WORKING PAPERS IN LINGUISTICS NO. 10

Edited by

Charles J. Fillmore

Preface

All but one of the papers in this collection were written as term papers for a course in 'case grammar' offered by me in the 1970 Linguistic Institute at The Ohio State University. They represent the application of a version of the 'case grammar' model to a variety of syntactic problems in a variety of languages.

At first I intended to include a summary of the arguments and assumptions and rules that made up my contribution to the course, but in the press of other duties I found that impossible. In its place is a paper delivered at the 1971 Georgetown Roundtable on Languages and Linguistics, included here as the last item. It contains an abbreviated statement of the main assumptions of case grammar, enough at least to give persons who have read "The Case for Case" an idea of the ways in which the model has been revised. This paper was supported in part by Grant GN 534.1 from the Office of Science Information Service, National Science Foundation, to the Computer and Information Science Research Center of The Ohio State University.

The unconscionable delay in putting this collection in readiness was entirely the editor's responsibility, and apologies to the contributors are very much in order. A move across the country, at the time the papers were coming in, to a place where inadequate filing facilities were too great a challenge to my meager organizing abilities, is part of the reason for the unanswered mail, the lost

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manuscripts, the misplaced correction sheets, and other horrors.

It is hoped that the appearance of these papers in this form and at this time will be a contribution to the research of syntacticians of various persuasions, and that talk about the virtues or failings of the 'case grammar' model will for a while benefit from the examples, the insights, the mysteries, and the solutions that can be found in these pages.

C.J.F.

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Passives and Problems in Classical Greek and Modern English

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There is in English the well-known, if little understood, phenomenon whereby "three-place predicate" (or "indirect object") verbs can form two passives: (1) by taking the direct object and making it the subject (hereafter called for convenience the "accusative passive") or (2) by taking the indirect object and subjectivizing it ("dative passive"). In both cases the verb is put in its passive form. Hence:

(1) John gave Mary the book. (John gave the book to Mary.)

but either

(2) The book was given to Mary. (the accusative passive)
(3) Mary was given the book. (the dative passive)

Historically speaking passives such as (2), the accusative passive, have always been possible in English whereas dative passives are relatively recent.

A roughly similar situation obtained for classical Greek. From an active sentence (or more exactly its underlying structure) such as (4) one could derive either (5) or (6).

(4) ho Iōánnēs édōke tò biblíon têi Maríāi.
'(the) John gave the book (the) to-Mary'

(5) tò biblíon édoto têi Maríāi hupò toû Iōánnou.
'the book was-given to-Mary by (the) of-John'

(6) hē Maríā édoto tò biblíon hupò toû Iōánnou.
'(the) Mary was-given the book by (the) of-John'

The underlying structure of both (1) and (4), in terms of a theory of case grammar, would probably be (7),

(7) Verb Agent (Experiencer) Object Goal

where the Agent is the giver (John/Iōánnēs) and the Object the thing given (the book/tò biblíon).

With regard to the recipient, the choice of the underlying case is more cloudy. The present theory considers the recipient (Mary/ Maríā) to be the Goal of the action of giving which, indeed, it

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certainly is. However, if the recipient is a sentient being as in the above examples it is hard not to also equate him/her with the Experiencer case (hence the parenthetical Experiencer in (7) since the recipient is assumed to be taking part in the transaction (i.e. "experiencing" the giving) at least passively. This passive role helps account for the oddness of (8).

(8) I gave John the book but he wouldn't take it.[1]

---

[1]Unless, of course, "give" is read as a synonym of "hand" or the like.

Perhaps, then, for sentences such as these, both cases should be in the deep structure with the caveat that Experiencer must equal Goal.

When the recipient, however, is an inanimate noun (such as "library") it is clearly only the Goal of the action as it in no way can experience the giving. If we were concerned only with the English data we would, I think, be tempted to ignore our qualms about animate indirect objects being Experiencers as well as Goals since there is no syntactic evidence that would lead us to want to set up a different underlying structure for (9) as opposed to (1).

(9) John gave the book to the library.

When one examines the Greek data one's qualms, however, return in full force since there it is precisely the sentences of type (1) (i.e. (4)) which can and type (9) which cannot take dative passivization. In other words, for it to undergo subject formation, the indirect object of an active verb in Greek must be animate. This fact would be very nicely accounted for if one assumed that an underlying Experiencer were somewhere in the deep structure and that the passive rule somehow made reference to it. There is, then, no direct translation of (10) possible in Greek.

(10) The library was given a rare sixteenth century book by one of its principal benefactors.

The critical transformations in the current version of generative case-grammar are formulated as follows:

$$\text{Acc-marking:} \quad V \ (C)^* \ \underset{1}{\overset{C_i}{[X]}} \ \underset{2}{X} \ \underset{3}{X} \ \Rightarrow \ 1 \ \overset{acc}{[2]} \ 3$$

Condition $C_i = E, O, G$

$$\text{Passivization:} \quad V \ (C)^* \ \underset{1}{Acc.} \ \underset{2}{} \ \underset{3}{X} \ \underset{4}{} \ \Rightarrow \ \begin{bmatrix} V \\ +passive \end{bmatrix} \ 3 \ 2 \ 4$$

$$\text{Nom-marking:} \quad \overset{C}{\underset{1}{V}} \quad \underset{2}{[X]} \quad \underset{3}{X} \implies 1 \quad \overset{nom}{[2]} \quad 3$$

Assuming for the moment that all indirect objects, whether animate or not, are marked in the deep structure as Goal and only as Goal, this formulation and this ordering will correctly generate any and all accusative passives but only those. Since it is assumed that the Goal will always follow the Object, and since accusative-marking operates by going through a sentence and simply taking the first case it can work on, no indirect object could ever be made the object of subject formation. The situation is really no better if we were to assume that animate indirect objects (such as Mary/ María) were also marked as Experiencers as well as Goals. If this were the case, Accusative-marking would always operate on the Experiencer and we would end up with a host of dative passives as long as the indirect objects were animate but no accusative passives and still no dative passives for inanimate direct objects.

Two possible outs immediately suggest themselves. Chomsky has suggested the first in <u>Syntactic Structures</u> where (in case-grammar terms) there is an optional rule ordered before accusative-marking which switches Object and Goal.

$$(11) \quad \underset{1}{X} \quad \underset{2}{Ob.} \quad \underset{3}{Goal} \quad \underset{4}{Y} \implies 1 \quad 3 \quad 2 \quad 4$$

This allows either the direct or indirect object to become the eventual surface subject. The rule is not as ad hoc, at least in English, as it first seems. Something like it is needed on independent grounds, e.g. to produce sentences (12) and (13).

(12) John gave the book to Mary.
(13) John gave Mary the book.

This theory, of course, carefully ignores any notion of Experiencer in the indirect object as being superfluous to the proper working of its grammar.

In Greek one also finds the same surface structure difference of ordering corresponding to (12) and (13) above. Here, however, this particular reordering seems no different at all from cou tless other variations of surface order which give Greek a "free word order" as opposed to English's "fixed word order". Since this "scrambling" of constituents is obviously a very late phenomenon (for instance it must operate after all surface cases have been introduced) in the derivation it would be unable to account for the necessary reordering before passivization which is a fairly early rule. It would, of course, be possible to have a Chomsky-like rule (as in (11)) and a "scrambling" rule but since they accomplish exactly the same end and since it is impossible to distinguish their results syntactically except for the different effect when the optional rule of passivization has not operated it would seem that to posit such

a rule as (11) is entirely an artifact of our pre-conceived theory and thus, at best, ad hoc. Also the Chomsky-like rule would have to be constrained in Greek so that it would occur only if the Goal were animate--a further infelicity to be avoided if at all possible.

The second solution, however, is even less likely. It would entail rewriting the accusative-marking rule into something like the following form:

$$(14) \quad V \quad (C) \quad \begin{Bmatrix} E \\ O \\ G \end{Bmatrix} \quad X \implies 1 \quad \overset{acc}{[2]} \quad 3$$

$$1 \quad 2 \quad 2 \quad 3$$

where the symbolism is intended to mean that one (and only one) of the cases in the curly brackets must be marked as accusative but the choice is free. There would then be further constraints and "cleaning up" rules to give those cases not chosen their appropriate surface forms. Such a solution is theoretically dubious, at least as proposed here, and has to be shored up with more ad hoc props than the first.

Some other syntactic and historical data not directly concerning three-place predicates may be relevant here. For instance, there seem to be certain verbs in English which optionally fail to undergo accusative-marking. This means that the case normally marked for the accusative will turn up by later rules with some sort of preposition. Hence:

(15) He swam (across) the river.
(16) He ruled (over) mighty and diverse nations.

Theoretically, since the passive rule specifically mentions accusative in its structural description, we should be unable to obtain passives of any kind from these sentences. However a sentence such as (17) seems, to me, unexceptional.

(17) The three kingdoms were ruled over by a single
sovereign.

Such cases are admittedly marginal and fairly rare in English--not so in Greek. There one finds large classes of verbs which either optionally or obligatorily take a direct object in the dative or genitive. For instance,

(18) epibouleúō autôi
'I plot to-him' (I plot against him)

(19) árkhō autoû
'I rule of-him' (I rule him)

(20) kataphronô autoû
'I despite of-him' (I despise him)

and many, many more. The most obvious explanation for these verbs is
that they are marked in the lexicon not to undergo accusative-marking
and hence their objects show up on the surface with cases other than
the accusative. Before the Fifth century B.C. they behaved with regard
to passivization exactly as we would expect on the basis of the current
theory, that is to say, they could not be made passive. At about this
time, however, we begin to find passives formed from these verbs freely.
Hence the following examples.

(21) hai nêes ouk ekhrésthēsan   Hdt VII i44
'the ships not were-used'

(22) hémeîs hup' Athēnaîon epibouleuómetha Thuc. I 82,1
'we by the Athenians are-being-plotted-against'

What is even more striking, and more to the point, it was exactly at
this time that Greek, which had originally been like the Romance
Languages (and incidentally, modern Greek) in allowing only accusative
passives, began to permit dative passives as well. Thus from a
sentence like (23) we can get a sentence such as (24).

(23) epitrépei moi tền díaton
'he-entrusts to-me the arbitration' (he entrusts
me with the arbitration)

(24) epitrépomai tền díaton
'I-am-entrusted (with) the arbitration'

A sentence such as (25) is possible though rare.

(25) Hē díaitos eptrépetaí moi
'the arbitration is-entrusted to-me'

A real example of the latter construction is the following,

(26) toîsi epetétrapto he phulakê   Hdt. VII 10.
'to-them was-permitted the guard'

compare with,

(27) hoi tôn Athēnaîon epitetramménoi tền phulaktēn   Thuc. I
'the of-the-Athenians permitted the guard'   126,11

It would seem that at some time around the Fifth century B.C.,
then, the passive rule was reordered so as to occur before the
accusative-marking rule since it no longer mentions [acc] in its
structural description. In the new grammar, after passivization had
taken place (optionally, of course), sentences underwent (or failed
to undergo) accusative marking just as they always had.

This, of course, does not solve our original problem--it merely
relocated it. Now the question is how the passive rule itself is to
be written. Intuitively what seems to be happening is very much as

Fillmore formulated it in 1968, namely, there is some kind of subject formation rule (which is the same as the current theory's nominative-marking rule?) which operates on the cases in the underlying structure hierarchically. That is to say if there is an Agent it becomes the subject, if there is no Agent but there is an Instrumental it becomes the subject and so on. If, however, the case at the top of the hierarchy is not chosen but one further down the line then the verb is marked as [+passive] and everything procedes normally from there on out. Presuming that this is what is happening, it is a lot easier to point out what the rule should accomplish as we have just done than to write a rigorous formula for it.

While not being able to formulate a transformation symbolically is considered, at least in some circles today, only a minor pecadillo-- if that, there is at least one other problem that remains glaring. It seems fairly certain, at any rate among Indo-European languages, that accusative passives are entirely normal and expected while dative passives are rare. They arise relatively late and relatively seldom. To this day, for instance, there is no Romance language which allows them and even in languages which have acquired them, as did ancient Greek, their hold is tenuous and they tend strongly to disappear as we have mentioned vis-à-vis modern Greek. It seems then that dative passives are definitely more highly marked than their accusative counterparts. It would be expected then that the passive rule in English or classical Greek should somehow be more complex than such a rule in Spanish, say, or modern Greek. The tentative ideas we have discussed above are alike in that they don't show this fact very well. It is obvious that any theory of generative grammar, whether case-grammar or otherwise, is going to have to stretch to accommodate the kind of data that we have been discussing in English and classical Greek and it is going to have to show that this "stretching" is somehow more marked than the "relaxed" state that we find in the Romance languages.

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Psych Movement in Japanese and
Some Crucially Related Syntactic Phenomena

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Preface

In "The Surface Verb 'Remind'," Postal observes about English Psych
Movement verbs as follows:

> "All the relevant verbals which undergo Psych Movement must,
> in nonhabitual, nonmodal, present-tense, declarative
> contexts have an Experiencer NP which is a coreferent of
> the 'subject' NP of the next highest verb of saying/thinking.
> In superficially unembedded declarative clauses this means
> coreference to the 'subject' of the deleted performative
> verb. Such coreference requires the Experiencer NP to be
> first person" (p. 160).

Now, compare his observation with Hideo Teramura's on some of Japanese
'emotive adjectives' in "Emotive Sentences in Japanese."

> "It has often been noted and discussed by Japanese
> grammarians that there are a fairly large number of
> adjectives in Japanese, all expressing some kind of
> emotion or feeling, which, in the present indicative form,
> can be used as predicates for only first person subjects
> in independent clauses" (p. 7).

Also compare Postal's remark:

> "It is not immediately obvious how this account explains
> the permissibility of sentences like:
>   It struck Harry that you were a vampire.
> which are in the past tense" (Underlining Postal's). (p. 164).

with Teramura's:

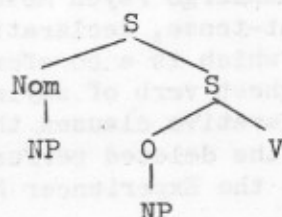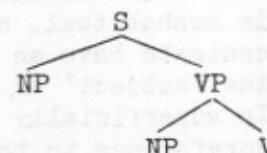> "More perplexing is the fact that a sentence which is
> unnatural because of its non-first person subject predicated
> by an emotive adjective turns out to be perfectly
> acceptable when we change the form of adjective into
> past tense form" (Underlining mine).

The observations quoted above present striking similarities, both
semantic and syntactic, between English Psych Movement verbs and a

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particular class of Japanese adjectives. An interesting question immediately arises: Are these similarities purely accidental? I shall argue in this paper that the similarities are far from accidental but rather they imply that the so-called Japanese emotive adjectives are indeed Psych Movement verbs.

Throughout the paper a Fillmorean analysis will be adopted for the description of the deep structure. However, I shall use a non-Fillmorean framework for the surface structure for the following reason. Fillmore maintains that the subject must be Chomsky-adjoined to the original S node. Therefore, in his framework the subject and the object of the surface structure do not command each other. I am in serious trouble now. For Langacker's notion of 'precede' and 'command' cannot be used for the conditioning of Pronominalization and Reflexivization in Japanese, which is crucial for my argument below.

(1) <u>Fillmorean S.S.</u>   <u>Non-Fillmorean S.S.</u>

```
              S                                    S
           /     \                              /     \
        Nom       S                           NP       VP
         |      / | \                                 /  \
        NP    O   |  V                               NP   V
              |                                        
              NP                                        
```

I. Is the Rule of Experiencer Shunting Well-Motivated?

Consider the following sentences. For the sake of convenience I will treat tense as a feature of the verb in the deep structure.

(2) Alice-ga Bill-niwa osoroshikatta.
     "   "   - to was fearful.
     "Alice was fearful to Bill."
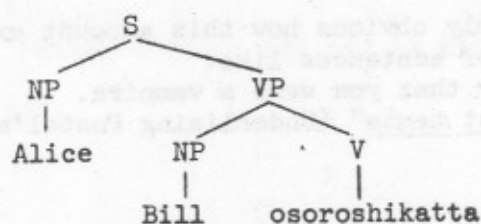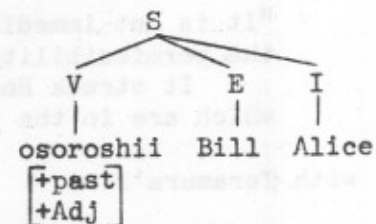
<u>S.S.</u>   <u>D.S.</u>

```
           S                                    S
        /     \                          /    |    |   \
      NP       VP                        V     E    I
       |      /  \                       |     |    |
     Alice  NP    V                  osoroshii Bill Alice
            |     |                   [+past]
          Bill  osoroshikatta        [+Adj]
```

(3) Alice-ga Bill-niwa urayamashikatta.
     "   "   -to was enviable.
     "Alice was enviable to Bill."

S.S.   D.S.

```
            S                                       S
          /   \                                   / | \
        NP     VP                                V    E    I
         |    /   \                              |    |    |
       Alice NP    V                        urayamashii Bill Alice
             |     |                         ⎡+past⎤
            Bill urayamashikatta             ⎣+Adj ⎦
```

(4) Ongaku-ga Alice-niwa tanoshikatta.
     music   " -to   was enjoyable
     "Music was enjoyable to Alice."

S.S.   D.S.

```
            S                                       S
          /   \                                   / | \
        NP     VP                                V    E     I
         |    /   \                              |    |     |
      Ongaku NP    V                         tanoshii Alice Ongaku
             |     |                          ⎡+past⎤
           Alice tanoshikatta                 ⎣+Adj ⎦
```

(5) Alice-ga Bill-niwa awaredatta.
      "   " -to   was pitiful
     "Alice was pitiful to Bill."

S.S.   D.S.

```
            S                                       S
          /   \                                   / | \
        NP     VP                                V    E    I
         |    /   \                              |    |    |
       Alice NP    V                           aware Bill Alice
             |     |                          ⎡+past⎤
            Bill awaredatta                   ⎣+Adj ⎦
```

(6) Alice-ga Bill-niwa nikukatta.
      "   " -to   was hateful
     "Alice was hateful to Bill."

S.S.   D.S.

```
            S                                            S
          /   \                                        / | \
        NP     VP                                     V  E  I
        |     /  \                                    |  |  |
      Alice  NP   V                                 nikui Bill Alice
             |    |                                 ⌈+past⌉
            Bill nikukatta                          ⌊+Adj ⌋
```
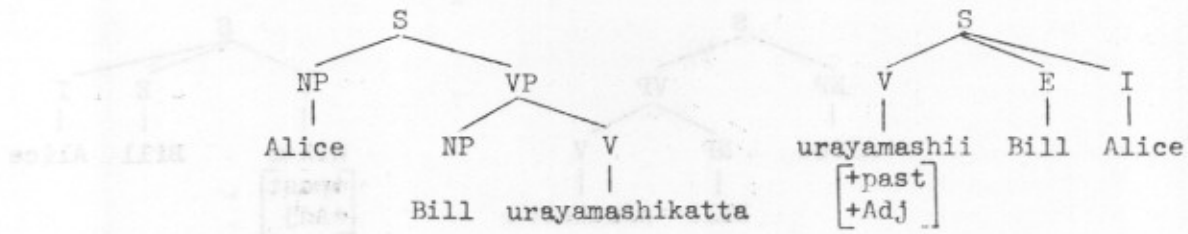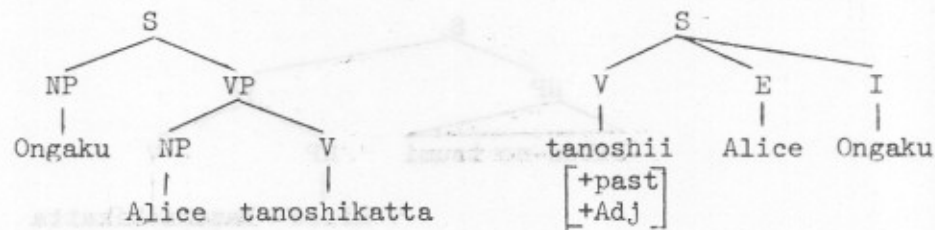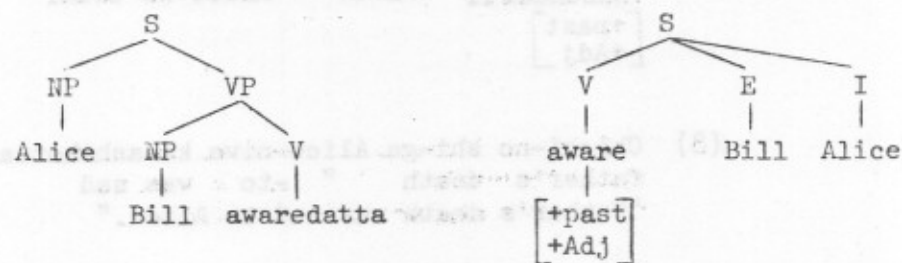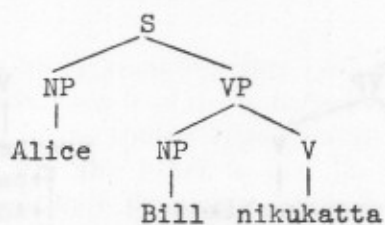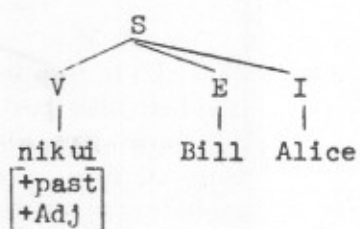
(7) (Zibun-no) tsumi-ga Alice-niwa hazukashikatta.
      self   crime   "   -to   was shameful
     "Her own crime was shameful to Alice."

