclassification of verbs. The relevant rule may be something like (14).

(14)   Prop → V (Erg) (Dat) (Loc) (Inst) (Ag)[7]

IV: All of the non-verb constituents of propositions are 'noun phrases' (NP). Notice rule (15).

$$(15) \quad \left\{ \begin{array}{l} \text{Erg} \\ \text{Dat} \\ \text{Loc} \\ \ldots \end{array} \right\} \rightarrow \text{NP}$$

Major syntactic functions, therefore, are introduced categorially. These elements are distinguished from true grammatical categories, however, in that their continued expansion is unary and
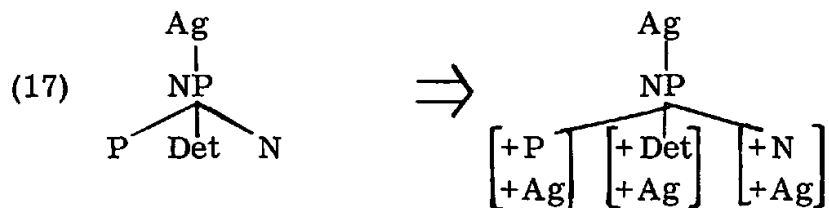
many-to-one.[8]

Borrowing from Tesnière, I shall use the term 'actant' for these elements which unarily dominate noun phrases.

V: Every noun phrase begins with a preposition.

(16)  NP $\longrightarrow$ P (Det) (S) N

VI: The lexical categories 'preposition' (P), 'determiner' (Det), and 'noun' (N) take by convention the name of the actant dominating their noun phrase as one of the features making up the complex symbols associated with each of these categories. The convention will begin filling in the syntactic features of complex symbol as follows:

(17)

$$\underset{\substack{| \\ \text{NP} \\ \diagup | \diagdown \\ \text{P} \quad \text{Det} \quad \text{N}}}{\text{Ag}} \Longrightarrow \underset{\substack{| \\ \text{NP} \\ \diagup | \diagdown \\ \begin{bmatrix}+\text{P} \\ +\text{Ag}\end{bmatrix} \begin{bmatrix}+\text{Det} \\ +\text{Ag}\end{bmatrix} \begin{bmatrix}+\text{N} \\ +\text{Ag}\end{bmatrix}}}{\text{Ag}}$$

VII: The selectional constraints associated with lexical categories serving given syntactic functions will be provided by syntactic redundancy rules. Rule (18) expresses the claim that agent nouns are animate.

(18)  $\begin{bmatrix}+\text{Ag} \\ \\ +\text{N}\end{bmatrix} \longrightarrow \begin{bmatrix}+\text{Anim}\end{bmatrix}$
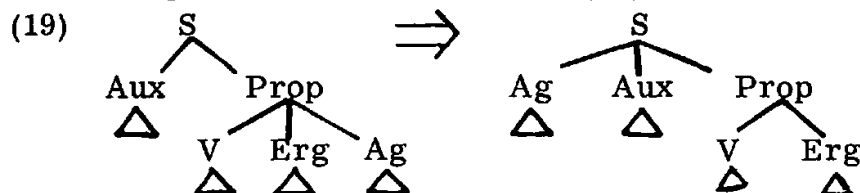
VIII: Some prepositions are filled in from the lexicon. Location prepositions (over, under, on, in, etc.) are introduced in this way, with some constraints. These prepositions bring with them semantic information.

IX: Some prepositions are assigned by inherent syntactic features of specific verbs. Thus blame requires the ergative preposition to be for, the dative preposition to be on; depend chooses on, object chooses to, etc.
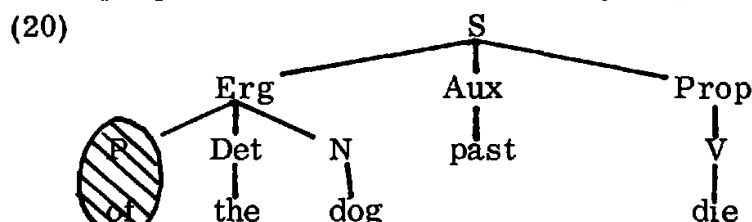
X: The remaining prepositions are filled in by rules which make use of information about the actants. Thus, e.g. the ergative preposition is of if it is the only actant in a proposition or if the proposition contains instrument or agent phrases; it is with otherwise. The instrument preposition is with just in case the proposition contains an agent phrase, otherwise it is by. The agent preposition is by.