S.S.

```
                S
              /    \
            NP      VP
           / \     /  \
    Zibun-no tsumi NP   V
                   |    |
                 Alice hazukashikatta
```

D.S.

```
                 S
               / | \
              V  I   I
              |  |   / \
        hazukashii Alice Alice-no tsumi
        ⌈+past⌉
        ⌊+Adj ⌋
```
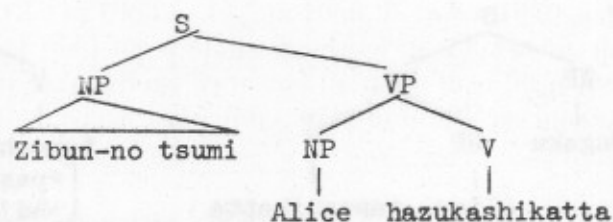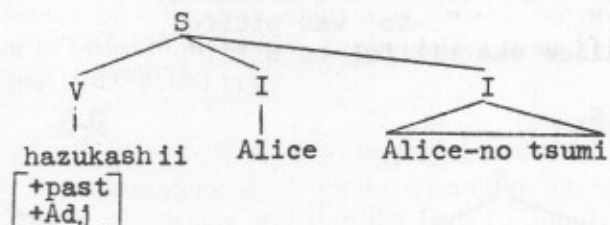
(8) Chichi-no shi-ga Alice-niwa kanashikatta.
     father's death   "   -to   was sad
     "Father's death was sad to Alice."

S.S.

```
                    S
                  /    \
                NP      VP
               / \     /  \
     (Zibun-no) Chichi-no shi NP   V
                            |    |
                          Alice kanashikatta
```

D.S.

```
                    S
        ┌───────────┼───────────────┐
        V           I               I
        │           │          ┌─────────────┐
     kanashii     Alice     Alice-no Chichi-no shi
      ⎡+past⎤
      ⎣+Adj ⎦
```
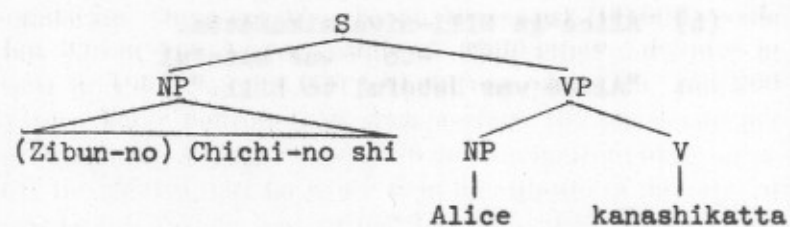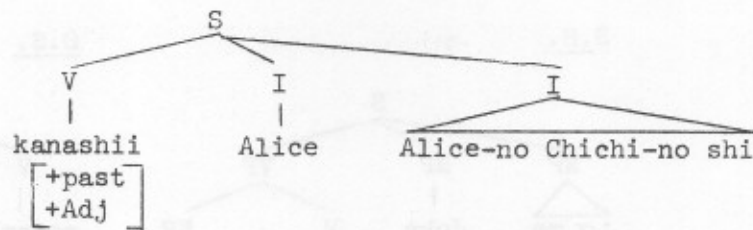
As the Fillmorean deep case analysis reveals, in each sentence the Experiencer NP is 'shunted' and the Instrument NP, 'the stimulus of an event', has become the subject of the surface structure. Thus, it seems that the General Experiencer Shunting Rule operates here. However, I would like to claim that this is not what happens. I shall argue below that what is operating here is the Psych Movement rule and not the Experiencer Shunting rule.

Let us examine the English Experiencer Shunting Rule formulated by Fillmore.

(9) General Experiencer Shunting Rule

$$\underbrace{(^V C_i \quad \text{omissible}) \ (C)^*}_{1} \quad \underset{2}{\underline{C_i}} \ \underset{3}{\underline{X}} \Longrightarrow 1 \ 3 \ \# \ 2$$

In "The Case for Case" Fillmore maintained that there was no linear order relationship among the deep cases. However, he has since then revised his theory in su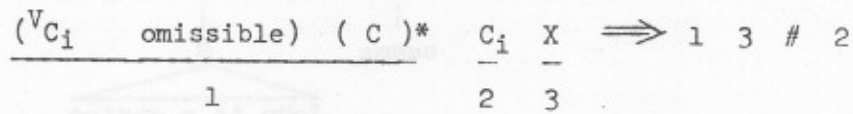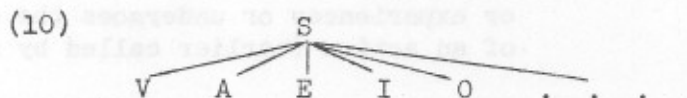ch a way that there exists a strict hierarchical order among the deep cases and that such rules as Subject Formation, Psych Movement, Object Formation, etc., are sensitive to this order. The Fillmorean deep case hierarchy is as shown below.

(10)
```
                    S
        ┌────┬────┬────┬────┬── · · ·
        V    A    E    I    O
```

The function of the General Experiencer Shunting rule is to shunt the Experiencer NP so that it will not get involved in the operations of the rules which follow it. Fillmore has given the following examples in his syntax class in the 1970 Summer Linguistic Institute at Ohio State.

(11) To me, John is tall.

S.S.   D.S.
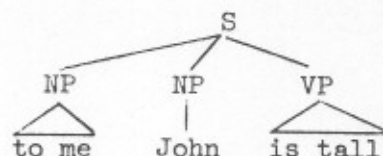
```
            S                                    S
    ┌───────┼───────┐                    ┌───────┼───────┐
    NP      NP      VP                   V       E       O
    │       │       │                    │       │       │
  to me    John   is tall              tall      I      John
```

(12) To me, John resembles Mary.

```
        S.S.                                    D.S.

              S                                      S
      ┌───────┼────────┐                ┌──────┬─────┬──────┐
     NP      NP       VP                V      E     I      O
     /\       |    ┌───┴───┐            |      |     |      |
   to me    John   V      NP         resemble  I   John   Mary
                   |       |
               resembles  Mary
```

(13) To me, it seems that John is a genius.
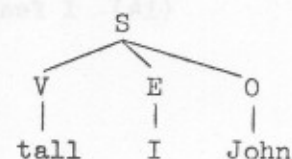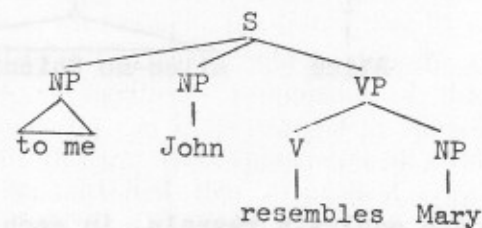
```
        S.S.                                    D.S.

              S                                      S
      ┌───────┼────────┐                ┌──────┬──────────┐
     NP      NP       VP                V      E          O
     /\       |    ┌───┴───┐            |      |          |
   to me     it    V      NP          seem     I          S
                   |       |                               /\
                 seems     S                       John is a genius
                          /\
                   John is a genius
```
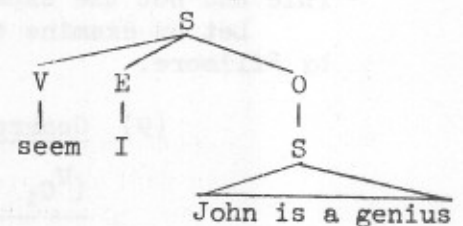
In each case, the Experiencer NP I has been 'shunted'. That is why
it has not become the surface subject, so Fillmore explains.
     Recall Fillmore's definition of Experiencer in "Types of Lexical
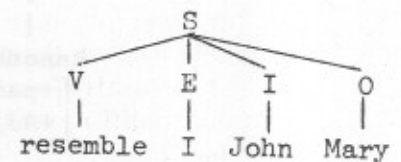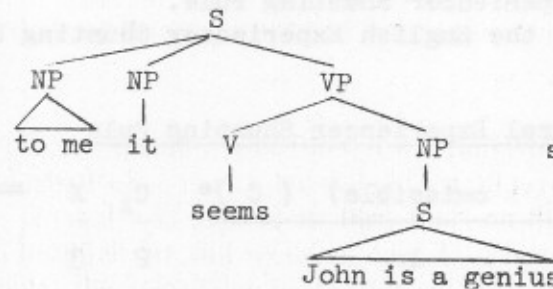Information" (p. 116).

> Experiencer (E): the entity which receives or accepts
>   or experiences or undergoes the effect
>   of an action (earlier called by me Dative).

Although he does not explicitly say so, it is obvious that he means 'an
action' to be 'an action identified by the verb' as it was defined in
"The Case for Case." Observe the sentences (11) and (12) again. Please
ignore (13) temporarily. Is the Experiencer NP I well-qualified to be
called so in the defined sense of the word? I would like to claim that
it is not. I does not receive or accept or experience or undergo the
effect of an action identified by tall or resemble. Rather it is the
Experiencer of a predicate of judgment/perception like think or seem.
Compare (11) and (12) with (14) and (15) below.

(14) I fear the dog.

S.S.   D.S.

```
          S                                        S
        /   \                                    / | \
      NP     NP                                 V  E  I
      |     /  \                                |  |  /\
      I    V    NP                            fear I the dog
           |    /\
         fear  the dog
```
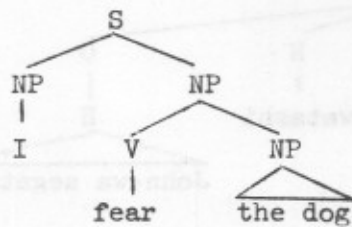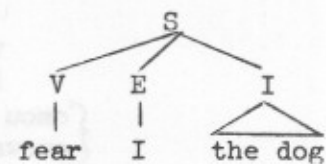
(15) I believe that John is a genius.

S.S.   D.S.

```
          S                                        S
        /   \                                      |
      NP     VP                                 / | \
      |     /  \                               V  E  O
      I    V    NP                             |  |  |
           |    |                           believe I  S
        believe S                                     /\
               /\                              John is a genius
          John is a genius
```
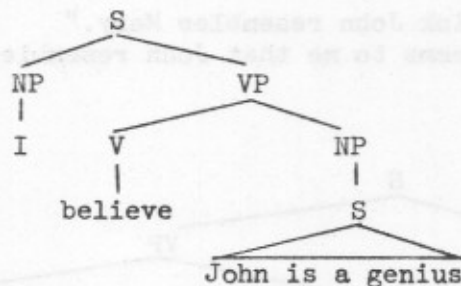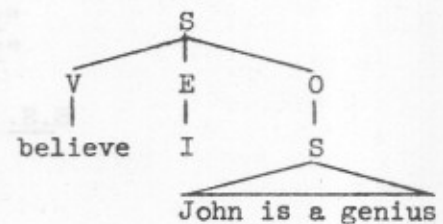
In (14) and (15) the Experiencer I is clearly well-qualified to be called
so, for it is I who experiences or undergoes the effect of an action
identified by the verb fear or believe. Thus the relationship between
the Experiencer and its predicate is entirely different in (11), (12)
and (14), (15). In the Japanese versions of (11) and (12) the predicate
of judgment/perception is required for the Experiencer NP I. Otherwise,
the sentences are ungrammatical. Thus they are analysed as the complex
sentences as shown below.

(16)   { watashi-wa }   John-wa segatakai   to   { omou   }
       {   " -niwa }   { omowareru }

        "I think that John is tall."
        "It seems to me that John is tall."

S.S.

```
                   S
                 /   \
               NP     VP
        { watashi-wa }/  \
        { watashi-niwa} NP    V
                        |      { omou     }
                        S      { omowareru }
                        /\
               John-wa segatakai
```

D.S.

```
                    S
         ┌──────────┼──────────┐
         V          E          O
         |          |          |
      ⎧omou    ⎫  watashi      S
      ⎩omowareru⎭          ┌───────┴───────┐
                        John-wa segatakai
```
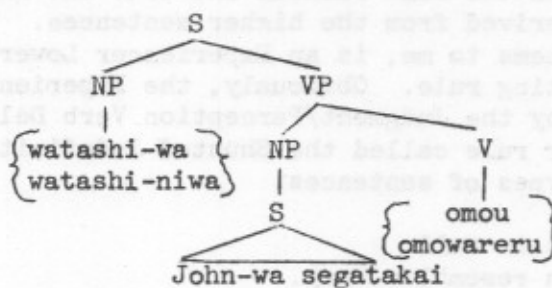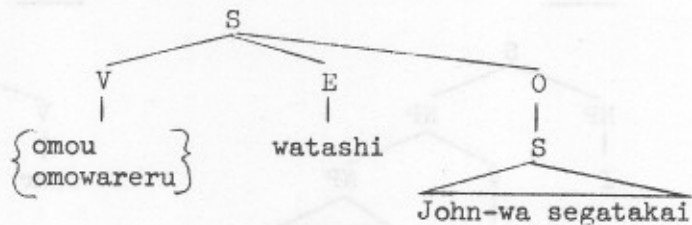
(17) ⎧watashi-wa⎫ John-wa Mary-ni niteiru   to ⎧omou   ⎫
      ⎩ "   -niwa⎭   "   ⎩omowareru⎭

      ⎧ I ⎫   John   Mary - to resemble that ⎧think⎫
      ⎩ " -to⎭   ⎩seem ⎭

      "I think John resembles Mary."
      "It seems to me that John resembles Mary."

S.S.

```
                    S
           ┌────────┴────────────┐
          NP                    VP
           |            ┌────────┼────────┐
      ⎧watashi-wa ⎫    NP                 V
      ⎩watashi-niwa⎭    |                  |
                        S              ⎧omou    ⎫
                  ┌─────┴─────┐        ⎩omowareru⎭
              John-wa Mary-ni niteiru
```

D.S.

```
                    S
           ┌────────┼──────────────┐
           V        E              O
           |        |              |
      ⎧omou    ⎫  watashi          S
      ⎩omowareru⎭           ┌──────┴──────┐
                       John-wa Mary-ni niteiru
```
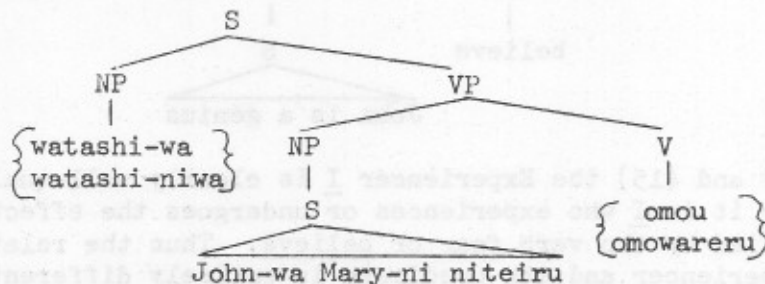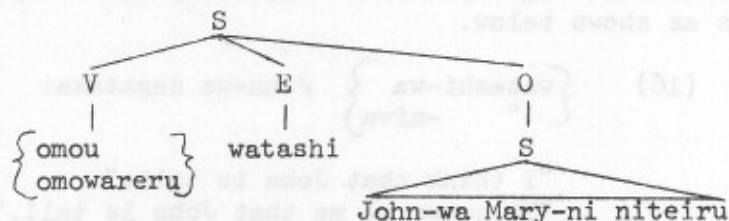
I would like to claim that English sentences like (11) and (12) too
should be analysed in the same fashion and that the Experiencer in
(11) and (12) has derived from the higher sentences. What English
grammar needs, it seems to me, is an Experiencer Lowering rule and not
an Experiencer Shunting rule. Obviously, the Experiencer Lowering rule
has to be preceded by the Judgment/Perception Verb Deletion rule.
Fillmore has another rule called the Shunted Indefinite Deletion rule
for the following types of sentences.

(18) John is tall.
(19) John resembles Mary.

Ross's performative analysis seems to be more adequate in handling
these sentences. My proposed analyses of the deep structure for the
sentences (11) and (12) are as follows:

(20) To me, John is tall.

D.S.

```
                    S
          ┌─────────┼─────────┐
          V         E         O
          |         |         |
  [+Judgment/Perception]  I    S
                             ╱──╲
                          John is tall
```
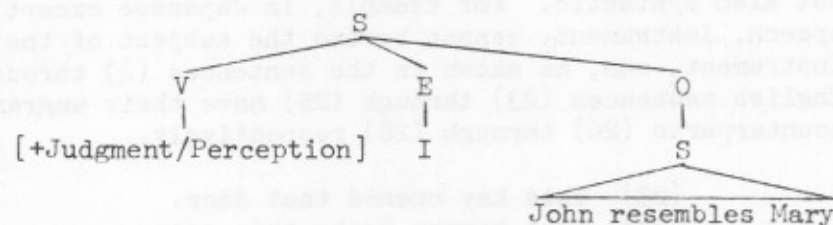
(21) To me, John resembles Mary.

D.S.

```
                    S
          ┌─────────┼─────────┐
          V         E         O
          |         |         |
  [+Judgment/Perception]  I    S
                             ╱──────╲
                        John resembles Mary
```
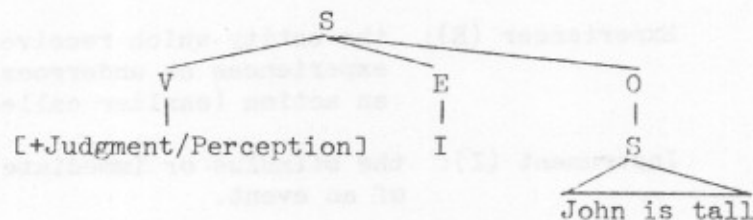
Now, let us go back to his example (13). I agree with Postal in
analyzing the verb _seem_ as Psych Movement verb. The reason why _to me_
is fronted to the beginning of the sentence in (13) is because Ross's
Topicalization rule has operated on the sentence (22) and yielded the
sentence (13).
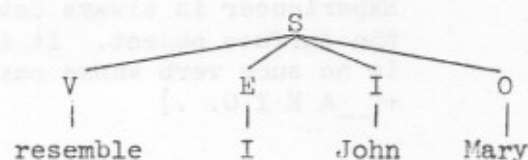
(22) It seems to me that John is a genius.
(13) To me, it seems that John is a genius.

II. Is the Combination of E, I, O possible in the Deep Structure?

Recall the sentence (12) and Fillmore's deep case analysis for it.

(12) To me, John resembles Mary.

D.S.

```
               S
        ┌────┬───┬────┐
        V    E   I    O
        |    |   |    |
     resemble I John Mary
```

Fillmore's analysis claims that the combination of E, I, O is perfectly acceptable for the simple sentence at the deep structure level of human language. I would like to argue that this is wrong. I shall propose, as a deep structure constraint, that the combination of E, I, O cannot occur in the simple sentence. Let us examine the Fillmorean sense of the four cases. (from "Types of Lexical Information," p. 116)

Agent (A): the instigator of the event.

Experiencer (E): the entity which receives or accepts or experiences or undergoes the effect of an action (earlier called by me Dative).

Instrument (I): the stimulus or immediate physical cause of an event.

Object (O): the entity that moves or changes or whose position or existence is in consideration.

As the definition clearly shows, Instrument can be subcategorized into $Instrument_1$ and $Instrument_2$. These subcategories are not only semantic but also syntactic. For example, in Japanese except for the figurative speech, $Instrument_1$ cannot become the subject of the sentence. $Instrument_2$ can, as shown in the sentences (2) through (8). Therefore, English sentences (23) through (25) have their ungrammatical Japanese counterparts (26) through (28) respectively.

(23) This key opened that door.
(24) That hammer broke this vase.
(25) The fire burnt that house.
(26) *Kono kagi-ga ano to-o aketa.
(27) *Ano hanmaa-ga kono kabin-o watta.
(28) *Kaji-ga ano ie-o yaita.

If the hierarchical order of A, E, I, O proposed by Fillmore is a universal claim, then it is violated by Japanese as shown by the above examples. For it is not the Instrument but the Object which is the subject of the sentences.