XI: The subject of a sentence is selected, according to certain constraints, from among the propositional actants. A transformation places the noun-phrase selected to serve as subject to the left of the auxiliary phrase. For all sentences containing agentives, the agentive becomes the subject unless the auxiliary
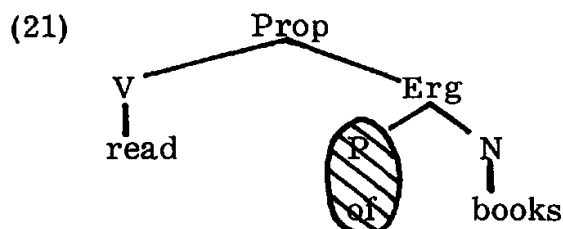
contains the passive element. Thus, (19)

(19)

```
        S                                      S
      /  \                  ⟹              /  |  \
    Aux   Prop                           Ag  Aux   Prop
     △    /|\                            △   △    /  \
        V  Erg  Ag                              V    Erg
        △   △   △                               △     △
```

XII: All prepositions are deleted in subject position. Thus, (20)

(20)

```
                        S
           _____/ | _____
        Erg            Aux            Prop
      /  |  \           |              |
     P  Det   N        past            V
        |     |                        |
       the   dog                      die
```

XIII: Some verbs are marked to delete the prepositions of the actants which immediately follow them. Thus, (21)

(21)

```
              Prop
      _____/      \
    V                Erg
    |              /   \
   read          P      N
                        |
                      books
```

XIV: There are contexts in which the preposition-deletion rules do not apply, as for example when the verb is nominalized, giving us such expressions as the death of the dog and the reading of books.

XV: With some verbs the choice of subject offers certain options. Thus we get either (22) or (23).

    (23) with bees swarm in the garden

    (24) in the garden swarms with bees

XVI: In most cases, post-verbal dative and ergative may be permuted. Examples without post-verb preposition-deletion are (24) and (25).

    (24)   talk about this to Dr. Smith

    (25)   talk to Dr. Smith about this

Examples with preposition-deletion are (26) and (27).

    (26)   blame for the accident on John

    (27)   blame on John for the accident[9]

XVII: In some cases the transformation which provides the subject of the sentence must be thought of as copying the selected actant in the position in front of the auxiliary. In ergative-locative sentences in which the verb is be, the ergative may become the subject, resulting in such sentences as (28).

    (28)   Some books are on the shelf.

Alternatively, the locative actant may be copied in the subject position, later pronominalized, yielding sentences like (29)

(29)    There are some books on the shelf.

When nominalized sentences are made subject in this way, either the right copy is deleted or the left copy becomes it. Notice (30) and (31).

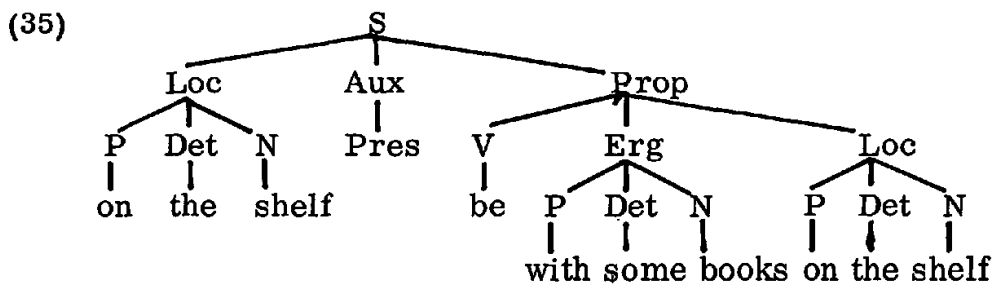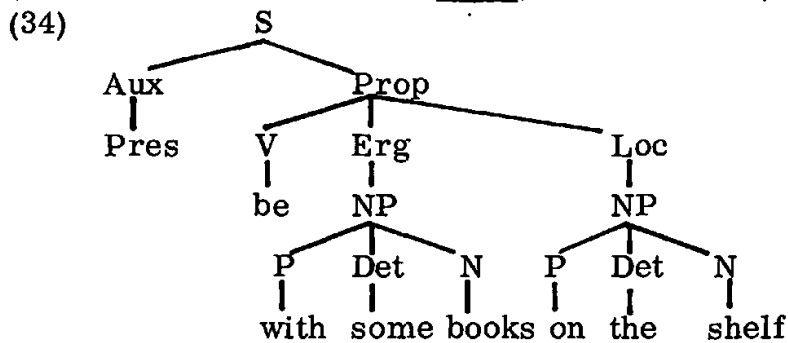(30)    That he is a liar is true.