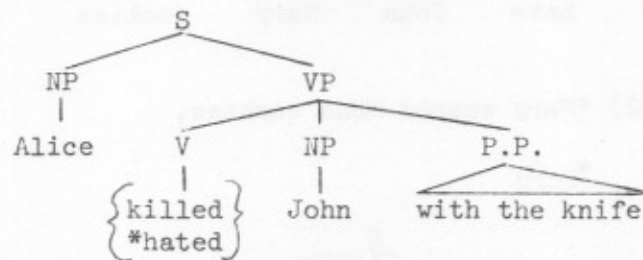There are certain selectional restrictions among deep cases. For example;

$Instrument_1$: 1. Only possibility for Experiencer to co-occur with $Instrument_1$ at deep level is together with Agent. Otherwise, they are mutually exclusive.

2. When Agent and Experiencer co-occur, Experiencer is always destined to become the surface object. It implies that there is no such verb whose case feature is +[__ A E I O. .]

Observe the following examples.

(29) Alice $\begin{Bmatrix} \text{killed} \\ \text{*hated} \end{Bmatrix}$ John with the knife.

S.S.

```
              S
         ┌────┴────┐
        NP         VP
         │    ┌─────┼──────┐
       Alice  V     NP     P.P.
              │     │       │
         ┌killed┐  John  with the knife
         │*hated│
         └──────┘
```

D.S.

```
                    S
        ┌──────┬────┼─────┬──────┐
        V      A    E     I      *O
        │      │    │     │       │
     ┌kill ┐ Alice John knife    X
     │*hate│
     └─────┘
```
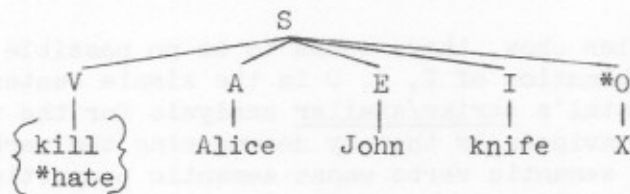
Instrument₂: 3. Agent and Instrument₂ are mutually exclusive.

4. Instrument₂ has to co-occur with Experiencer.

5. When Experiencer becomes the surface subject, Instrument₂ becomes the surface object. And vice versa. Again it implies there is no such verb whose case feature is +[___ E I O ...]

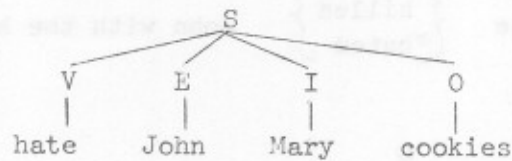Observe the following.

(30) John gave Mary cookies.

D.S.

```
               S
       ┌────┬──┴──┬──────┐
       V    A     O      G(oal)
       │    │     │       │
     give  John cookies  Mary
```
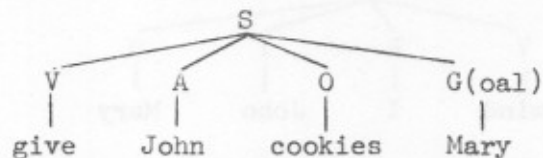
(31) *John hated Mary cookies.

19

*<u>D.S.</u>

```
              S
      ┌───┬───┴───┐
      V   E   I   O
      │   │   │   │
    hate John Mary cookies
```

(32) *Mary scared John cookies.

*<u>D.S.</u>

```
              S
      ┌───┬───┴───┐
      V   E   I   O
      │   │   │   │
   scare John Mary cookies
```

As above examples show, there seems to be no possible way to get the deep level combination of E, I, O in the simple sentence.

Recall Postal's <u>strike/similar</u> analysis for the verb <u>remind</u>. He argues quite convincingly that by decomposing the verb <u>remind</u> into the two underlying semantic verbs whose semantic properties are quite similar to the lexical verbs <u>strike</u> and <u>similar</u>, the seemingly idiosyncratic behaviors of this verb can well be accounted for by the independently motivated transformational rules and the derivational constraints and with the inherent properties of these underlying verbs. Thus, this abstract analysis, he claims, makes it possible to capture significant generalizations of English syntax. It is quite remarkable that we are forced to arrive at the same conclusion by our claim that the combination of E, I, O is impossible for the simple sentence at the base structure.

Consider the following sentence.

(33) John reminds me of Mary.

Fillmore would suggest the following deep case analysis.

<u>D.S.</u>

```
              S
      ┌───┬───┴───┐
      V   E   I   O
      │   │   │   │
   remind I  John Mary
```
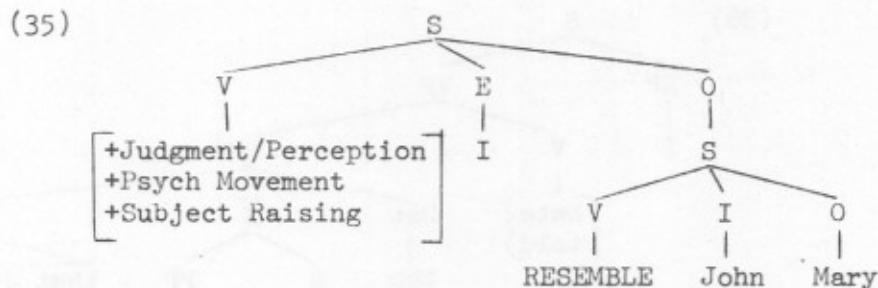
However, if we assume this combination is unacceptable, we are forced to find another way of explaining the sentence. Compare this sentence with the sentence (34).

(34) To me, John resembles Mary.

The native speaker of English knows that the two are very closely related. Observe that the status of Experiencer I in the two sentences are entirely different, for in (33) I is the one who 'experiences the effect of an action identified by the verb remind', but in (34) it is not the case. We know the latter is the 'lowered' Experiencer. It is obvious that the Experiencer Lowering rule does not operate in (33). The fact that the true Experiencer of the predicate is the surface object indicates that it has been downgraded by Psych Movement rule. Thus we may conclude that instead of Experiencer Lowering, Subject Raising has taken place in (33). John, which has started out in the lower sentence, has been raised into the main sentence by Subject Raising and then after the application of Psych Movement, Subject Formation has moved John to the subject position. The predicate of the lower sentence must have been a semantic verb whose feature composition is quite similar to that of lexical item resemble. The restructuring of the tree has yielded the present surface structure. This analysis explains beautifully why the native speaker of English intuitively knows that the two sentences (33) and (34) are essential paraphrases. My proposed analysis of the sentence (33) is as follows.

(35)

```
                                S
          ┌─────────────┬───────────┴──────────┐
          V             E                       O
          │             │                       │
  ┌─────────────────┐   I                       S
  │+Judgment/Perception│                     ┌───┼───┐
  │+Psych Movement   │                       V   I   O
  │+Subject Raising  │                       │   │   │
  └─────────────────┘                    RESEMBLE John Mary
```

This analysis claims that the verb remind cannot be inserted at the deep structure level. Therefore, it seems to me that a Fillmorean deep case analysis forces us to admit that the lexical insertion cannot be done in a block at the deep structure level and that the transformational rule can operate on the semantic verbs as well as on the actual lexical items.

I would like to interpret the impossibility of the E, I, O combination to mean simply that this is not the way human beings conceive the world. Fillmorean deep cases are the semantic 'distinctive features' with which humans perceive and understand the outer world. Basically, I believe this approach to the syntax is the correct one. A linguistic theory is an empirical claim about the nature of human language which is very tightly connected with the organism of human cognition. I believe that 'deep cases' should be incorporated into the theory of language as semantic primitives, if it aims to attain the goal of explanatory adequacy.

Let me give you another example that some transformational rules are really sensitive to the semantic case roles of the NP in the sentence. In his "An Interpretive Theory of Pronouns and Reflexives," Jackendoff observes quite 'startling' phenomena, which he fails to account for (p. 19).

"Exploring more data, we notice the startling fact that the
choice of verbs in the main clause and the relative clause
affects the acceptability of reflexives in the relativized
noun phrase. We get paradigms like these:

$$(36) \quad I_i \text{ hate the story about} \left\{ \begin{array}{l} *him_i \\ himself_i \\ me_i \\ *myself_i \end{array} \right\} \text{that John}_i \text{ always tells.}$$

$$(37) \quad I_i \text{ told the story about} \left\{ \begin{array}{l} *him_i \\ *himself_i \\ *me_i \\ myself_i \end{array} \right\} \text{that John}_i \text{ likes to hear.}$$

(36) and (37) look the same as far as noun phrase relationships
are concerned:

(38)
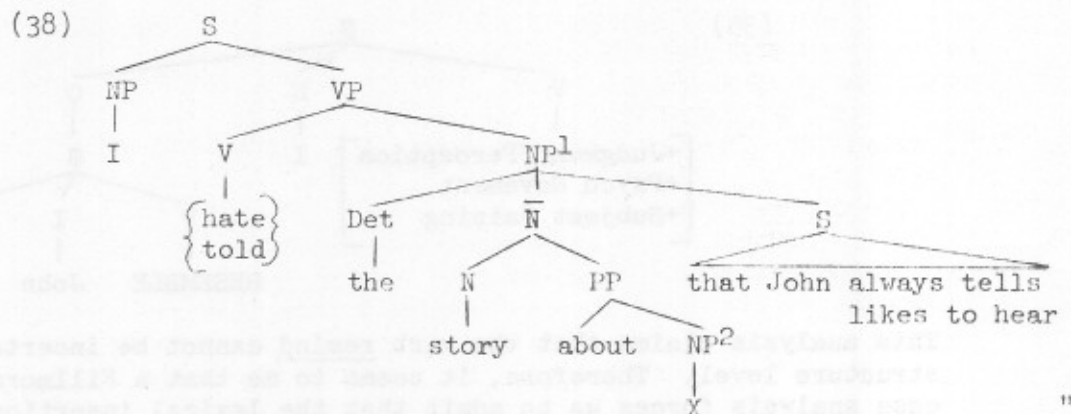
Observe that in (36) backward reflexivization takes place, while in
(37) forward reflexivization takes place. Jackendoff's interpretive
rule is quite helpless in predicting which NP in the sentence the
reflexivized form is coreferent with. Jackendoff assumes that "there
is an optional semantic rule that duplicates the subject of a sentence
in the determiner of the object." However, he is quite at a loss how
to formulate the conditioning of this rule. He goes as far as to
suspect that "this rule depends on some semantic property of the verb"
and "the property in question is related to the subject's performing
some sort of direct action on the object." Jackendoff intuitively
feels that the above phenomenon must be very closely related to the
following data.

(39) Today I shot my first lion.
      *Today I was scared of my first lion.

(40) Yesterday I told my first Polish joke.
      *Yesterday I heard my first Polish joke.

(41) Today I performed my first Mozart symphony.
      *Today I hated my first Mozart symphony.

Observe that the my here has no connection whatever with possession.
He again deplores that "its semantic relation to the head noun is
extremely unclear to me." So far as observation goes, he is quite
correct. However, since the deep case notion is not available in his
linguistic theory, he fails to capture the important generalization of
what is really going on in the two closely related phonomena. The
verbs such as hate, hear, be scared of, are Experiencer verbs. They
are not associated with Agent. On the contrary, the verbs such as tell,
shoot, perform are Agent verbs. Now, observe the sentences (36) and
(37) again. The NP the story about + REFLEXIVE is associated with two
verbs, one in the major clause and the other in the relative clause.
In both cases one is the Agent verb and the other is the Experiencer
verb. Notice that it is always the Agent of the sentence which the
reflexivized form is coreferent with! (40) and (41) clearly show that
Agent copying rule takes place in English. Thus our analysis of the
'puzzling' phenomena is as simple as follows:

First, Agent copying rule applies. This rule duplicates
Agent in the determiner of the Object. Then pronominalization
and reflexivization takes place.

III. Justification of Psych Movement

3.1. Paraphrase argument.
Compare the following pairs of sentences. The native speaker of
Japanese knows that each member of a pair is a true paraphrase of the
other. Group (a) are the same sentences as (2) through (8).

(42) a. Alice-ga Bill-niwa osoroshikatta.
            "   "   -to   was fearful
          "Alice was fearful to Bill."
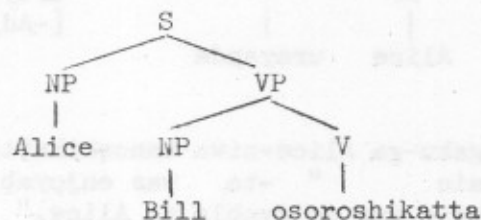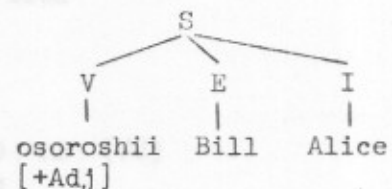
S.S.   D.S.

      b. Bill-ga Alice-o osoreta.
            "   "   feared
          "Bill feared Alice."

S.S.   D.S.

```
        S                              S
      /   \                        /   |   \
    NP     VP                     V    E    I
     |    /  \                     |    |    |
    Bill  NP  V                 osoreru Bill Alice
          |   |                  [-Adj]
        Alice osoreta
```

(43) a. Alice-ga Bill-niwa urayamashikatta.
                  " -to   was enviable
          "Alice was enviable to Bill."

S.S.   D.S.

```
        S                              S
      /   \                        /   |   \
    NP     VP                     V    E    I
     |    /  \                     |    |    |
   Alice  NP  V               urayamashii Bill Alice
          |   |                  [+Adj]
         Bill urayamashikatta
```
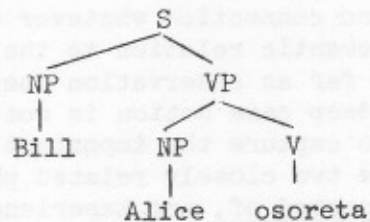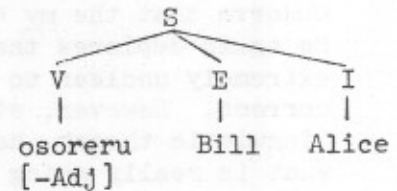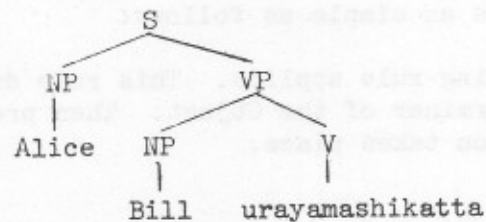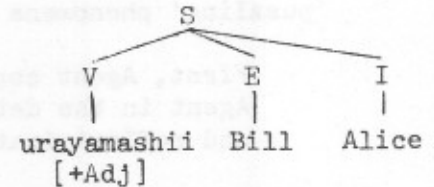
      b. Bill-ga Alice-o urayanda.
            " "   envied
        "Bill envied Alice."

S.S.   D.S.
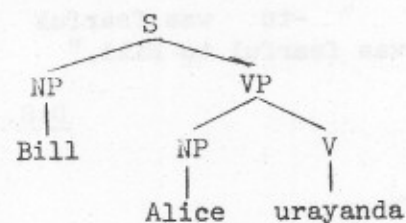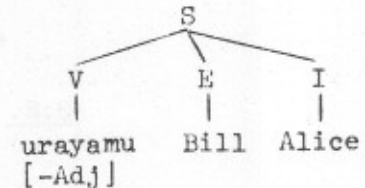
```
        S                              S
      /   \                        /   |   \
    NP     VP                     V    E    I
     |    /  \                     |    |    |
    Bill  NP  V                 urayamu Bill Alice
          |   |                  [-Adj]
        Alice urayanda
```

(44) a. Ongaku-ga Alice-niwa tanoshikatta.
        music   " -to   was enjoyable
        "Music was enjoyable to Alice."

S.S.   D.S.

```
        S                              S
      /   \                        /   |   \
    NP     VP                     V    E    I
     |    /  \                     |    |    |
  ongaku  NP  V                tanoshii Alice ongaku
          |   |                  [+Adj]
        Alice tanoshikatta
```
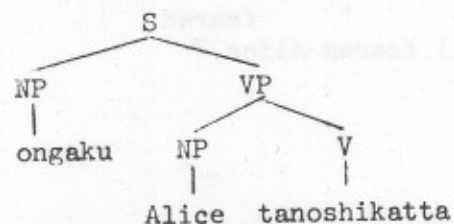
b. Alice-ga ongaku-o tanoshinda.
     "   music   enjoyed
   "Alice enjoyed the music."

S.S.

```
              S
         /         \
       NP           VP
        |          /    \
      Alice      NP      V
                  |      |
               ongaku  tanoshinda
```

D.S.

```
            S
       /    |    \
      V     E     I
      |     |     |
  tanoshimu Alice ongaku
   [-Adj]
```

(45) a. Alice-ga Bill-niwa awaredatta.
      "   " -to   was pitiful
     "Alice was pitiful to Bill."

S.S.

```
              S
         /         \
       NP           VP
        |          /    \
      Alice      NP      V
                  |      |
                Bill  awaredatta
```

D.S.

```
            S
       /    |    \
      V     E     I
      |     |     |
  awaremu  Bill  Alice
   [-Adj]
```
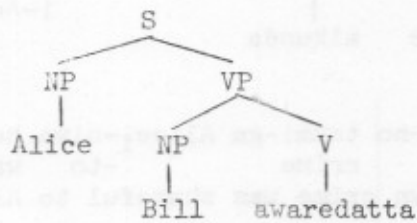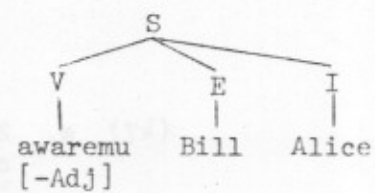
b. Bill-ga Alice-o awarenda.
   "Bill pitied Alice."

S.S.

```
              S
         /         \
       NP           VP
        |          /    \
      Bill       NP      V
                  |      |
                Alice  awarenda
```

D.S.

```
            S
       /    |    \
      V     E     I
      |     |     |
  awaremu  Bill  Alice
   [-Adj]
```

(46) a. Alice-ga Bill-niwa nikukatta.
      "   " -to   was hateful
     "Alice was hateful to Bill."

S.S.

```
          S
        /   \
      NP     VP
      |     /  \
    Alice  NP    V
           |     |
          Bill  nikukatta
```

D.S.

```
         S
       / | \
      C  E  I
      |  |  |
   nikui Bill Alice
   [+Adj]
```
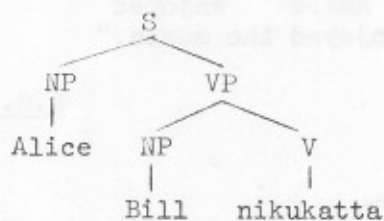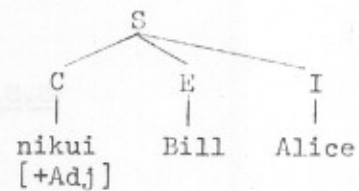
b. Bill-ga Alice-o nikunda.
      "   "   hated
    "Bill hated Alice."

S.S.

```
          S
        /   \
      NP     VP
      |     /  \
    Bill   NP    V
           |     |
         Alice  nikunda
```

D.S.

```
         S
       / | \
      V  E  I
      |  |  |
  nikumu Bill Alice
  [-Adj]
```
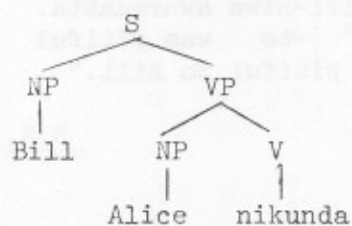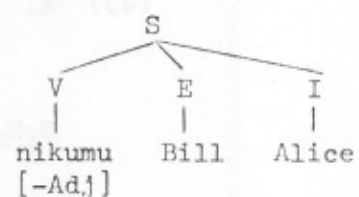
(47) a. Zibun$_i$-no tsumi-ga Alice$_i$-niwa hazukashikatta.
          self   crime   "   -to   was shameful
          "Her own crime was shameful to Alice."

S.S.

```
               S
            /      \
          NP        VP
         / \       /  \
   Zibun_i-no tsumi NP    V
                    |     |
                 Alice_i  hazukashikatta
```

D.S.

```
            S
         /  |   \
        V   E    I
        |   |   / \
  hazukashii Alice_i Alice_i-no tsumi
  [+Adj]
```
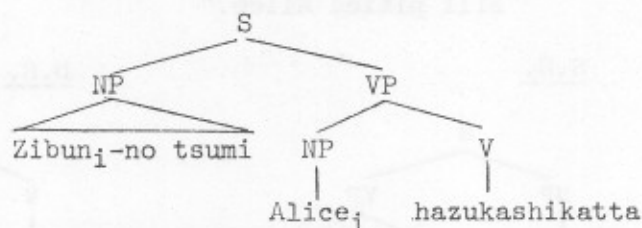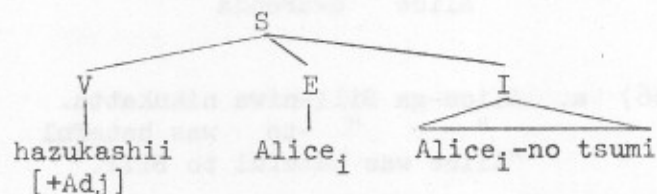
b. Alice$_i$-ga zibun$_i$-no tsumi-o hazita.
      "   self's   crime   was ashamed of
    "Alice was ashamed of her own crime."