(31)    It is true that he is a liar.

This solution may have an advantage over various recent proposals to handle expletive it by introducing it as a co-constituent with 'sentence' of some noun-phrases, because it handles in the same way examples like (30) and (31) as it does examples (32) and (33), taken from Jespersen.

(32)    He is a great scoundrel, that husband of hers.

(33)    It is perfectly wonderful the way in which he remembers things. [10]

XVIII: The verb have is the result of the juxtaposition of be and the ergative preposition with after a noun phrase. Whenever a locative or comitative is made the subject of a preposition whose verb is be, a copy is left behind. The noun phrase of the right copy is pronominalized eventually (unless, as in XVII, the left copy of the locative becomes there). Thus from (34) we get (35).

(34)

```
                    S
        _____/  |
      Aux         Prop
       |        __/|_____
      Pres     V   Erg         Loc
               |   |           |
              be   NP          NP
                 _/|\_       _/|\_
                P Det  N    P Det  N
                |  |   |    |  |   |
              with some books on the shelf
```

(35)

```
                    S
        _____/   |   _____
      Loc          Aux          Prop
    _/ |  \_        |       __/   |   \_____
   P  Det  N       Pres    V     Erg       Loc
   |   |   |        |      |    _/|\_      _/|\_
   on the shelf    be     P Det  N   P Det  N
                          |  |   |   |  |   |
                        with some books on the shelf
```

The sentence-initial preposition is deleted, the repeated phrase the shelf is pronominalized to it, the sequence be + with becomes have, and the end result is (36).

(36)    The shelf has some books on it.

The comitative also has the preposition <u>with</u>, but the comitative <u>with</u> does not blend with <u>be</u> to give <u>have</u>. Thus, in ergative-comitative sentences we find <u>have</u> only when the comitative is made the subject. Thus (37) and (38).

(37)  The children are with Mary.

(38)  Mary has the children with her.

With ergative-dative sentences the choice of subject seems to be determined by the verb, and copying-with-pronominalization does not occur. Thus, <u>belong</u> [as in (39)] requires the ergative as subject, <u>be</u> [as in (40)] requires the dative.

(39)  The books belong to Mary.

(40)  Mary has the books.

XIX: Verbs in the lexicon will be marked according to the propositional environments in which they may be inserted. The statement of these environments allows the expression of options. I use parentheses for options, linked parentheses for cases where, of two adjacent terms, at least one must be chosen. Thus the verbs <u>open</u> and <u>wake up</u> have the feature (41)

(41)  [ + ___ Erg (Inst)(Ag) ]

because we have sentences like (2) - (5) and (42) - (45).

(42)  I woke up.

(43)  An explosion woke me up.

(44)  My daughter woke me up.

(45)  My daughter woke me up with an explosion.

Verbs like <u>impress</u> have the feature (46).

(46)  [ + ___ Erg (Inst |Ag) ]

because we have the sentences (47) - (49).

(47)  You impressed me.

(48)  Your behavior impressed me.

(49)  You impressed me with your behavior.

Verbs like <u>hurt</u> will have the feature (50).

(50)  [ + ___ Erg (Inst |Ag) ]
      Stipulation: the choice + ___ Inst Ag is to be
      disallowed. [11]

because we have sentences like (6) - (9).

XX: Verbs like <u>kill</u> and <u>die</u> will be given the same semantic features, with the relation between the verb and the ergative being the same in both cases, the difference between them being that <u>kill</u> requires an agent or instrument to be present, <u>die</u> does not allow an agent to be present. [12]

A transformational grammar which incorporates the proposals which have just been sketched has several advantages over one which does not, in addition to the possibly unimportant one that

sentences do not turn out to need quite so much branching struc-
ture as might be otherwise assumed. One of these advantages is
the following:

Where in earlier versions of the grammar two statements were
needed for the relative clause reduction rule, now only one is
needed. The ergative preposition in sentences with dative, loca-
tive or comitative but without instrumental or agentive actants,
is with. The preposition has just this form in sentences like (51).

(51)  The garden swarms with bees.

but it is 'blended' with be when that verb is used, giving us (52).

(52)  The garden has bees in it.

In older versions of the grammar one relative-clause reduc-
tion rule was needed for relative-pronoun-plus-be, changing (53)
into (54),

(53)  the boy who is in the next room
(54)  the boy in the next room

and another rule was needed for relative-pronoun-plus-have,
changing (55) into (56).

(55)  the boy who has the red hat
(56)  the boy with the red hat

Furthermore, one of these rules merely deleted the identified
element, the other had to replace the identified element by with.

If it is true, however, that have is abstractly be + with, then
a single rule will now cover both of these cases. Thus (57) and
(58).

(57)  the boy who is in the next room
(58)  the boy who is with the red hat

We need to require merely that the rule for creating have follows
the relative-clause reduction rule.

More general advantages associated with these proposals re-
late to the interpretation of historical changes and cross-language
differences in lexical structure.

Certain historical changes in language may turn out to be pure-
ly syntactic, and, in fact, may pertain exclusively to the status of
particular lexical items as exceptions to given transformational
rules.[13] The English verb like did not change in its meaning or
in its selection for ergative-dative sentences, only in that it lost
its status as an exception to the rule that all fronted actants were
neutralized to the so-called nominative form.

Lexical differences across languages may not be as great as
we might otherwise have thought. It is generally said, for in-
stance, that English kill and Japanese korosu have different 'mean-
ings' as demonstrated by the fact that in English (59) is acceptable,

(59)  The fire killed the dog.

while the subject of <u>korosu</u> has to be animate.  If we see, however, that even in English <u>kill</u> and <u>die</u> have the same underlying semantic representation, the differences between the two situations appears to be rather superficial.  Both languages have words with the same meaning which can co-occur with ergative and instrumental.  English has two such verbs, one of which allows the instrumental phrase to become the subject.  The difference is no deeper than that.

The system must be able to meet various objections, and in ways that do not at present seem obvious.  I have argued, for instance, that since semantic rules do not need to be sensitive to the grammatical functions 'subject' and 'object', deep structure representations do not need quite as much structure as usually supposed.  The deep-structure reason for making the first division between noun-phrase and verb-phrase was mainly to have a separate immediate dominator for the noun-phrases that were to be defined as 'subject' and 'object'.  The added structure as far as the semantic component is concerned, is not needed.  The division between subject and the remainder of the proposition is apparently needed for phonological rules, but that is exactly what appears in the surface structure since the surface subject is directly attached to the node 'sentence'.  The problem is with co-ordinate conjunction.  If it is true that the constituent 'verb phrase' is needed for the rules governing constituent conjunction, then my grammar adds one more to the cases where it is surface-structure constituents, not deep-structure constituents, that take part in co-ordinate conjunction.

No mention has been made, you may have noticed, of predicate-adjective or predicate noun sentences.  I am willing to accept Postal's treatment of adjectives as sub-classes of verbs, but that suggests that I must modify my treatment of <u>be</u> as a verb.  For noun-<u>be</u>-noun sentences I have no suggestion, except that for one class of them the term 'essive' and the preposition <u>as</u> (which has certain exceptional properties) suggest themselves.  The number-matching requirement for predicate-noun sentences is a serious enough problem for <u>any</u> kind of transformational grammar which makes use of a context-free base.

Another order of difficulty is found in the treatment of certain manner adverbs, in that some of them seem to have a special relationship with the surface subject.  If manner adverbs are merely constituents of the sentence--or, possibly,of the proposition--then my effort to regard such pairs as <u>teach</u> and <u>learn</u>, <u>send</u> and <u>receive</u>,

etc., as synonyms, must fail. I would like to say, for example, that both <u>teach</u> and <u>learn</u> select the propositional environment (60).

(60) ___ Erg⌒Dat⌒Ag

although the conditions in which specific actants are optional are different for the two verbs. The only other differences between the two verbs are that <u>learn</u> requires the agentive preposition to be <u>from</u> and requires the dative to be the subject, while <u>teach</u> does not constitute an exception to either the preposition-selection rules or the subject-selection rules. Thus (61) and (62) have largely identical underlying structures.

(61) Mary learned French from John.

(62) John taught French to Mary.

The problem arises when we seek explanations for (63) and (64).

(63) Mary eagerly learned French from John.

(64) John eagerly taught French to Mary.

This problem too, fortunately, is just as serious in subject-object grammars, because the same problem is found in active sentences and their passive counterparts, as in (65) and (66).

(65) John willingly took advantage of George.

(66) George was willingly taken advantage of by John.