S.S.   D.S.

```
              S                                      S
        ┌─────┴─────┐                         ┌──────┼──────┐
       NP          VP                         V      E      I
        │        ┌──┴──┐                       │      │      ╱╲
     Alice_i    NP     V                    haziru Alice_i Alice_i-no
              ╱──┴──╲   │                   [-Adj]         tsumi
         zibun_i-no tsumi hazita
```
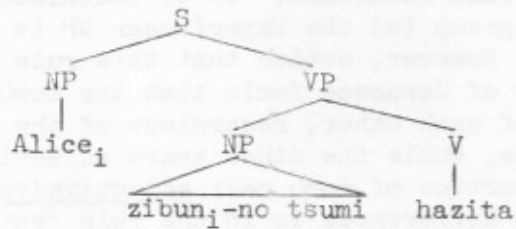
(48) a. Chichi-no shi-ga Alice-niwa kanashikatta.
            father's 'death " -to   sad
            "Father's death was sad to Alice."

S.S.   D.S.

```
              S                                      S
        ┌─────┴─────┐                         ┌──────┼──────┐
       NP          VP                         V      E      I
      ╱──┴──╲    ┌──┴──┐                       │      │      ╱╲
  Chichi-no shi NP     V                    kanashii Alice_i Alice_i-no
                 │     │                    [+Adj]          chichi-no shi
               Alice kanashikatta
```

b. Alice-ga chichi-no shi-o kanashinda.
    "   father's death was sad about
   "Alice was sad about father's death."

S.S.   D.S.

```
              S                                      S
        ┌─────┴─────┐                         ┌──────┼──────┐
       NP          VP                         V      E      I
        │        ┌──┴──┐                       │      │      ╱╲
      Alice     NP     V                   kanashimu Alice_i Alice_i-no
               ╱──┴──╲  │                   [-Adj]          chichi-no shi
          chichi-no shi kanashinda
```
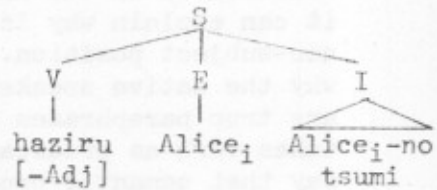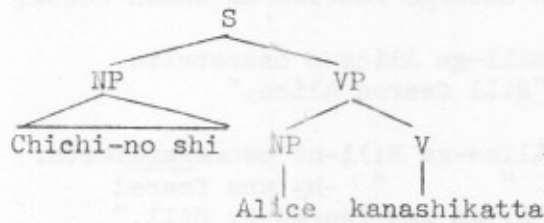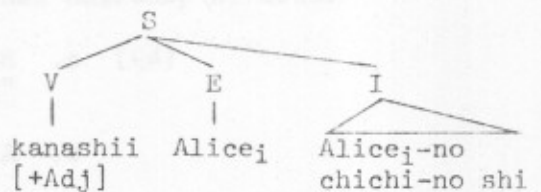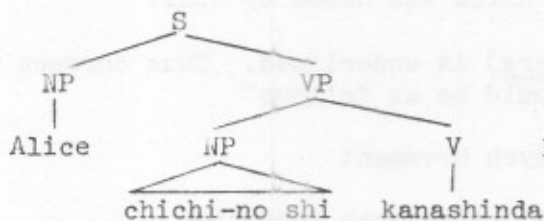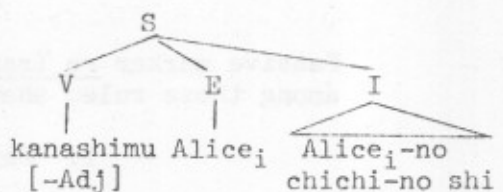
The syntactic differences between group (a) and group (b) are quite
systematic; 1) The subject in group (a) shows up as the direct object
in group (b). 2) The Indirect object in group (a) shows up as the subject
in group (b). 3) Group (a) takes the adjective as its predicate, while
group (b) takes the verb. Superficially speaking, Subject-Object
Inversion has taken place in the corresponding pair. It is obvious
that the postulation of Experiencer Shunting is of no help in accounting
for this phenomenon. Incidentally, please don't be misguided by the
English translations. The Japanese verbs given here are all basic
forms, not derived ones. For example, be ashamed of, and be sad about
are full-fledged verbs in Japanese.
    An adequate grammar of Japanese has to account for the fact that
the native speaker of Japanese feel that each pair of sentences from

(42) through (48) means the same thing, regardless of the syntactic differences in the surface structure. If we postulate Psych Movement, it can explain why in group (a) the Experiencer NP is downgraded to non-subject position. However, notice that this rule cannot explain why the native speaker of Japanese feels that the member of each pair are true paraphrases of each other, regardless of the fact that one takes verb as predicate, while the other takes adjective. We might say that semantic properties of each pair adjective/verb are essentially alike and one of their differences is in the rule feature [+Psych Movement]. According to this analysis they are already in the deep structure at the time when Psych Movement applies. I would like to propose an alternative. That is, when Psych Movement applies, the above-mentioned predicates are semantic verbs, with the rule feature [+ Psych Movement]. If it applies, then the lexical transformation inserts adjectives. If not, then the same lexical transformation inserts verbs. The Passive rule has to follow lexical insertion, for the inserted verbs in question can undergo Passive as shown below.

> (49) a. Bill-ga Alice-o osoreteita.
>   "Bill feared Alice."
>
> b. Alice-ga Bill-ni osorerareteita.
>   "   " -by was feared
>   "Alice was feared by Bill."
>
> (50) a. Bill-ga Alice-o nikundeita.
>   "Bill hated Alice."
>
> b. Alice-ga Bill-ni nikumareteita
>   "   " -by was hated
>   "Alice was hated by Bill."

Passive marker re (rare) is underlined. Thus correct ordering relations among those rules should be as follows"

> 1. Psych Movement
>
> 2. Adjective/Verb Insertion
>
> 3. Passive
>
> 4. Subject Formation

A few verbs in Japanese undergo the Psych Movement rule obligatorily. A pair of verbs, wakaru and satoru, mean about the same thing. Their meaning difference is quite a subtle one. One of the differences of the two is the rule feature [Psych Movement]. Compare the following sentences.

> (51) a. Alice-wa (zibun-ga mamonaku shinu koto)-o satotta.
>   "   self   soon   die   that   realized
>   "Alice realized that she would die soon."

(50) b. (Zibun-ga mamonaku shinu koto)-ga Alice-niwa wakatta.
         "Alice understood that she would die soon."

Thus, <u>wakaru</u> is [+Psych Movement], whereas <u>satoru</u> is [-Psych Movement].

3.2. Evidence for Psych Movement from Reflexivization.

The Japanese Reflexivization rule behaves almost like the English Pronominalization rule except that Backward Reflexivization is prohibited. It goes down into the complement sentences, the relative clauses and sentences in apposition. Thus it can easily violate Ross's Complex NP constraint. Ross's Complex NP constraint says that except for Pronominalization, no feature-changing transformation may change features within the complex NP construction. He knows, however, that Japanese Reflexivization rule would be a counter-example, if it be a universal claim. It also violates the Conjoint Structure constraint. Indeed Japanese Reflexivization is quite deviant from the standard behavior. Observe the following examples.

(51) Alice$_i$-wa kagami-no naka-no zibun$_i$-o nagameta.
     "   mirror's inside's self   watched
     "Alice$_i$ watched herself$_i$ in the mirror."

(52) Alice$_i$-wa zibun$_i$-no tsumi-o hazita.
     "   self's   crime was ashamed of
     *"Alice$_i$ was ashamed of herself's$_i$ crime."

(53) Alice$_i$-wa (zibun$_i$-to imooto-ga kaita) e-o Bill-ni okutta.
     "   self and younger   drew picture Bill-to sent
                         sister
     *"Alice$_i$ sent the picture to Bill which herself$_i$ and her
          younger sister drew."

(54) Alice$_i$-wa (Bill-ga zibun$_i$-o damashita koto)-o urandeiru.
     "   "   "   self   deceived that   resents
     *"Alice$_i$ resents that Bill deceived herself$_i$."

(55) Alice$_i$-wa (zibun-ga Bill-o koroshita) yume-o mita.
     "   senf   "   killed   dream saw
     *"Alice$_i$ dreamt a dream that herself$_i$ killed Bill."

(56) Alice$_i$-wa (zibun$_i$-ga shitaitoki dake) benkyosuru.
                Adv.S   Adv.S
     "   self   want to do only study
     *"Alice$_i$ studies only when herself$_i$ want to do so."

(57) *(Alice-ga shitaitoki dake) zibun$_i$-wa benkyosuru.
     *"When Alice$_i$ wants to do so, herself$_i$ studies."

(58) *(Zibun$_i$-o aishiteita) otoko-ga Alice$_i$-o koroshita.
     self   loved   man   "   killed
     *"The man who loved herself$_i$ killed Alice$_i$."

(59) *(Zibun$_i$-o aishiteita) otoko-ga (Alice$_i$-o nikundeita) otoko-o
      self   loved   man   "   hated   man
      koroshita.
      killed
    *"The man who loved herself$_i$ killed the man who hated
      Alice$_i$."

In the above sentences (51) through (56) the second occurrence of Alice
cannot reflexivize the first one. The ungrammaticality of (57), (58)
and (59) indicates that the antecedent should <u>precede and command</u> the
NP to be reflexivized. Actually (57) and (58) and (59) reveals more
about Japanese syntax. (57) has the grammatical version such as:

(60) (Zibun$_i$-ga shitaitoki dake) Alice$_i$-wa benkyosuru.
      self   wants to do only   "   study.
    *"Only when herself$_i$ wants to do so, Alice$_i$ studies."

(56) and (60) indicate that Reflexivization should precede Adverb Preposing.
(58) and (59) have the following grammatical counterparts respectively.

(61) (Alice$_i$-o aishiteita) otoko-ga $\begin{Bmatrix} \text{kanojo-o} \\ \text{Alice-o} \end{Bmatrix}$ koroshita.
           "   loved   man $\begin{Bmatrix} \text{her} \\ \text{Alice} \end{Bmatrix}$ killed

    "The man who loved Alice killed $\begin{Bmatrix} \text{her} \\ \text{*Alice} \end{Bmatrix}$."

(62) (Alice$_i$-o aishiteita) otoko-ga $\begin{Bmatrix} \text{kanojo-o} \\ \text{Alice-o} \end{Bmatrix}$ nikundeita otoko
         "   loved   man   hated
    otoko-o koroshita.
      man   killed
    "The man who loved Alice$_i$ killed the man who hater $\begin{Bmatrix} \text{her}_i \\ \text{*Alice.} \end{Bmatrix}$ "

(61') <u>S.S.</u>

(62') S.S.

```
                          S
              /                     \
            NP                       VP
         /      \                  /      \
        S        NP              NP        V
     /     \      |            /    \      |
Alice_i-o aishiteita otoko    S     NP  koroshita
                              |      |
                       { kanojo-o_i } otoko
                       { [+Pro]     } nikundeita
                       { Alice_i    }
```
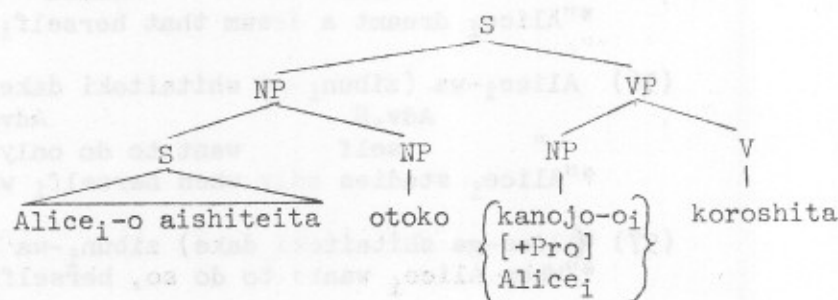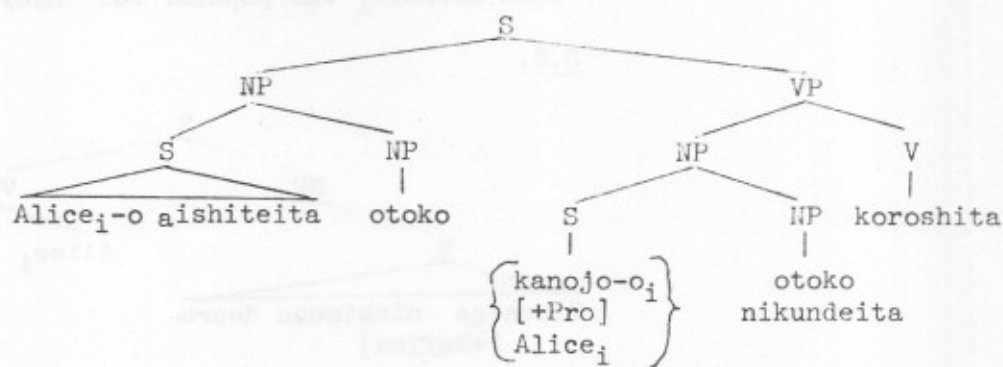
(61') and (62') indicate that if the antecedent precedes but does not
command the coreferential NP in the sentence, then Reflexivization is
blocked and Pronominalization takes place. Also in Japanese the second
occurrence of the coreferential NP can be repeated as the two sentences
above show. They are perfectly good sentences of Japanese. Thus, in
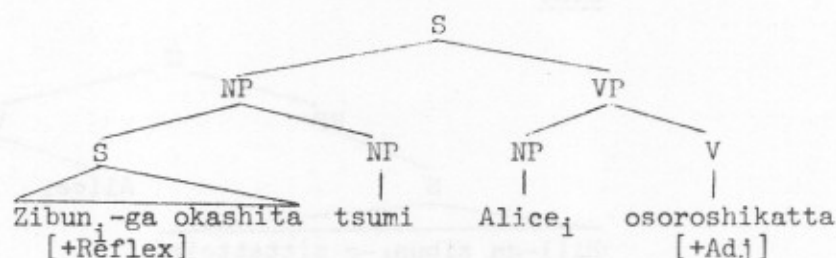certain environments 'Pronominalization' in the sense of identity
deletion is optional in Japanese.

Anyway, the above examples seem to convince us that Backward
Reflexivization is not allowed in Japanese. Ross maintains in his
dissertation that "the rule of Reflexivization can, in every language I
know of, be formulated unidirectionally" (p. 479). However, we are in
serious trouble. For there are a significant number of sentences in
which Backward Reflexivization does seem to take place. Consider the
following.

(63)   (Zibun_i-ga okashita) tsumi-ga Alice_i-niwa osoroshikatta.
         self   committed crime   "   -to   was fearful
       *"The crime which herself_i had committed was fearful to
           Alice_i."

       S.S.

```
                        S
              /                   \
            NP                     VP
         /      \                /      \
        S        NP            NP        V
     /     \      |            |         |
Zibun_i-ga okashita tsumi   Alice_i  osoroshikatta
[+Reflex]                            [+Adj]
```

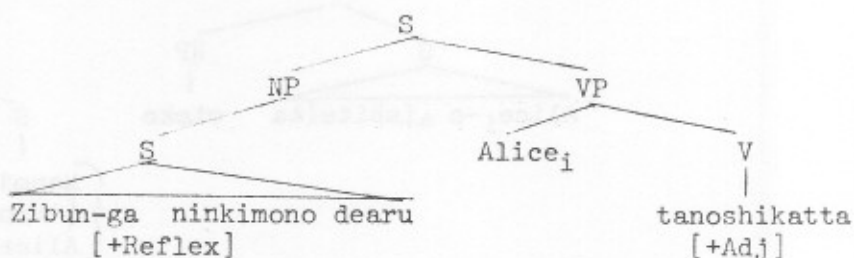(64)   (Helen-ga zibun_i yori utsukushii)koto-ga Alice-niwa
                  self   more than beautiful "   -to
                  urayamashikatta.
                  was enviable
       *"That Helen is more beautiful than herself_i was enviable
           to Alice_i."

(65) (Zibun$_i$-ga ninkimono dearu koto)-ga Alice-niwa tanoshikatta.
     self   popular   be   that   "   -to   enjoyable
    *"That herself$_i$ was popular was enjoyable to Alice$_i$."

<u>S.S.</u>

(66) (Helen-ga zibun$_i$-yori utsukushii koto)-ga Alice-niwa nikukatta.
           "   self more than beautiful that   " -to   hateful
    *"That Helen was more beautiful than herself$_i$ was hateful
        to Alice$_i$."

<u>S.S.</u>
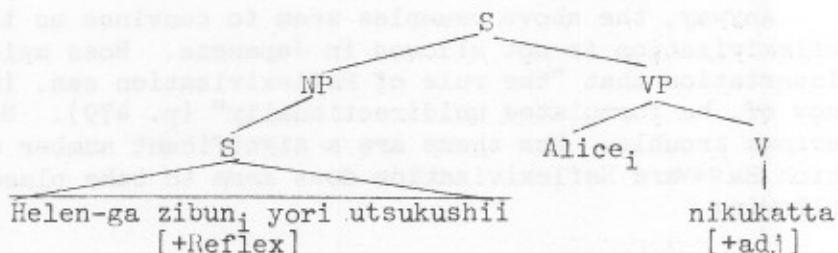
(67) (Bill-ga zibun$_i$-o sittateiru koto)-ga Alice$_i$-niwa awaredatta.
     "   self   adored   that   "   to was pitiful
    *"That Bill adored herself$_i$ was pitiful to Alice$_i$.

<u>S.S.</u>
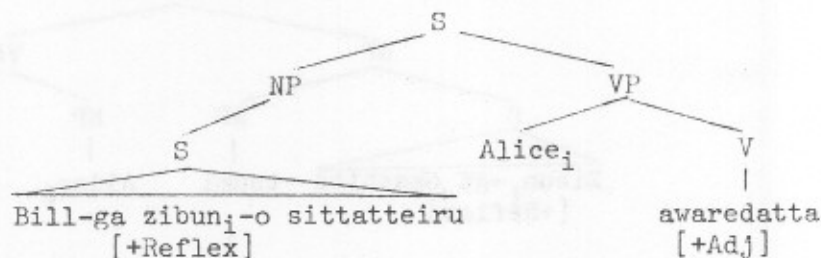
(68) (Zibun$_i$-ga okashita) tsumi-ga Alice$_i$-niwa hazukashikatta.
     self's   committed crime   " -to   was shameful
    *"The crime which herself$_i$ had committed was shameful
        to Alice$_i$."

S.S.

```
                    S
          ┌─────────┴─────────┐
         NP                   VP
     ┌────┴────┐          ┌────┴────┐
     S        NP         NP         V
   ┌─┴─┐       │          │         │
Zibunᵢ-ga okashita tsumi  Aliceᵢ  hazukashikatta
[+Reflex]                          [+Adj]
```

(69) (Zibunᵢ-ga Bill-ni nikumareteiru koto)-ga Aliceᵢ-niwa
    self   " -by is hated   that   Alice-to
            kanashikatta.
            was sad
    *"That herselfᵢ was hated by Bill was sad to Aliceᵢ."

S.S.

```
                 S
          ┌──────┴──────┐
         NP             VP
     ┌────┴────┐     ┌───┴───┐
     S             Aliceᵢ    V
   ┌─┴─┐                     │
Zibunᵢ-ga Bill-ni nikumareteiru   kanashikatta
[+Reflex]                          [+Adj]
```
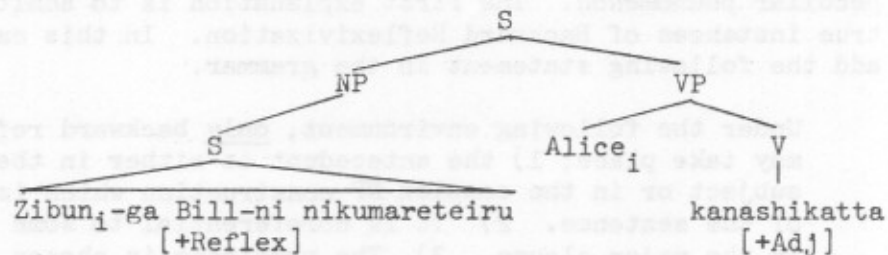
Since in every sentence the first of the two coreferential NP's
<u>precedes but does not command the second one</u>, it should be the case tha
Reflexivization be blocked and Pronominalization take place. However,
mysteriously enough, Backward Reflexivization takes place. The
grammaticality of the following sentences shows that Pronominalization
operates in these constructions, as our principle predicts.

(70) (Alice-ga okashita) tsumi-ga kanojo-niwa osoroshikatta.
    "The crime which Aliceᵢ had committed was fearful to
      herᵢ."

(71) (Helen-ga Aliceᵢ yori utsukushiikoto)-ga kanojoᵢ niwa
    urayamashikatta.
    "That Helen was more beautiful than Aliceᵢ was enviable
      to herᵢ."