I suppose that my remarks can be summarized by saying that I do not regard all questions of grammatical case as belonging exclusively to the superficial structure of sentences. This may be true only of the 'nominative', under which term I subsume all those neutralizations of case distinctions that take place in noun-phrases that have been made subject, and of the 'genitive' which represents another kind of neutralization of case distinctions, one which occurs in noun-phrase modifiers derived from sentences.


Some Transformation Rules


1. Ergative fronting in intransitive sentences.

$$\text{SD.}\quad \text{Aux}⌒\text{V} - \text{Erg} - \begin{Bmatrix} \text{Dat} \\ \text{Loc} \\ \text{Com} \end{Bmatrix}$$

SC. 1-2-3 ⟹ 2-1-3

Note: The verb <u>belong</u>, which occurs in [___Erg⌒Dat], requires the application of this rule; <u>be</u> permits application of the rule except in [___Erg⌒Dat].

2. Locative and comitative "copying" in intransitive sentences.

$$\text{SD.}\quad \text{Aux}⌒\text{V}⌒\text{Erg} - \begin{Bmatrix} \text{Loc} \\ \text{Com} \end{Bmatrix}$$

SC. 1-2 ⟹ 2-1-2

3. Dative fronting in intransitive sentences.
   SD.   Aux⌢V⌢Erg - Dat
   SC.   1-2 $\Rightarrow$ 2-1
4. Left-copy pronominalization.
   SD.   Loc - X⌢Loc
   SC.   1-2 $\Rightarrow \begin{bmatrix} + \text{Loc} \\ + \text{Pro} \end{bmatrix}$ -2

Note: A generalization of this rule will hopefully account for other cases of 'inserted subjects'. The complex symbol $\begin{bmatrix} +\text{Loc} \\ +\text{Pro} \end{bmatrix}$ is unstressed <u>there</u>.

5. Ergative fronting in transitive sentences.
                 Aux
   SD.   [X⌢Be⌢En]  V - Erg - Y⌢(Inst |Ag)
   SC.   1-2-3 $\Rightarrow$ 2-1-3

Note: Certain verbs - the 'non-passivable' verbs - will be marked as incapable of satisfying the SD of this rule. This rule is inadequate in several respects. It fails to account for dative-subject passives, and it must have associated with it some device for preserving non-deletable prepositions, in order to take care of sentences like <u>It was looked at</u>.

6. Transitive sentence subject.
   SD.   Aux⌢V⌢X - NP
   SC.   1-2 $\Rightarrow$ 2-1

Note: This rule takes the last NP in Prop and moves it to the subject position. The last NP will be Ag if Ag occurs, otherwise Inst.

7. Rule introducing <u>have</u>.
                              Erg
   SD.   NP⌢Aux - be - [with - X ]
   SC.   1-2-3-4 $\Rightarrow$ 1-<u>have</u>-∅-4

Note: The requirement that Aux be preceded by NP leaves the form <u>be</u> after the "existential" <u>there</u>.

8. Right-copy pronominalization.
   SD.   X⌢NP⌢Y - NP' - Z
   SC.   1-2-3 $\Rightarrow$ 1-2+Pro-3
Condition: NP = NP'

9. Reflexive.
             Act:      Actj
   SD.   X⌢[NP]⌢Y - [NP] - Pro - Z
   SC.   1-2-3-4 $\Rightarrow$ 1-2 $[\begin{smallmatrix} +\text{Pro} \\ +\text{Refl} \end{smallmatrix}]$ - 4

Conditions: NP = NP', Act: $\neq$ Actj.
Note: Pronominalized elements are reflexive when they manifest

different syntactic functions. The cover-symbol 'Act' ('actant')
refers to immediate dominators of NP.

10. Pronouns

$$\text{SD.} \quad X - [P \frown Y \begin{bmatrix} \alpha \text{Sg} \\ \beta \text{Gender} \quad \text{Pro} \\ \ldots \end{bmatrix} - Y$$

$$\text{SC.} \quad 1\text{-}2\text{-}3 \Rightarrow 1 - \begin{bmatrix} +\text{Pro} \\ \alpha \text{ Sg} \\ \beta \text{ Gender} \end{bmatrix} -3$$

11. Subject preposition deletion

$$\text{SD.} \quad [P - X \frown Aux \frown Y$$
$$\text{SC.} \quad 1\text{-}2 \Rightarrow \emptyset\text{-}2$$

12. Ergative-dative permutation

$$\text{SD.} \quad NP \frown Aux \frown V - Erg - Dat - X$$
$$\text{SC.} \quad 1\text{-}2\text{-}3\text{-}4 \Rightarrow 1\text{-}3\text{-}2\text{-}4$$

Note: Rules 12 and 13 are generally optional.

13. Instrumental-agentive permutation

$$\text{SD.} \quad NP \frown Aux \frown V \frown X - Inst - Ag$$
$$\text{SC.} \quad 1\text{-}2\text{-}3 \Rightarrow 1\text{-}3\text{-}2$$

14. Object preposition deletion

$$\text{SD.} \quad X \frown V \frown \overset{\text{Erg}}{Dat} - [P - Y]$$
$$\text{SC.} \quad 1\text{-}2\text{-}3 \Rightarrow 1\text{-}\emptyset\text{-}3$$

15. Object preposition deletion

$$\text{SD.} \quad X \frown V - P - Y$$
$$\text{SC.} \quad 1\text{-}2\text{-}3 \Rightarrow 1\text{-}\emptyset\text{-}3$$

Note: Individual verbs will be marked with respect to the applic-
ability of rules 14 and 15. Send, e.g. is subject to both 14 and
15, blame only to 15, speak to neither.


FOOTNOTES

This paper was written while the author was receiving support
from the National Science Foundation under contract number
GN-174.

1 MIT Press, 1965, esp. 63-73.

2 Chomsky, ibid., 107, uses both alternatives in the same rule:
VP → V(NP)(Prep-Phrase)(Prep-Phrase)(Manner)

3 It should also be pointed out that the syntactic relation defined
as C-under-A is not unique in A just in case C was chosen twice.

4  Charles J. Fillmore, 'Indirect object constructions in English and the ordering of transformations', The Ohio State University Research Foundation Project on Linguistic Analysis, Report No. 1, 1r, 1962; reprinted, Mouton, 1965.

4a  Herein a slight violence is done to the traditional terminology. From the fact that in the so-called 'ergative languages', subject-of-intransitive and object-of-transitive have the same case, the word 'ergative' is used here instead of the more traditional 'nominative' to identify that case.

5  Problems very similar to those taken up in this paper, with very similar examples, are given in a quite dissimilar solution in George Lakoff's work On the nature of syntactic irregularity, Harvard University Computation Laboratory Report No. NSF-16, 1965.

6  For various reasons I am convinced that instead of treating negativity as an optional subconstituent of the optional constituent 'modality', it is better to introduce it as an obligatory constituent 'modality' a disjunctive element which is either negative or affirmative. This appears to be necessary because of various semantic rules whose effect is to reverse the negativity value of a sentence--changing affirmatives to negatives and negatives to affirmatives.  On these matters, see my 'Entailment rules in a semantic theory', The Ohio State University Research Foundation Project on Linguistic Analysis, Report No. 10, 1965, 60-82; also, my 'Deictic features in the semantics of come', to appear in Foundations of Language, 1966.

7  The abbreviations to the right of the arrow are for 'ergative', 'dative', 'locative', 'instrumental', and 'agentive' respectively. Other such elements [but I'm not sure whether they should be introduced within (14) or whether in fact rules for expanding Prop should provide several sentence-type formulas] are 'comitative', 'extent', 'benefactive', etc., and, of course, the recursive symbol S.  Presumably the concepts involved are among the substantive universals which a grammatical theory must specify.

8  It is very possible that the form of grammars which I am suggesting is at bottom one in which the underlying structure of a sentence is representable as a rooted tree with labeled nodes and labeled branches.  This would be equivalent to a phrase-structure grammar in which, beginning from S, all even-numbered branches are unary.

9  I first became aware of these properties of verbs like swarm

and blame (22), (23), (26), (27) in a paper on the prepositions for and with by Ohio State University graduate student James T. Heringer.

10  Jespersen, Otto, The Philosophy of Grammar, 1934, Norton Library reprint, 1965, 25f.

11  Obviously, then, the abbreviatory notation is inadequate. It is likely that syntactic redundancy rules of the type discussed by Chomsky [op. cit., 164-170] can be used to simplify the statement of these features in the lexicon, but for the time being the only method available to me is brute force.

12  The essential difference between the proposals presented in this paper and those of Lakoff appears to be that Lakoff seeks for 'synonymous' words identity of semantic reading and lexical base but not lexical extension (the last two terms are from Lakoff, op. cit., Chapter VIII, 6f.), whereas I seek only identity of semantic reading.

13  In Lakoff's terms, only the lexical extensions change, not the lexical base.