(72) (Aliceᵢ-ga ninkimono dearu koto)-ga kanojoᵢ-niwa
    tanoshikatta.
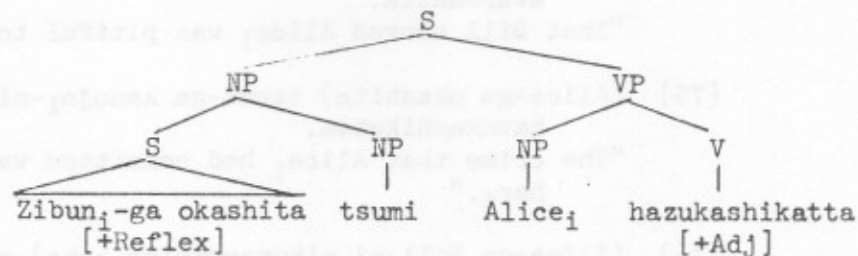   "That Aliceᵢ was popular was enjoyable to her."

(73) (Helen-ga Aliceᵢ-yori utsukushii koto)-ga kanojoᵢ-niwa
    nikukatta.
    "That Helen was more beautiful than Aliceᵢ was
      hateful to herᵢ.

(74) (Bill-ga Alice$_i$-o sittatteiru koto) ga kanojo-niwa
        awaredatta.
      "That Bill adored Alice$_i$ was pitiful to her$_i$."

(75) (Alice-ga okashita) tsumi-ga kanojo$_i$-niwa
        hazukashikatta.
      "The crime that Alice$_i$ had committed was shameful to
        her$_i$."

(76) (Alice-ga Bill-ni nikumareteiru koto)-ga kanojo-niwa
        kanashikatta.
      "That Alice was hated by Bill was sad to her.

Kanojo in the above sentences is ambiguous in that it has two
readings. One refers to Alice. The other refers to some other human
female identifiable to the speaker and the hearer. In my dialect the
latter reading is more natural than the former one, but it is irrelevant
to the present discussion.

The mystery of Backward Reflexivization still remains to be
explained. Clearly there are only two possibilities to account for this
peculiar phenomenon. The first explanation is to admit that there are
true instances of Backward Reflexivization. In this case we have to
add the following statement in the grammar.

Under the following environment, only backward reflexivization
may take place; 1) the antecedent is either in the sentential
subject or in the complex NP construction which is the subject
of the sentence. 2) It is coreferential to some NP which is
in the major clause. 3) The predicate is chosen among a
group of psychological adjectives which is so marked in the
lexicon that they may undergo Backward Reflexivization.

The second explanation is to say that first, forward reflexivization
takes place, and then some transformational rule applies so that the NP
which contains the reflexivized form is to be chosen by Subject Formation
as the subject of the surface structure.

The first solution must be rejected for the following reasons:
1) It cannot be a mere accident that only those predicates which
require their Experiencer NP to be in the non-subject position must
undergo backward reflexivization. 2) This treatment cannot explain why
ordinary forward reflexivization cannot operate in the very environment
in question. 3) The grammar becomes more complex and less general
without any convincing reasons.

If we postulate a Psych Movement rule in Japanese grammar and
maintain the correct ordering relationship between it and a Reflexi-
vization rule, then this phenomenon can be explained very simply and
systematically. That is, Reflexivization precedes Psych Movement.

The grammar of a human language is a tightly organized system.
An independently motivated rule often gives strong evidence for the
existence of other rules. We have demonstrated that the relationship
of Psych Movement and Reflexivization in Japanese is just one of those
examples.

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Schematically, (2) could be represented as $[P^{gen} \to B]$ be A.

    (3) NEYG SHEAUHARL TOURFAA HEI
           'that-child-hair-be black'

In Fillmore's notation, (3) clearly seems to be a case of $P^{dat}[B^{nom}$ be A]. A somewhat dialectal or substandard-sounding English equivalent might be 'That child his hair is black'; otherwise, we would have to fall back upon the forms given in (1) and (2). Note, however, that optional fronting of the <u>direct object</u> (usually for emphatic purposes) is frequent both in Mandarin and in English:

    (4) NEY BEEN SHU WOO YIIJING DWU LE
           "that-AN (auxiliary noun)-book-I-already-read-FP
               (final particle)"
           "That book I've already read."

(b) Mandarin has no special class of words corresponding to prepositions in English. There does exist a fairly limited set of verbs which become lexically weakened and form verb-noun combinations expressing much the same thing as do English prepositional phrases. Since such constructions will be appearing in examples later on, they deserve a fairly detailed description here.

    Verb-noun combinations of the above type may include as components:

    A. CRV's - case-relator verbs, which show case relationships between an Object, Source, or Goal and the rest of the Proposition. Some commonly used CRV's include:

        GEN - literally 'to follow', corresponding in usage to
            English 'with' or 'and' in the sense of 'accompanied
            by' (Cf. Japanese <u>to</u>). E.g. (5):

    (5) WOO MINGTIAN GEN NII WAL, HAO BA?
           "I-tomorrow-with-you-play, OK-FP?"
           "Let's you and me play tomorrow, OK?"

        GEEI - literally, 'to give', corresponding to English 'to'
            or 'for' in the benefactive sense. E.G. (6):

    (6) TA GEEI WOO TZUOH LE JII JFANN IFWU
           "She?for-me-make-ASP (aspect marker)-several-AN-
              clothes"
           "She made me some clothes."

Some Cases for Case in Mandarin Syntax*

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In this essay, I will attempt to explain some conceptual
differences between the syntax of American English and Mandarin
Chinese. The descriptive framework used will run along the lines of
"case syntax" theory as first proposed and later extensively developed
by Charles J. Fillmore.[1]

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[1]See, for instance, Fillmore (1968a). I will also be drawing
upon material presented in Fillmore's lectures on Case Syntax at
the LSA 1970 Summer Institute.

Let me first point out two of the more salient similarities in
Mandarin and English grammar relevant to our discussion: (a) both
languages lack the highly developed surface case-marking systems of
Latin, German, and Russian. Mandarin does not even inflect personal
pronoun object forms as does English. Also, (b) the preferred surface
word order in both Mandarin and English is subject-verb-object. Two
major differences should also be pointed out: (a) Mandarin can front
a "topic of discourse" and follow it immediately with a surface
subject, through a process which Fillmore calls "secondary topicali-
zation" (Fillmore (1968a), 57). In English the corresponding form
would be dialectal or sub-standard for most speakers. This point is
strikingly illustrated when we look at the forms English and Mandarin
have available for the description of inalienable body parts:

    (1) NEYG SHEAUHARL YEOU HEI DE TOURFAA
          "that-child-has-black-SUB (subordinating particle)-hair"
          "That child has black hair."

or in Fillmore's (1968a, 63-64) notation: P^{nom}have $[A \rightarrow B^{acc}]$ where
P = possessor, A = adjective, and B = body part.

    (2) NEYG SHEAUHARL DE TOURFAA HEI.
          "that-child-SUB-hair-be black"
          "That child's hair is black."

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*I am indebted to Mr. Chang-Keng Hsu for providing many of the
Mandarin examples cited in this essay.

35

TSORNG - literally 'to follow', corresponding to English 'from'. E.g. (7):

(7) NII TSORNG DAHLUH TAURCHULAI LE MA?
"You-from-mainland-escape-ASP-FP?"
"You escaped from the mainland?"

YONQ - literally 'to use', corresponding to English 'with' (+Instrument), but only in the premeditative sense. For instance, (8); is possible, but not (9):

(8) TA YONQ CHWEITZ DINQ JINN LE I GEN DINGTZ
"He-with-hammer-drive-in-one-AN-nail"
"He drove in a nail with the hammer"

(9) *TA TZAY DINQ JINN DINGTZ DE SHYRHOWL YONQ CHWEITZ
DAA LE TA DE MUHJYY LE
"He-be at-drive-nail-SUB-time-with-hammer-hit-ASP-
he-SUB-thumb-FP"

with the intended meaning:

"While driving the nail he hit his thumb with the hammer."

In other words, 'with' can be used with accidental events, but not YONQ, although both introduce an Instrumental noun.

DAW - literally 'to arrive, reach', corresponding to English 'to, toward, until'. E.g. (10):

(10) WOO DAW JONGGWO CHIUH LE
"I- to-China-go-ASP"
"I went to China."

TZAY - literally 'to be at', corresponding to any of various English prepositions. TZAY can be existential, e.g. (11); or directional, e.g. (12):

(11) WOO TZAY DAHSHYUE NIANN SHU
"I-at-university-read-books"
"I'm studying at the university."

(12) WOO TZAY CHOUTIELL LIITOUR FANZ LE SAN BEEN SHU
"I -into-drawer-inside-put-ASP-three-AN-book"
"I put three books in the drawer." (Cf. Latin in +
Ablative vs. in + Accusative).

B. Mandarin also has a class of words we might call CRN's (case-relator nouns), which indicate position and thus often act as Sources or Goals, e.g.

```
LII-TOUR) - the inside part
HOWTOUR - the part behind
CHYANTOUR - the part in front of
SHANQ(TOUR) - the part above, the top of
SHIAHBIAL - the part beneath, below
JONGJIAN - the part between
```

CRH's can combine with other nouns in a genitive-like relationship e.g. CHOUTIELL (DE) HOWTOUR "drawer-SUB-behind part" or "behind the drawer" where CHOUTIELL is in the Dative case and DE is a subordinating particle which occurs idiosyncratically before CFN's. Note also that CRN's combine with CRV's (often TZAY and DAW) to form phrases like

$$\left\{ \begin{array}{c} \text{DAW} \\ \text{TZAY} \end{array} \right\} \text{CHOUTIELL LII(TOUR)} \left\{ \begin{array}{c} \text{to} \\ \text{at} \end{array} \right\} \text{-drawer-inside'} \quad \text{or}$$

$$\left\{ \begin{array}{c} \text{Into} \\ \text{In(to)} \end{array} \right\} \text{the drawer'. (cf. (12))}$$

As in English, Mandarin nouns dominated by the Agent node often become surface subjects,[3] whereas those dominated by the Object node

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[3]Mandarin has no CRV phrase corresponding to English 'by' + Agent.

---

become direct objects. Neither Agent nor Object has any CRV explicitly associated with it. Also, in Propositions where the verb syntactically requires a Goal and optionally allows an Object, those two case categories may in certain cases be distinguished only by word position and semantic environment, rather than by a CRV. For instance:

> (13) WOO YAW WENN NII I G WENNTYI
> "I-want-ask-use-one-AN-question"
> "I want to ask you a question."

but not

> (14) *WOO YAW GEEI NII WENN I G WENNTYI
> (cf. English *I want to ask to you a question.)

Also,

> (15) TA IDEAL CHYAN DOU BU GEEI WOO
> "He-a bit-money-all-not-give-me"
> "He wouldn't give me a cent."

but not

(16) *TA IDEAL CHYAN DOU BU GEEI GEEI WOO[4]

---

[4]Which verbs require a CRV with what case nodes, and also how case-realtor phrases are themselves positioned in the sentence, are problems too complex to discuss here.

In "Lexical entires for Verbs", Fillmore (1968a, 57) notes that the verb 'hit' in English conceptually requires an Instrument, a Place (we will be using the term 'Object' here) and allows an optional Agent. If we assume such terms as Agent, Object, and Instrument to be case universals, then the Mandarin verb DAA is one fairly close conceptual equivalent to English 'hit',[5] Syntactically speaking,

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[5]Some minor semantic differences between 'hit' and DAA will become evident later (see note

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however, there are some differences:

(a) In Mandarin, the Object of DAA does not have to surface if it is understood; in fact, if the understood Object is non-human, it rarely surfaces at all. For example: (17) becomes (18):

    (17) MAU TZERDONG DAA LE CHUANGHUH LE
        "Mao Tse-tung-hit-ASP-window-FP"
        "Mao Tse-tung hit the window."

    (18) MAU TZERDONG DAA LE
        "Mao Tse-tung-hit-FP"
        "Mao Tse-tung hit it."

There are actually many Mandarin verbs whose syntactic case frameworks may be permanently or optionally identical to that of DAA; these verbs may also opt for non-surfacing of an understood Object, e.g.

    (19) MAU TZERDONG TOU LE
        "Mao Tse-tung-steal-FP"
        "Mao Tse-tung stole it."

    (20) LIN BIAU MAE LE
        "Lin Piao-buy-FP"
        "Lin Piao bought it."

In contrast, English must express a third-person object pronoun (at least when an Agent has also been surface-expressed); sentences like *He hit, *He bought, or *He stole are not allowed.[6]

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[6]At least, *He hit, etc. are unacceptable as responses to questions of the type Did he hit it?.

(b) In English, we can have at least two different forms when the Object of 'hit' is someone's inalienable body part, e.g.::

(21) "Mao Tse-tung hit Lin Piao's nose"

where the Dative 'Lin Piao' surfaces with the possessive marker 's'; and also

(22) "Mao Tse-tung hit Lin Piao on the nose"

where 'Lin Piao' receives no particular surface marking, although it is still Dative.

In Mandarin, only one form is available, corresponding to (21) e.g., (23), never (24).

(23) MAU TZERDONG DAA LE LIN BIAU DE BYITZ LE
"Mao Tse-tung-hit-ASP-Lin Piao-SUB-nose-FP"
"Mao Tse-tung hit Lin Piao's nose"

(24) *MAU TZERDONG DAA LE LIN BIAU TZAY BYITZ (SHANQ) LE
"Mao Tse-tung-hit-ASP-Lin-Piao-on-nose('s top)-FP"

This is interesting because as we saw earlier (3), Mandarin does permit an unmarked Dative when the body part is the surface <u>subject</u>.

(c) In English, it is frequent for the Instrument to surface as subject with verbs like 'hit', e.g.:

(25) "The piano keys activate hammers, the hammers hit
strings, and the strings produce sounds"

(26) "The ball hit the window, shattering it"

The Object of a Proposition may also become subject under certain conditions:

(27) "The window was hit several times"

Although in Mandarin, some of the rules for subjectivizing Instruments and Objects are quite similar to those in English, others are quite different. We will discuss these rules in more detail shortly.

We now turn to a comparison of English 'break' and Mandarin POH, where these verbs belong to a set of verbs in either language which refer to the falling apart of an Object under impact or pressure. For example:

English:		Mandarin:	
	break		POH
	shatter		SUEY
	collapse		KOA or TA
	snap		DUANN

Conceptually speaking, it is difficult to say that there is any difference between 'break' and POH type verbs. Both require an Object, tolerate an Instrument, and allow an Agent only when an Instrument is conceptually present. Syntactically speaking, however, 'break' and POH are quite different, in ways one might not suspect. That is, the frequent occurrence of English 'break'-type verbs with Object alone tends to blind us to an important fact: almost every English verb that has a syntactically obligatory Object can express an appropriate Agent and/or Instrument within the same simple Proposition:

> (28) "Mao Tse-tung broke the window."
> "A rock broke the window."
> "The window was broken by Mao Tse-tung/a rock."
> "Mao Tse-tung broke the window with a rock.", etc.

The few exceptions in English include 'collide', 'die', 'fall', 'rise', and 'arise'.

With POH and dozens of other verbs in Mandarin,[7] practically the

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[7] See Chao (1968, 444-46) for a list of such verbs.

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opposite is the case. We can say (29) but never (30) and (31):

> (29) CHUANGHUH POH LE
> "The window broke."
>
> (30) *MAU TZERDONG POH LE CHUANGHUH LE
> "Mao Tse-tung broke the window."
>
> (31) *SHYRTOUR POH LE CHUANGHUH LE
> "The rock broke the window."

In other words, only the Object can surface when POH is the only verb in the Proposition.

If, then, Agent and/or Instrument are conceptually present with verbs like POH, how might they get expressed? There are several possibilities:

> (32) Two simple sentences:
> MAU TZERDONG DAA LE CHUANGHUH LE; CHUANGHUH POH LE
> "Mao Tse-tung hit the window, the window broke."
>
> (33) A subordinate clause linked to an independent one:
> MAU TZERDONG DAA LE CHUANGHUH YIIHOW, CHUANGHUH
>   "after"
> JIOW POH LE
> "then"
> "After Mao Tse-tung hit the window, the window then
>   broke."

(34) A sentential subject with the main verb indicating
      'cause'::
            MAU TZERDONG DAA CHUANGHUH SHYY CHUANGHUH POH LE
                                    'cause'
            "Mao Tse-tung's hitting the window caused the window
                 to break."[8]

----

[8]Sentential subjects require no special marking in Mandarin as
they do in English.

One other alternative, in fact, the one most frequently used, the
resultative-complement construction (RCC). Here the Agent (e.g. MAU)
becomes subject, the instigative verb (e.g. DAA) and the resultative
verb (e.g. CHUANGHUH) surfaces as the direct object, giving:

(35) MAU TZERDONG DAA POH LE CHUANGHUH LE
      "Mao Tse-tung broke the window (by hitting it)."

One recent transformational analysis of RCC's can be found in
Anne Y. Hashimoto's Embedding Structures in Mandarin (1966, 135-54),
where the author proposes the following deep structure diagram (nodes
are filled in with lexical items from (35):[9]

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[9]Hashimoto (1966, 234). Although Hashimoto gives the structural
diagram for a slightly different sentence (it has a negative and no
final particle; (35) vice versa), the terminology we are using is
justified by trees given elsewhere in her work (cf. 235-36 and 150-53).
Hashimoto's node labelling conventions are followed exactly, except
that FP has been substituted for F (final particle).

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(36)
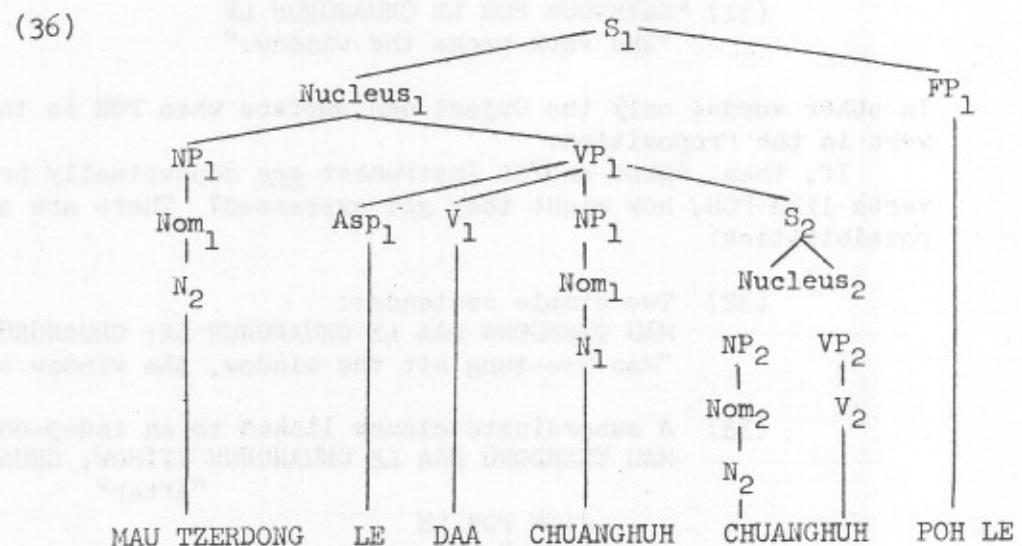
To summarize briefly, Hashimoto's resultative transformation (p.232-33)

collapses together elements of VP_1, deleting the extra CHUANGHUH and leaving the surface structure: (p. 234. Comments as in note 8)

(37)

```
                              S₁
                 ┌────────────┴────────────┐
            Nucleus₁                       FP₁
         ┌──────┴──────┐
       NP₁            VP₁
        │        ┌──┬──┴───┬────┐
      Nom₁      Asp₁ V₁  V₂   NP₁
        │        │   │    │    │
       N₁                      Nom₁
        │                      │
     MAU TZERDONG  LE DAA  POH CHUNGHUH  LE
```
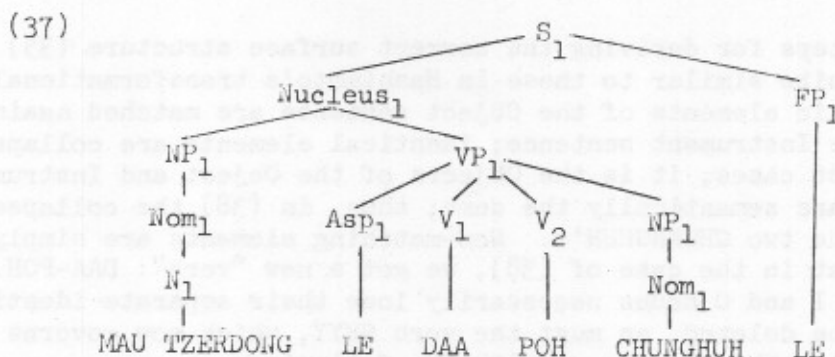
which yields (35) upon aspect-transportation.[10]

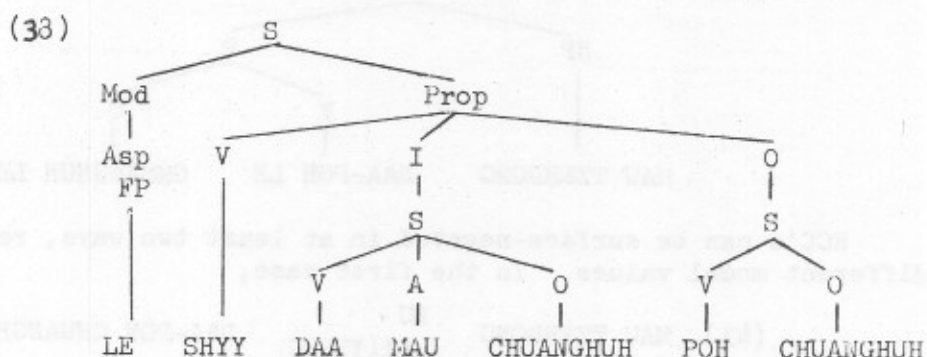[10]In preceding tree structures and in ones to follow, aspect and final particle nodes will be represented only in a most ad hoc fashion. Mandarin aspect is too complicated a subject to discuss formally at this time; in any case, its presence or non-presence, whether it should be associated with the V node or instead the Mod node, and so on, are not too critical to our arguments.

I will now propose another deep structure tree to account for RCC's, not because I think Hashimoto's analysis is basically "wrong", but because I feel that case syntax can provide some new insights into the problem:

(38)

```
                         S
               ┌─────────┴─────────┐
             Mod                  Prop
              │          ┌─────┬────┴────────┐
             Asp         V     I             O
             FP          │     │             │
              │          │     S             S
              │          │  ┌──┼──┐        ┌──┴──┐
              │          │  V  A  O        V     O
              │          │  │  │  │        │     │
             LE        SHYY DAA MAU CHUANGHUH POH CHUANGHUH
```

The above tree is ostensibly derived from sentences of the type (34); the instigative sentence MAU DAA CHUNAGHUH is embedded as the Instrument of causation, whereas the resultative sentence CHUANGHUH POH is the Object of causation. This is actually quite close to the argument Fillmore mentions for deriving "Fred broke the lens" from "Fred cause (the lens break)":

"In each case the subject of the underlying verb CAUSE is the subject of the transitive sentence; the analysis interprets the sentences as representing the proposition that the entity identified by the subject

> NP of CAUSE is causer of an event characterized by
> the intransitive sentence." (Fillmore (1970) 35-36).

The steps for deriving the correct surface structure (35) from (38)
are quite similar to those in Hashimoto's transformational rule. First,
semantic elements of the Object sentence are matched against those
of the Instrument sentence; identical elements are collapsed as one.
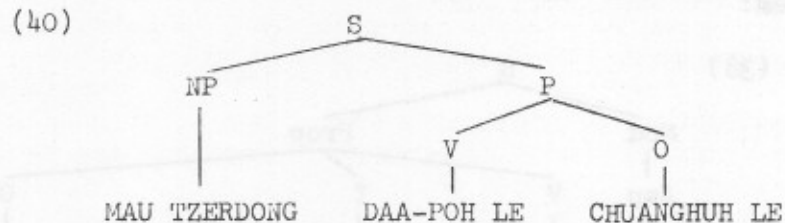In most cases, it is the Objects of the Object and Instrument sentences
that are semantically the same; thus, in (38) the collapsed elements
are the two CHUANGHUH's. Non-matching elements are simply concatenated,
so that in the case of (38), we get a new "verb": DAA-POH. Thus,
upper I and O nodes necessarily lose their separate identities and
must be deleted, as must the verb SHYY, which now governs no nodes
at all. This leaves us with the following:

(39)

```
                    S
           _____|_____
          |                   |
         Mod                 Prop
          |                   |
         Asp                  S
               _____|_____
              |               |               |
              V               A               O
          ____|____           |               |
         |         |          |               |
        LE      DAA-POH   MAU TZERDONG     CHUANGHUH
```
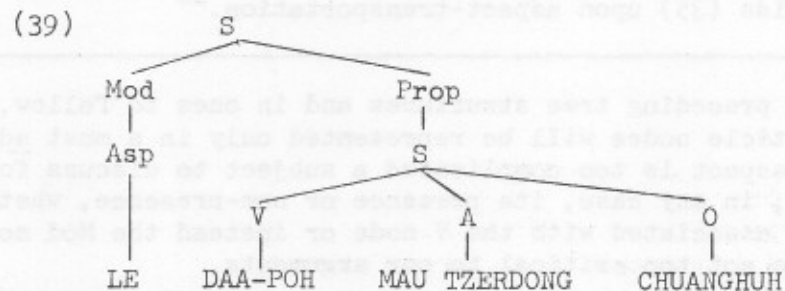
Since Prop now governs only one node, which is itself a sentence, we
can simply delete the S node. After subject raising and modal
adjustments, we get:

(40)

```
                         S
            _____|_____
           |                           |
          NP                           P
           |                    _____|_____
           |                   |               |
           |                   V               O
           |                   |               |
      MAU TZERDONG        DAA-POH LE      CHUANGHUH LE
```
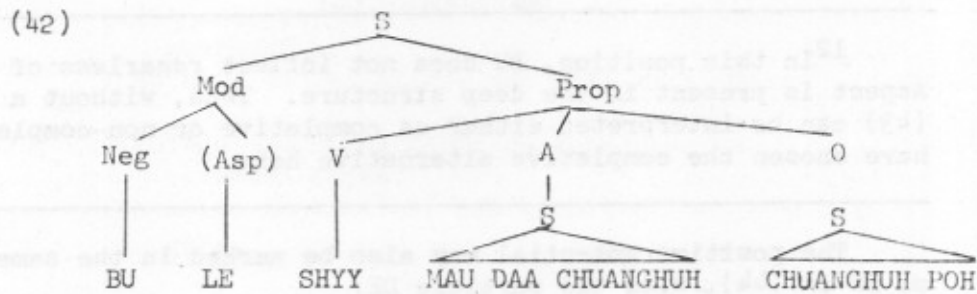
RCC's can be surface-negated in at least two ways, reflecting
different modal values. In the first case,

(41) MAU TZERDONG   BU
                      MEI(YEOU)   DAA-POH CHUANGHUH[11]

---

[11]BU is negator of the Verb Phrase in Mandarin; when the verb
is marked for the completive aspect, BU usually changes to MEI(YEOU).

---

the deep structure representation is (42).

45

(42)

```
                    S
           /                 \
         Mod                  Prop
        /   \               /      \
      Neg  (Asp)     V     A          O
       |     |       |     |          |
                           S          S
                        /  |  \     /     \
       BU    LE    SHYY MAU DAA CHUANGHUU CHUANGHUU POH
```

with the literal meaning: "Mao may or may not have instigated the event described in the Instrument sentence; in any case, he did not cause the event described in the Object sentence to happen". This can be used in several situations:

(a) Mao hit the window, but he didn't break it. In any case, breakage of the particular window definitely did not occur.
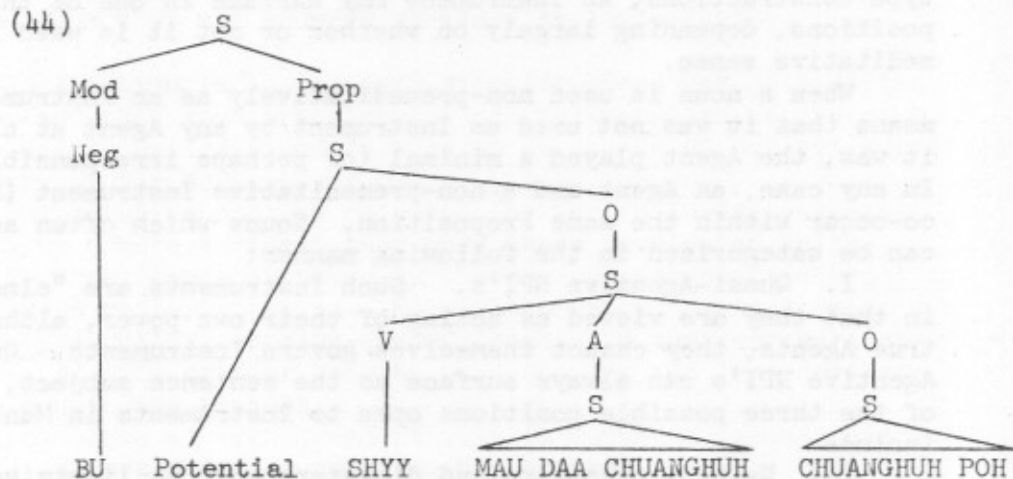
(b) Mao hit the window, but it wasn't Mao who broke the window, although breakage of the particular did occur. Perhaps Lin Piao broke it.

(c) Mao had nothing to do with the hitting and possible resultant breakage of a particular window. Whether the said window was hit and thereby possibly broken is not specified or known.

In the second case, the negative marker occurs after DAA and before POH:

(43) MAU TZERDONG DAA BU POH CHUANGHUU

with the following deep structure:

(44)

```
                S
           /          \
         Mod           Prop
          |             |
         Neg            S
          |          /        \
                              O
                              |
                              S
                           /      \
                  V       A         O
                  |       |         |
                          S         S
                       /  |  \    /     \
         BU  Potential SHYY MAU DAA CHUANGHUU CHUANGHUU POH
```

Literally, (44) means: "Mao instigated the event described in the Instrument sentence in an attempt to cause the event described in the Object sentence to happen; his attempt was unsuccessful." In other words, "Mao hit the window in an attempt to break it, but he couldn't get it to break."[12]

---

[12]In this position, BU does not inflect regarless of whether
Aspect is present in the deep structure. Thus, without a context,
(43) can be interpreted either as completive or non-completive; we
have chosen the completive alternative here.

The positive potential may also be marked in the same position
as BU in (44), with the particle DE:

> (45) MAU TZERDONG DAA DE POH CHUANGHUH
> "Mao Tso-tung hit the window in an attempt to break
>   it and in fact got it to break."

The deep structure tree for (45) looks like the tree for (44),
except that Mod does not contain Neg.

The above analyses are justified by the fact that there exist
sentences synonymous with (32) and (34) but which use the explicit
potential verb NENGGOW "be able":

> (46) MAU TZERDONG NENGGOW DAA POH CHUANGHUH (cf. (45)).
> (47) MAU TZERDONG MEI NENGGOW DAA POH CHUANGHUH (cf. (43)).

The corresponding tree structures are the same, except that this time
the potential node gets realized as NENGGOW.

As we noted earlier, there are certain restrictions on the
syntactic expression of Instrument in sentences with verbs of the type
DAA and POH. When POH occurs alone, there is no sentence position in
which a noun can surface as Instrument. However, with DAA or DAA-POH
type constructions, an Instrument may surface in one of three sentence
positions, depending largely on whether or not it is used in a pre-
meditative sense.

When a noun is used non-premeditatively as an Instrument, this
means that it was not used as Instrument by any Agent at all, or if
it was, the Agent played a minimal (or perhaps irresponsible) role.
In any case, an Agent and a non-premeditative Instrument (NPI) cannot
co-occur within the same Proposition. Nouns which often act as NPI's
can be categorized in the following manner:

I. Quasi-Agentive NPI's.   Such Instruments are "almost" Agents
in that they are viewed as acting of their own power, although, unlike
true Agents, they cannot themselves govern Instruments. Quasi-
Agentive NPI's can always surface as the sentence subject, the first
of the three possible positions open to Instruments in Mandarin. They
include:

(a) Natural phenomena and disasters such as lightning, typhoons,
earthquakes, hailstorms, floods, famines, and so forth; e.g.:

> (48) LEIDIANN DAA DAO LE SAN KE SHUH
> "Lightning-hit-overturn-ASP-three-AN-tree"
> "Lightning struck down three trees."

Since the occurrence of such events is ultimately beyond human control,

they are invariably non-premeditative when used as Instruments.

(b) Instruments involved in processes and actions which are largely automatic, requiring a minimum of Agental instigation, if any:

> (49) GANGCHYNJIANN SHYY CHEWEITZ HWODONQ; CHWEITZ DAA
>   SHYAN; SHYAN FACHU SHENGIN
>   "Piano keys-cause-hammers-move; hammers-hit-strings;
>   strings-produce-sound" (cf. (25)).

(c) Instruments like vehicles, trains, ships, airplanes, and so forth, whose operation requires such constant human supervision and control that such Instruments apparently get identified "as" rather than "vs." their Agent utilizers:

> (50) CHETZ DAA-DAO LE DIANNSHIANNGAAN LE
>   "car"   "telephone pole"
>   "The car knocked down the telephone pole."

II. Non-quasi-Agentive NPI'S. Nouns that can be used as this type of NPI include rocks, trees, implements, furniture and other immobilia; in general, anything capable of being Instrumental in an "accidental" or "passive" way. Non-Quasi-Agentive NPI's usually end up as the subject of the Proposition:

> (51) NEY PIANN BOLI CHIEH SHANG LE WOO DE JEAU LE
>   "that-piece-glass-cut-injure-ASP-I-SUB-foot-FP"
>   "That piece of glass injured my foot."

> (52) NEYBIAL DE NEY JY SHUHGEN BANN DAO LE MAU JUUSHYI LE
>   "over there-SUB-that-AN-tree root-ensnare-overturn-
>   ASP-Mao-chairman-FP"
>   "That tree root over there tripped Chairman Mao."

> (53) SHYRTOUR PENQ POH LE WOOMEN DE DAANGFENGBOLI LE
>   "rock-collide with-break-ASP-we-SUB-windshield-FP"
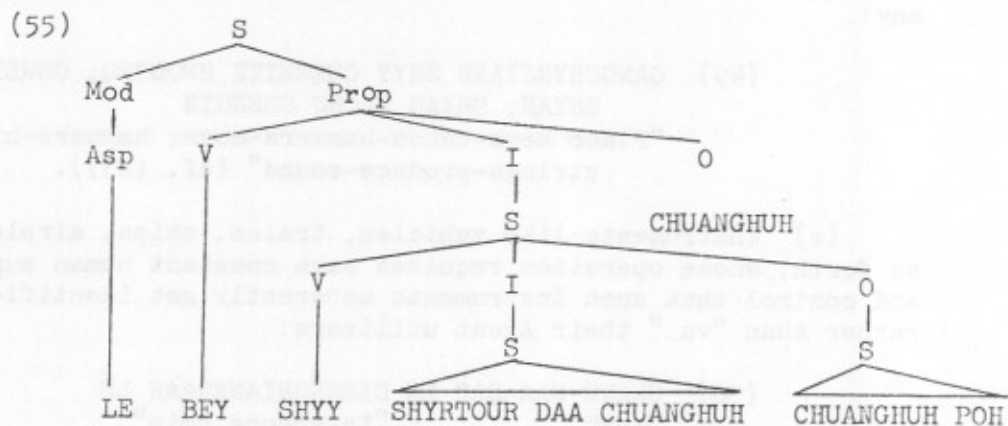>   "The rock broke through our windshield."

Things get more complex when we try to use nouns like SHYRTOUR as non-quasi-Agentive NPI's with verbs like DAA 'hit' and TUEI 'push'. Apparently DAA and Tuei require at least a conceptual Agent where the associated Instrument does not imply one strongly enough. In any case, sentences like

> (54) *SHYRTOUR DAA LE CHUANGHUH LE
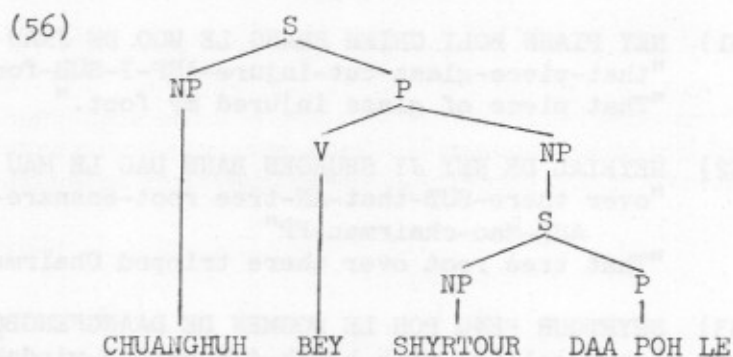>   *SHYRTOUR DAA POH LE CHUANGHUH LE

are unacceptable. This does not mean that we cannot express the desired relationship between SHYRTOUR as an NPI and, say, DAA POH; rather, we use a different construction. The string SHYRTOUR DAA POH CHUANGHUH is simply embedded as the Instrument node of a higher verb, BEY, which takes as its syntactically required Object of the

appropriate lower verb. Sentences with BEY are often translated into English with the passive.

The deep structure for BEY sentences is as follows:

(55)

```
                              S
                   ┌──────────┴──────────┐
                  Mod                    Prop
                   │              ┌────────┼──────────┐
                  Asp      V      I                   O
                                  │
                                  S                 CHUANGHUH
                           ┌──────┼──────┐
                           V      I       O
                                  │       │
                                  S       S
                                ┌─┴─┐   ┌──┴──┐
   LE      BEY     SHYY    SHYRTOUR DAA CHUANGHUH  CHUANGHUH POH
```

Transformations operating on (55) include the RCC-forming rules:
CHUANGHUH in lower Object node is collapsed with CHUANGHUH in the
lower Instrument node; lower I and O nodes and SHYY are then deleted.
Next, CHUANGHUH as Object of DAA POH is collapsed with CHUANGHUH as
Object of BEY. After an obligatory fronting rule has applied to
CHUANGHUH, the following surface structure is reached:

(56)

```
                        S
                 ┌──────┴──────┐
                NP             P
                        ┌──────┴──────┐
                        V             NP
                                      │
                                      S
                                 ┌────┴────┐
                                 NP        P
                                           │
   CHUANGHUH     BEY      SHYRTOUR    DAA POH LE
```

Or:

(57) CHUANGHUH BEY SHYRTOUR DAA POH LE
      "The window was broken by a rock."

What we are saying in (57) is that the rock was not an Instrument
totally through natural causes (as in (53)), but that some Agent
threw it.[13] On the other hand, we are leaving open the question of

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[13]A comparison between (57) and (53) brings out one semantic
difference between 'hit' and DAA: 'hit' can be used to imply an
accidental collision, whereas in Mandarin, PENQ, not DAA, must be
used. Note, however, that if SHYRTOUR is somehow involved in an
automatic process (cf. (49)), DAA can still occur.

in what way the action was pre-meditated: the Agent may have meant
the rock for a different window, or perhaps not even a window at all.
In any case, the overwhelming emphasis in (57) is still on the
Instrument of breakage rather than on the Agent. If we wish (in the
same Proposition) to say that an Agent used a rock specifically for
breaking a particular window, a different construction must be used.[14]

[14]This is one reason why the Instrument in (57) should be
translated with 'by' rather than with 'with'. To me, at least, 'with'
would imply that the action was purposefully directed against the
window in question.

It should be further noted that the BEY construction can
optionally apply to sentences with surfaced Agents, type I NPI's,
and type II NVI's (with verbs as in (51)-(53)), e.g.

> (58) CHUANGHUH BEY MAU TZERDONG DAA POH LE
>   "The window was broken by Mao Tse-tung."

> (59) WOO DE JEAU BEY NEY PIANN BOLI CHIEH SHANG LE
>   "My foot got injured by that piece of glass."

> (60) SHUH BEY LEIDIANN DAA DAO LE
>   "The tree was knocked down by lightning."

The transformations applying to (58)-(60) are basically the same as
for (57). Finally, some speakers of Mandarin omit the surfaced
Agent or Instrument in BEY sentences where they are understood:

> (61) WOO DE JEAU BEY CHIEH SHANG LE (cf. (59); BOLI
>   is understood)

Compare this with the somewhat similar deletion of the 'by' phrase
in the English equivalent 'My foot got injured'.[15]

[15]One minor restriction in the use of the BEY construction
with RCC's is that the identical elements of the Instrument sentence
and the Object sentence must both be Objects (the majority of RCC's
in fact follow this pattern). Occasionally it is the case that the
Agent of the Instrument sentence and the Object of the Object
sentence qualify as identical elements, e.g.:

> (i) TAMEN CHY BAO LE FANN LE
>   "they-eat-fill-ASP-rice-FP"
>   "They ate their fill of rice."

where TAMEN CHY FANN 'They eat rice' is the Instrument sentencean
and TAMEN BAO 'They get full' is the Object sentence. In such
cases, the BEY construction cannot apply:

> (ii) *FANN BEY TAMEN CHY BAO LE

We now turn to Propositions in which an Instrument is involved premeditatively. This means that the Object of the Proposition is part of a goal which has definitely been pre-defined by an Agent,[16]
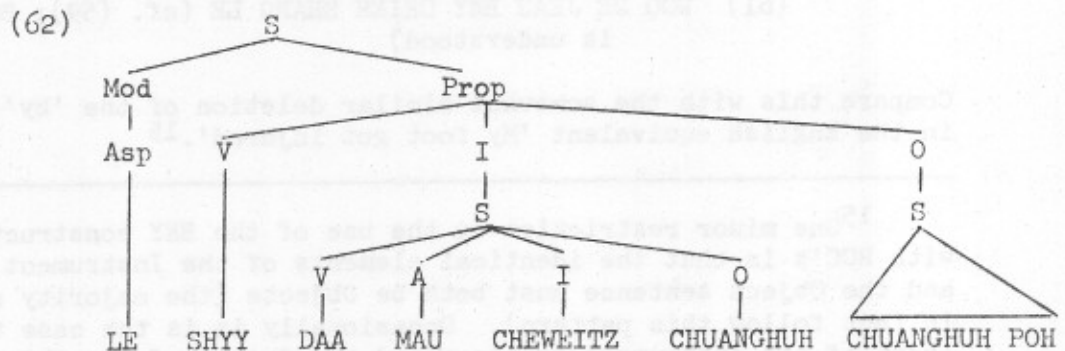
---

[16]Contrast this with (57), where the resultant-event may or may not coincide with the goal-event intended by the Agent.
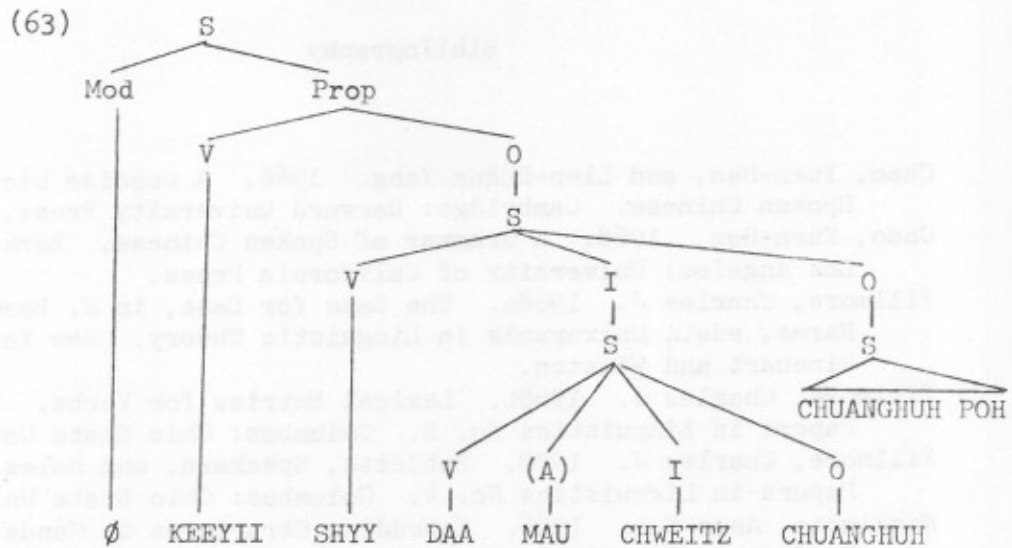
---

and that the Instrument in question has selected by the Agent specifically for the achievement of this goal. The preceding restrictions are reflected in the surface realization of the Proposition in the following manner: (a) The conceptually obligatory Agent must surface either 1) directly, as the sentence subject, and/or 2) indirectly, through an auxiliary verb at the sentence head, which always implies an Agent when the Instrument has been tagged with YONQ.[17]

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[17]Some typical auxiliary verbs include KEEYII 'can, may', INGGAI 'ought to', NENGGOW 'be able to; be possible to', DEEI 'must'. In cases where these verbs appear in the sentence head position with no subject, the closest English equivalent is either (a) a modal with the neutral pronoun 'one' as subject (e.g. 'one can', 'one must', etc.) or (b) 'it' + a modal adjective (e.g. 'it is possible to', 'it is necessary to', etc.).

In any case, the sentence can never be embedded as the Instrument node of a BEY construction.

The following deep structures represent possible sentences with premeditative Instruments:

(62)

```
                         S
            ┌────────────┴────────────┐
           Mod                       Prop
            │              ┌──────────┼──────────────┐
           Asp             V          I              O
            │              │          │              │
            │              │          S              S
            │              │   ┌───┬──┼────┐          ╱╲
            │              │   V   A  I    O         ╱  ╲
            │              │   │   │  │    │        ╱────╲
           LE            SHYY  DAA MAU CHEWEITZ CHUANGHUH  CHUANGHUH POH
```

```
(63)              S
           ┌──────┴──────┐
          Mod           Prop
           │        ┌─────┴─────┐
           │        V           O
           │        └──────┬────┘
           │               S
           │        ┌──────┼──────┐
           │        V      I      O
           │        │      │      │
           │        │      S      S
           │        │  ┌───┼───┐  └──── CHUANGHUH POH
           │        │  V  (A)  I   O
           │        │  │   │   │   │
           Ø     KEEYII SHYY DAA MAU CHWEITZ CHUANGHUH
```

Transformations much like those which produce RCC's, along with a
YONQ insertion rule, will apply to (62) to yield

> (64) MAU TZERDONG YONQ CHWEITZ DAA POH LE CHUANGHUH LE
> "hammer"
> "Mao Tse-tung used a hammer to break the window."

and to (63) to yield

> (65) KEEYII YONQ CHWEITZ DAA POH CHUANGHUH
> "can"
> "One can break the window with a hammer."
> "It is possible to break the window with a hammer."

or if Agent is opted for,

> (66) MAU TZERDONG KEEYII YONQ CHWEITZ DAA POH CHUANGHUH
> "Mao Tse-tung can break the window with a hammer."

As with (46)-(47) (although the fact was not noted there), the subject-
fronting rule must move the Agent to before the auxiliary; there is
no (67).

> (67) *KEEYII MAU TZERDONG YONQ CHWEITZ DAA POH CHUANGHUH

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Verbs of Remembering

William P. Bivens, III

This paper discusses in the Case Grammar framework a family
of verbs expressing an Experiencer's cognitive activity in which
his previous associations are "called to mind" by his own efforts
or by some external Agent or Instrument. These verbs have surface
realization in the forms call to mind, remember, remind, recall,
reminisce, and recollect. The paper rather informally assumes
that "call to mind"[1] is the pre-lexical verbal element for each

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[1] This form was chosen because of its correspondence with
the surface verb call to mind. The exact designation is trivial,
though the presuppositions involving the Experiencer and his
previous association with the Object (see p.57) are crucial.

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of these surface forms in order to present them all in an identical
case frame from which certain nodes must be deleted or in which
others may be null. Before lexical insertion, however, the
particular verb is realized in the deep structure; its choice is
determined by the case frame configuration and by the particular
"lexical focus" of the sentence. The paper is not, however, an
exercise in generative semantics, since it focuses on the syntactic
component, assuming the proper lexical item in its proper case frame
as input. The informal claim of an underlying verb in the pre-
lexical component reveals the general similarities of this family
of verbs, while it shows by contrast the unique syntactic property
of each particular surface verb.

I. The Case Frame and the Experiencer Conspiracy

Consider first the surfacing of the underlying verb itself
in the following two sentences:

> (1) a. For them, the photo called to mind last year's
>   E   1
>   visit to Kyoto.
>   O
>
>   b. Using only hastily scribbled notes, Oscar called
>   I   A
>   to mind the entire argument.
>   O

The contrasting case frames, [-EIO] and [-AIO] manifested here, suggest that the verb in (a) is different from that in (b), since the person (E) in the first sentence is a passive entity upon which the Instrument works to elicit some cognitive reaction, while in the second the action results from a conscious effort on the same person's part.[2] More interesting generalizations are

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[2] The Agentive nature of the subject of (b) will be justified below, pp.

---

possible, however, by rejecting this limited view of two distinct verbs in favor of one in which the two verbs are the same, differing only in their surface manifestations as dictated by the case frame in which they appear. Viewed in this way the two sentences together contain the sum of the five cases found in the sentences above. Thus the full case frame for this verb may be posited as [-AEIO].

Since neither sentence above contains all of these case nodes, a problem arises as to which case nodes may be deleted and under what circumstances. Since both sentences contain Object case elements, the appearance of this element seems to be obligatory. Experiencer, on the other hand, appears to vary with Agent. That I is also optional in the full case frame can be seen by reading (1b) without this element.[3] To express these options, parentheses
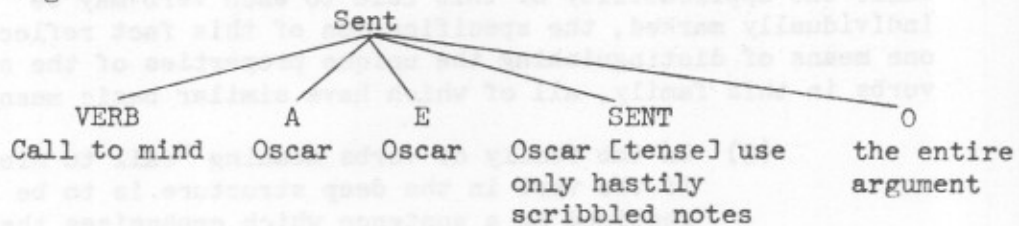
---

[3] The complex relationship of Instrument to Agent by means of which the former is optional in either case frame will be explained below.

---

may be added to the case frame of <u>call to mind</u> as follows: [--(A|E) (I) O]. Plain parentheses indicate freely optional elements and linked parentheses (between A and E) indicate that one or the other element must be present. Thus, (1a) is derived from the following deep structure:

Figure 1

Sent

| VERB | A | E | I | O |
| Call to mind | Ø | they | photo | Last year's visit to Kyoto |
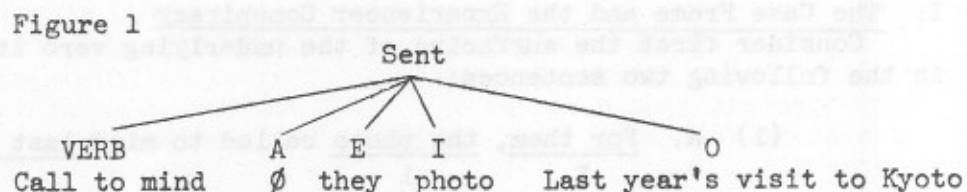
Likewise, (1b) has a similar structure, except that both the Agent and the Experiencer nodes are filled:

Figure 2

```
                              Sent
            ┌──────┬───────┬───────┬──────────────┬──────────────┐
          VERB     A       E       SENT                          O
       Call to mind  Oscar  Oscar  Oscar [tense] use   the entire
                                   only hastily        argument
                                   scribbled notes
```

Plainly, some Experiencer must always be present in the deep
structure of sentences such as (1b), even though they do not
appear on the surface--the Experiencer is the one to whose mind
some idea must be called. In Romance languages this case always
appears in the surface structure, since the "call to mind" verbs are
reflexive (recordarse, se rappeler, etc.). In English this case
explains such sentences are:[4]

---

[4]The complex behavior of the Experiencer in this family of
verbs is one of the focal points of this paper. As additional data
is presented, further observations on its required appearance and
resulting behavior will be made. For example, additional motivation
for always positing an Experiencer is found in the presuppositions
which underlie the family of verbs under discussion. See below,
p. 57.

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(2) Peter reminded Dave of the meeting.
     A   E   O

For those verbs such as remember and recollect and sometimes call
to mind and recall in which the Experiencer must not appear in the
surface structure, the verb must be marked to undergo the following
rule:

Rule 8.[5] REQUIRED COREFERENCE DELETION[6]

$$\underset{V}{[\ C_i = C_j\ ]}\ C^*\ C_j\ X \Longrightarrow 1\ 2\ \emptyset\ 4$$
$$1\quad 2\quad 3\quad 4$$

---

[5]Rule numbering in the text reflects the ordering of the
rules in the Summary of Rules (i.e., the order necessary for a
derivation) rather than the ordering of their appearance in the
text.

[6]This rule, along with several others discussed in this
paper, was given by Professor Charles Fillmore in his classes at
the 1970 Linguistic Institute at The Ohio State University.

While the applicability of this rule to each verb may be
individually marked, the specification of this fact reflects
one means of distinguishing the unique properties of the several
verbs in this family, all of which have similar basic meanings:

> (3) In the family of verbs meaning "call to mind",
> if the verb in the deep structure is to be
> realized in a sentence which emphasizes the
> Experiencer's role as Agent in his own cognitive
> action, both case nodes will be filled in the
> deep structure of the sentence, and modifi-
> cation in the case frame will reflect this
> double role by marking the Experiencer for
> Required Coreference Deletion.

Note first of all that simply filling both nodes of the case
frame with the same noun is not sufficient to cause deletion,
since the following sentences are acceptable:[7]

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[7]Note that Paul Postal rejects these sentences in his article,
"On the surface verb 'remind'," _Linguistic Inquiry_ 1.1.37-120
(1970).

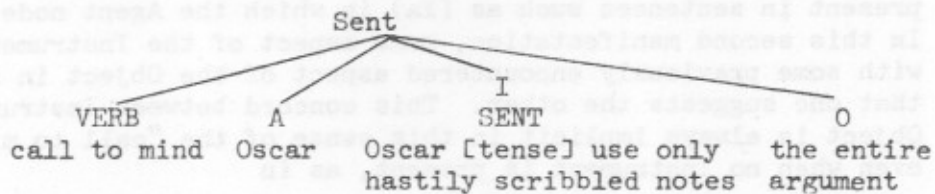> (4) a. <u>In many of my mannerisms</u>, <u>I</u> remind
>   I   A
>   <u>myself</u> of <u>my father</u>.
>   E   O
>
>   b. <u>Marcia</u> reminded <u>herself</u> to pick up the cleaning.
>   A   E   O

Second, note that the effect of Required Coreference Deletion in
accordance with (3) is an assertion of the primary importance of
the Agent over the Experiencer (since the latter is deleted). This
transformation is just the first of several which apply to various
members of this verb family, the effect of which is to deemphasize
the Experiencer's role in the case frame. This deemphasis is
unrelated to the case hierarchy by means of which grammatical
relation is assigned, since it is also reflected in sentences in
which no Agent is present as in (1a), (These other operations for
lowering the grammatical status of the Experiencer will be
explained below in connection with Experiencer Shunting (p.58),
and Psych-Movement (p. 61).)

Thus, in the manner discussed above, the Experiencer is deleted
from the deep structure shown in Figure 2, to give the following:

Figure 4

```
                              Sent
          ┌──────────┬──────────┴──────────────┬────────────┐
                               I
        VERB         A        SENT                          O
     call to mind  Oscar    Oscar [tense] use only    the entire
                            hastily scribbled notes    argument
```

In Figure 4, in which the Agent is expressed and conceived to be
the real source of the cognitive act, the presupposition of this
surface verb is unmistakable--that the Experiencer must have had
previous association with the Object to be recalled. Notice that if
this were not the case, the Experiencer could not act as Agent to
recall to himself the information by his own volition. In contrast,
any other means of bringing an idea to mind must involve some
suggestion or demonstration by an Agent not equivalent to the
Experiencer (possibly with the addition of an Instrument). This
presupposition clearly distinguishes the class of verbs discussed in
this paper from a second group, also meaning "call to mind," in
which the ideas elicited in the Experiencer are not those of previous
associations. This second family of verbs includes such surface
forms as suggest, realize, perceive, demonstrate, illustrate, prove,
think about, and conjure. The distinction between the two families is
clear in the following pairs of sentences:

(5) a. This fragrance reminds me of Paris.

     b. This fragrance makes me think of Paris.

The verb in the first sentence presupposes some past associations with
the Object which brings an idea to the Experiencer's mind (in this
case a Parisian fragrance); the second on the other hand, makes no
such presupposition. This difference is even clearer in negative
sentences:

(6) a. Homer did not remember to turn out the lights.

     b. Homer did not think to turn out the lights.

Homer clearly intended to turn out the lights (i.e., had some past
associations with the object), but forgot. No such intention (i.e.,
past association) is implicit in (6b), and thus the two families of
verbs divide sharply with respect to their presuppositions.[8] Though

_____

[8]Notice that in this respect, forget is quite similar to the
"call to mind" verbs; though its careful examination is beyond the
scope of this paper, this verb behaves very much like remember.

somewhat more subtle, the presupposition of the Experiencer's previous acquaintance with the content of the Object case node is also present in sentences such as (1a) in which the Agent node is null. In this second manifestation, some aspect of the Instrument accords with some previously encountered aspect of the Object in such a way that one suggests the other. This concord between Instrument and Object is always implicit in this sense of the "call to mind" verbs; even when no Instrument is present, as in

> (7) Jan reminded Pete to go to the store.

In such zero-Instrument cases, some unexpressed verbal Instrument must be implicit. Though not unique to this family of verbs, an obvious result of this concordance between Instrument and Object is that the Instrument and Agent nodes cannot both be null.

This presupposition of the "call to mind" verbs helps to explain the peculiar behavior of the Experiencer in this frame. Some filler for this node is necessary as a reference as to whose mind an idea is called. This idea is so central to the concepts embodied in the verb itself, however, that the appearance of any other element down-grades the Experiencer below its normal position in the hierarchy. Consider, for example, its behavior in (1a). Since the basic principle of Subject Formation within the case grammar framework is that of selecting the case highest in relative importance (see Rules 11-14 below, p. 60), the Experiencer should be selected as subject whenever the deep structure does not contain an agent (see Figure 1, p. 54, for a representation of the deep structure of this sentence). Instead of this procedure taking place, however, the Experiencer is downgraded by the following rule:

Rule 9. EXPERIENCER SHUNTING[9]

$$
\begin{array}{ccc}
V & E & X \\
1 & 2 & 3
\end{array}
\implies
\begin{array}{l}
\text{sent} \quad \text{sent} \\
[\quad [\ 1 \ 3 \ ] \ 2 \ ]
\end{array}
$$

---

[9]Fillmore, 1970

A subsequent rule may even delete a shunted Experiencer. The important point, however, is that this rule is another in the conspiracy against the Experiencer of "call to mind" verbs.

The surface verbs call to mind and recall allow both senses in which this family of verbs can be understood--that in which the Experiencer calls some idea to mind by a conscious effort and that in which the Experiencer is passive in this process. For this reason, these two verbs allow a choice of treatments of the Experiencer by either Required Coreference Deletion (Rule 8) or by Experiencer Shunting (Rule 9). Other verbs in the family distinguish themselves

by focusing on one act or the other, and this focus determines their treatment of the Experiencer. This variety in the treatment of the Experiencer can be seen in (1a and 1b) and in the following sentences:

(8) a. <u>To the old lady</u>, <u>the pressed flowers</u> recalled <u>the</u>
      E   I
   <u>days of her youth</u>.
       O

b. <u>Jerry</u> recalled <u>having met the girl before</u>.
   A   O

c. <u>Frank</u> remembered <u>Sally</u>.
   A   O

d. <u>Gary</u> reminded <u>Elizabeth</u> <u>of Bob's birthday</u>.
   A   E   O

e. <u>Gary's note</u> reminded <u>Sally</u> <u>of Bob's birthday</u>.
   I   E   O

f. <u>The girls</u> reminisced <u>about their year in Europe</u>.
   A   O

The first two sentences illustrate the two senses of <u>recall</u> mentioned above; the Experiencer in (8a) has been shunted by Rule 9, while that in (8b) has been deleted by Rule 8. <u>Remember</u> focuses on the Agent's conscious act of calling something to mind, as in the second sense of recall (8b). As a result, the Agent is expressed and the Experiencer obligatorily deleted. The same is true for <u>reminisce</u> in (8f). In contrast, <u>remind</u> focuses on a passive Experiencer, but unlike this focus in <u>call to mind</u> (1a) and <u>recall</u> (8a) in which the Experiencer is shunted aside to appear (if at all) as a prepositional phrase, this case appears as the direct object of the verb. Consider, for example, the deep structure of (8d):

Figure 5

Sent

VERB   A   E   O
remind Gary Elizabeth Bob   birthday
                            [+ possessive]
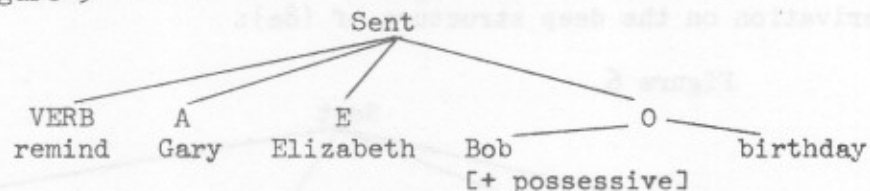
The following rules are necessary to map the subject and object of this deep structure into the proper surface structure:[10]

---

[10]Fillmore, 1970.

Rule 11. ACCUSATIVE MARKING[11]

$$\underline{\underline{V\ C^*}}\ \ [^1\underline{\underline{X}}]\ \ \underline{\underline{Y}}\ \ \ \ \Longrightarrow\ \ \ \ 1\ [2]\ 3$$
$$\ \ 1\ \ \ \ \ \ 2\ \ \ \ \ 3$$

Condition: C_i = E, O, G (in order)

---

[11]As a general convention, asterisks indicate "one or more"; in conjunction with parentheses, as in (X)*, the convention can mark "null, one, or more."

Rule 12. NOMINATIVE MARKING

$$\ \ \ \ \ \ C$$
$$\underline{\underline{V}}\ [\ \underline{\underline{X}}\ ]\ \underline{\underline{Y}}\ \Longrightarrow\ nom$$
$$1\ \ \ \ 2\ \ \ \ 3\ \ \ \ \ \ \ \ 1\ [\ 2\ ]\ 3$$

Rule 13. SUBJECT FORMATION

$$\ \ \ \ \ \ sent$$
$$[\ \underline{\underline{V}}\ \underline{\underline{NOM}}\ \underline{\underline{X}}\ ]\ \Longrightarrow\ sent\ \ sent$$
$$\ \ \ 1\ \ 2\ \ \ \ 3\ \ \ \ \ \ \ \ \ [\ 2\ [\ 1\ 3\ ]\ ]$$

Rule 14. OBJECT FORMATION

$$\underline{\underline{NOM}}\ \underline{\underline{V}}\ \underline{\underline{(C)}}\ \underline{\underline{ACC}}\ \underline{\underline{X}}\ \Longrightarrow\ \ \ \ \ V$$
$$\ \ \ 1\ \ \ \ 2\ \ \ 3\ \ \ \ 4\ \ \ 5\ \ \ \ \ \ \ \ 1\ [\ 2\ 4\ ]\ 3\ 5$$

Since the cases are ranked in left to right order, in Figure 5, the effect of rules 11-14 is to choose and to convert to the object of the verb the _second_ case to the right if it is the Experiencer, Object, or Goal case. Subsequently the _first_ case to the right of the verb is chosen as the subject. Consider now the effect of this derivation on the deep structure of (8e):

Figure 6

```
                              Sent
          _____|_____
         |        |             |                    |
       VERB       E             I                    O
      remind    Sally      _____         _____
                          |           |       |            |
                         Gary        note    Bob        birthday
                      [+possessive]       [+possessive]
```
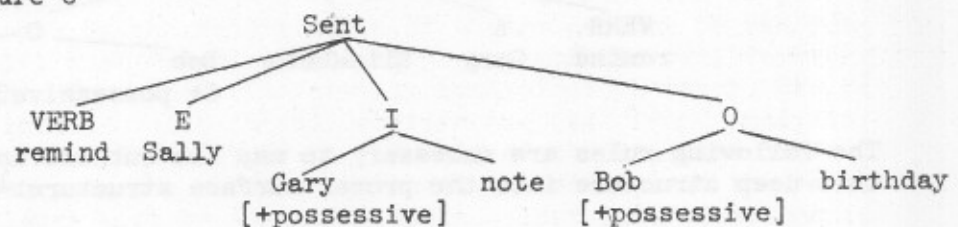
Here the application of the rules above will map the Object case into the direct object of the verb and the Experiencer into the subject, giving the ungrammatical string:

(9) *<u>Sally</u> reminded <u>Bob's birthday</u> by <u>Gary's note</u>.
       E   O   I

With the proper verb (e.g., <u>remember</u>), the Object can become the
direct object and the Instrument frequently appears as a prepositional
phrase. Thus the ungrammaticality results from making the Experiencer
the subject of the verb--a derivation which never occurs in this
family of verbs. That this ungrammaticality of Experiencer subjects
is not a general condition is shown by such sentences as:

      (10) a. <u>Mike</u> feels sick.
                  E

           b. <u>Mary</u> enjoyed the movie.
                  E

To block the ungrammatical sentence in (9) the verb may be marked for
application of the independently motivated Psych-Movement trans-
formation:[12]

---

   [12]Fillmore, 1970.

      Rule 10. PSYCH-MOVEMENT

      V E C X

      1 2 3 4 $\Longrightarrow$ 1 3 2 4

If this rule is applied to the deep structure in Figure 6 before the
rules of subject and object formation, the Experiencer and Instrument
will be "flipped" to give the following input to Rules 11-14:

      Figure 7

                      Sent

VERB   I   E   O
remind   Sally
     Gary note   Bob   birthday
  [+possessive]   [+possessive]
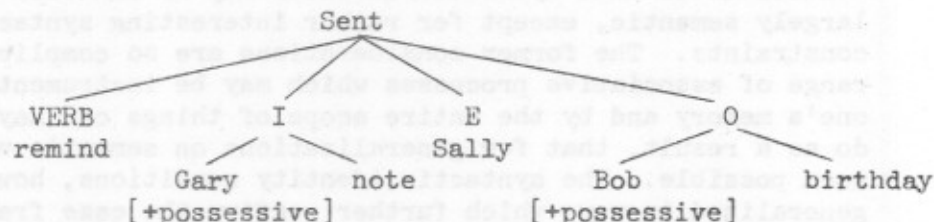
With this input, Rules 11-14 will assign the grammatical relations
necessary to realize the surface sentence (8e). Note that Psych-
Movement will not apply if an Agent is present, since that case is
the first to the right of the verb, and the string will no longer
fit the rule's structural description (for example, see Figure 5).
Thus marking the verb <u>remind</u> [+Psych-Movement] will result in no

ungrammaticality even when an Agent is present. This neat bit of formalism may obscure the fact that in the case of zero-Agent, Psych-Movement is part of this verb family's general conspiracy against Experiencer subjects.

II. Embedding

Embedding in the Instrument and Object positions is possible, as the following examples show:

(11) a. By writing himself a note, John remembered
      I   A
      to purchase the groceries.
                O

b. By his tying a string on his finger, Fred remembered
   I   A
   that he had to pick up his car.
              O

c. By writing her a note, Mortimer reminded Sally
   I   A   E
   to go to the bank.
         O

d. That Henry lost five dollars reminded Oscar
   I   E
   to check his own wallet.
            O

e. It recalled her own high-school days for Judy to
              O   I
   see the homecoming queen.

f. Judy recalled meeting the boy last summer.
   A   O

Conditions on what types of sentences may be embedded seem to be largely semantic, except for rather interesting syntactic identity constraints. The former considerations are so complicated by the wide range of associative processes which may be instrumental in jogging one's memory and by the entire scope of things one may be reminded to do as a result, that few generalizations on semantic well-formedness seem possible. The syntactic identity conditions, however, can be generalized in ways which further confirm the case frame analysis proposed for this family of verbs. In all of the examples above, if an Agent appears in the surface sentence, the subject of the embedded Instrument Clause must be identical to it. This interrelationship between Agent and Instrument corresponds to the hierarchy of the two cases manifested in the obligatory selection of Agent as subject is one is present, and the alternative choice of Instrument for that function if the Agent has been deleted.
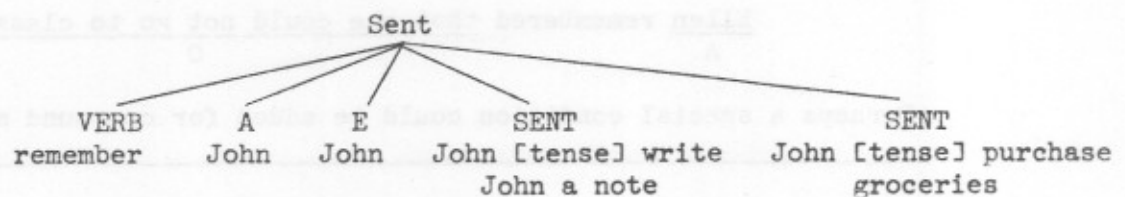
That clauses embedded in the Object position must have a subject identical to the Experiencer in the higher sentence can be seen most clearly in (11d). This identity is more general, however, than this sentence alone may indicate. Even though the Experiencer must be deleted in the case of remember (as in (11a)) and recall (11f), the embedding Transformation may occur before this deletion, at a point where this reference is still available.[13] The additional

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[13]This is not a strong argument for ordering, due to the identity mentioned below. Thus, its main effect is to simplify Required Coreference Deletion.

---

identity condition between Agent and Experiencer for this verb reveals the accuracy of this analysis, since the subject of the embedded Object will obviously agree with the Agent of the higher sentence as well. Thus the apparent identity between the subject of the Object clause and the Agent of the higher sentence is a reflex of a deeper, more complex series of identities. This fact provides still further motivation for positing a full case frame for all the verbs of this family, even though some of the nodes may be null or subsequently deleted.

Except in the case of modal clauses embedded in the Object position (e.g., 11b) and in the cases of Instrument clauses embedded in sentences where the Agent case node is null (e.g., 11d), all of these embedded sentences must be modified before they reach their surface form. Consider, for example, the following deep structure of (11a):

Figure 8

```
                            Sent
        ┌──────┬──────┬─────────────┬──────────────────┐
       VERB    A      E            SENT               SENT
     remember John   John    John [tense] write   John [tense] purchase
                                 John a note           groceries
```

A series of related transformations will be necessary to convert the verb of the Instrument clause to a nominal form (either a gerund or a verbal noun) and the verb of the Object clause to an infinitive. In addition, the subject noun of the Instrument clause must either be made possessive or deleted, while the subject of the Object clause must be deleted. The first step in these derivations is the erasure of tense in each of the embedded clauses by the following rule:

Rule 1. TENSE ERASURE

```
     Cq  sent
     [      [   NP [TENSE] V X ] ]
            1     2      3 4      ⟹  1 ∅ 3 4
```

The absence of this tense marker can now be used as a dummy symbol to cue the remaining rules in the derivation and thus to relate the entire series of rules.[14] (Notice that the last two rules of the

---

[14]Note that this rule and subsequent rules in this derivation give the feature [tense] the same status as other constituents in the string. As a result, its absence cannot be ignored in the Structural Description anymore than the absence of any other constituent.

---

derivations discussed in this section (Rule 6 and Rule 7) are obligatory and thus insure that all strings undergoing this initial rule are eventually modified in some way.) Since modals do not undergo this series of transformations,[15] if they are excepted from this

---

[15]This statement is too strong since it excludes several compound modals such as <u>having to</u>, <u>being able to</u>, and <u>being obliged to</u>:

<div align="center">

<u>Having to buy a new shirt</u> reminded <u>Ferdinand</u>
I   E
<u>that he needed another tie as well</u>.
O

<u>Jack</u> remembered <u>having to pay custom's duty on his return</u>
A   O
<u>from Europe</u>.

</div>

Compare, however:

<div align="center">

<u>Ellen</u> remembered <u>that she could not go to class that day</u>.
A   O

</div>

Perhaps a special condition could be added for compound modals.

---

rule, it will not be necessary to restate that condition for any of the other rules in the derivation. Thus for "call to mind" verbs this rule is obligatory for all clauses embedded in the Object position except in the case of Modals where it is blocked. The rule is also obligatory for all Instrument clauses of "call to mind" verbs except for those sentences in which the Agent node is null, where it is optional (modals still excepted). Subsequent to Rule 1, a second rule can then be applied to form gerunds from the embedded verb:

<div align="center">

Rule 2.   GERUND FORMATION

</div>

Cq sent
[[NP V X]]
         1 2 3 $\Longrightarrow$ 1, 2 + <u>ing</u>, 3

Note that the lack of a tense marker is a necessary condition of
the structural description of this rule, as explained above. This
rule is optional in Object clauses of sentences containing verbs
marked for Required Coreference Deletion (Rule 8) of the Experiencer,
and for Instrument clauses of sentences with zero Agent. Just in
case an Agent is expressed, the rule is obligatory for Instrument
clauses, and just in case the Experiencer is not marked for Required
Coreference Deletion, the rule is blocked in Object clauses.[16]

---

[16]I am not sure how to formalize these conditions, especially
regarding the relationship of this rule to Required Coreference
Deletion, where it appears I am missing a generalization. Obviously,
these conditions are closely linked to the syntactic identity
conditions on embedding.

With the tense marker erased, the embedded verbs can no longer
take a subject. Therefore, the following three rules together must
establish the proper grammatical relation between the remaining NP
and the modified verb (by raising it, Rule 3 below, or by making it
possessive, Rule 4). If neither of these two options is taken, the
NP must then be deleted. The three rules for these operations are
as follows:

Rule 3.   SUBJECT RAISING I

$$
\begin{array}{c}
\text{Cq sent} \\
[\quad [\text{ NP V X }] \ ] \\
 1 \ 2 \ 3
\end{array}
\implies
\begin{array}{c}
\text{Cq sent} \\
[\quad [1 [2 3]] \ ]
\end{array}
$$

Rule 5.   POSSESSIVE FORMATION

$$
\begin{array}{c}
\text{Cq sent} \\
[\quad [\text{ NP V} + \underline{\text{ing}} \text{ X }] \ ] \\
 1 \quad 2 \quad 3
\end{array}
\implies
1 + [\text{POSSESSIVE}], \ 2, \ 3
$$

Rule 6.   EQUI-NP DELETION

$$
\begin{array}{cc}
\text{Cq} & \text{Cq sent} \\
[\text{NP}_1] \text{ X} \quad [& [\text{NP}_2 \text{ V}(+\underline{\text{ing}}) \text{ Y}] \ ] \\
1 & 2 \qquad 3
\end{array}
\implies
1 \ \emptyset \ 3
$$

Conditions: $NP_1 = NP_2$

$NP_2 \neq [+\text{POSSESSIVE}]$

By Chomsky adjunction, Rule 3 simply raises the NP from its subject
position as the first of several steps which seem necessary to

accomplish more complex subject raising than proposed here. For
sentences such as "John seems to be sick", Raising Rule II[17] would

---

[17]Fillmore proposes the following:

$$\underset{1}{\underline{V \ (NP)}} \ \ [\ \ \underset{2}{[\ [\underset{3}{\underline{X}} \ ] \ \underline{SENT}} \ ] \ ] \ \underset{4}{X} \implies \underset{1}{obj} \ [\ \underset{2}{} \ ] \ \underset{3}{} \ \underset{4}{} $$

---

would make the noun the sole representative of its case node and yet
another Raising Rule III would then be necessary to attach the
remaining complement (this complementizer placement rule may fall
together with an Extraposition Rule). Raising Rule I above would
feed this sequence (and must be so ordered), as well as providing a
unique structure to all subsequent rules and thus relate each of the
three steps in the raising process. Note especially that this rule
does not separate the subject NP and its complement to such an extent
that extraposition is possible (as would be the case in Raising Rule
II). It is equally important that the output of the Gerund Forma-
tion Rule (Rule 2) does not fit the Structural Description required
for Raising. The ultimate realization of the verb in sentences with
raised subjects (and, as a precondition, deprived of tense markers)
is as infinitives by Rule 7 below. In this manner, the tenseless
verb is guaranteed two distinct surface realizations--as a gerund or
as an infinitive (the second form can also be derived by deleting the
subject, as shown below).

For "call to mind" verbs Raising Rule I is limited to optional
application to Instrument clauses in sentences without Agent.[18] The

---

[18]Raising Rule I is independently motivated, however, by other
sentences in which the infinitive compliment cannot be extraposed
from the raised noun, as in:

For Frank to finish the job seemed impossible.

---

severe limitations on Raising Rule I for "call to mind" verbs are
apparently due to the identity conditions existing between the
Agent and Experiencer and the subjects of the embedded clauses
(these conditions are discussed above, p. 54). For example, note
that realization of a "subject" (even in raised position) might be
confused with the obligatorily deleted Experiencer in remember:[19]

---

[19]The exact nature of these identities and deletions is not
clear enough to be formalized. Why, for example, is the infinitive
form itself (with or without a raised "subject") blocked in the
Instrument clause when an Agent is present, but allowed when the
A-node is null as in:

> For Adam to see Ginger in her wedding gown recalled to
> him his own wedding day.

See also the discussion of syntactic constraints on embedding, p.

---

(12) *Cynthia <u>remembered</u> (for) her(self) to pick up her
new dress.

Rule 2, above, is self-explanatory--it simply forms a possessive
before gerunds. The rule is optional and completely general. If
neither Raising Rule I or the Possessive Formation Rule is applied,
the NP before any tenseless verb must be deleted (Rule 12).
The rule is completely general, and its application is obligatory.
Clearly the device of a deleted tense marker used as a cue to relate
a series of rules (in this case the proper realization or deletion
of a noun phrase before an embedded gerund or infinitive) simplifies
the statement of conditions on individual rules of a derivation, since
this last rule (Rule 12) can obligatorily apply to any remaining forms
which the cue claims to be part of the derivation. In a similar
manner, any remaining tenseless verb to which a <u>+ing</u> has not been
affixed must obligatorily be converted into an infinitive as follows:

Rule 7. INFINITIVE FORMATION

$$\begin{matrix} & \text{sent} & \text{sent} & \\ [\text{A} & [\text{V} & \text{X}] & \text{B}] \\ 1 & 2 & 3 & 4 \end{matrix} \implies 1, \underline{to} + 2, 3, 4$$

This rule completes the derivation of Instrument and Object clauses.
In summary, Instrument clauses of "call to mind" verbs can be realized
only as gerund phrases (with or without a possessive NP) when an Agent
is present, but otherwise they may appear as <u>that</u>-clauses, infinitive
phrases (with or without a raised "subject"), or gerund phrases (with
or without a possessive NP). Object clauses can appear as infinitive
phrases without raised "subjects" or as gerund phrases.

In the derivations of Object phrases discussed above, the optional
realization of the embedded sentence as an infinitive phrase or as
a gerund phrase can change the meaning of the surface sentence.
Consider, for example, the following sentences:

(13) a. Betty remembered to buy the groceries.

b. Betty remembered buying the groceries.

The focus of (13a) is upon Betty's action which occured as a result
of her remembering to do that thing. In (13b), the focus is upon
Betty's memory of an act with no comment implicit upon why the act
was done. The distinct focus of these two sentences is even more
pronounced in sentences with a verb in the future:

(14) a. Betty will remember to buy the groceries.

b. Betty will remember buying the groceries.

In (14a), Betty has clearly not yet done anything. Sentence (14b), however, is ambiguous with respect to whether the groceries have been bought or not, expressing only the certainty of the Experiencer's remembering the event at some future time, after it has occurred. The same effect is apparent when the sentences are negated, though the distinction between the two past-tense sentences is even clearer:

(15) a. Betty did not remember to buy the groceries.

b. Betty did not remember buying the groceries.

c. Betty will not remember to buy the groceries.

d. Betty will not remember buying the groceries.

In (15a) and (15c), Betty has not bought anything, while (15b) and (15d) are ambiguous in this respect.[20]

---

[20]The implications of these different meanings is unclear. They both arise from the same deep structure through a series of related transformations, and there seems to be no neat way of constraining them syntactically.

The rules in the derivation discussed in this section must be ordered in the sequence in which they have been presented. This is a formal device only, and should not be taken as a claim that Gerund Formation, for example, was somehow a "deeper" or more basic operation than Infinitive Formation. Tense Erasure was posited as the initial transformation in the derivation, even though this operation could be accomplished just as easily in conjunction with modification of either the subject NP or the verb of an embedded clause. The initial position of this transformation in the derivation and its subsequent use as a cue for remaining transformations simply claims that this erasure is related in some unexplained way to both subject and verb modification of embedded clauses. One form of order necessarily arises from this device. The inter-relationship between the realization of the embedded verb (as infinitive or gerund) and the corresponding treatment of its subject (for example, that a possessive NP can appear only before the gerund) gives rise to another form of order among these rules. This type of ordering determines, for example, the Structural Description of Rule 3, Subject Raising I, a and of Rule 5, Possessive Formation. These two rules must inter-relate with Rule 2, Gerund Formation, and Rule 7, Infinitive Formation, but the same relationship could be shown by transposing the two verbal modification rules and modifying the subject modification rules accordingly. In this new ordering, the structural description of the

verb modification rules would be unchanged:

Rule A.   INFINITIVE FORMATION

$$C_q \text{ sent}$$
$$[\quad [NP \ V \ X]] \Longrightarrow$$
$$1 \ 2 \ 3 \qquad\qquad 1, \underline{to} + 2, 3$$

Rule D.   GERUND FORMATION

$$\text{sent sent}$$
$$[A \ [\quad V \ X] \ B] \Longrightarrow$$
$$1 \qquad 2 \ 3 \quad 4 \qquad\qquad 1, 2 + \underline{iing}, 3, 4$$

As a result of this transposition, the structural description of
the two subject modification rules would have to be changed as
follows:

Rule B.   SUBJECT RAISING I

$$C_q \text{ sent}$$
$$[\quad [NP \ \underline{to} + V \ X]] $$
$$1 \qquad 2 \qquad 3 \qquad \Longrightarrow \quad \begin{array}{l} C_q \text{ sent} \\ [\quad [1 [2 \ 3]]] \end{array}$$

Rule C.   POSSESSIVE FORMATION

$$C_q \text{ sent}$$
$$[\quad [NP \ V \ X]] \Longrightarrow$$
$$1 \ 2 \ 3 \qquad\qquad 1 + [POSSESSIVE], 2, 3$$

Clearly the ordering of these rules has no descriptive power, since
either order gives the proper output. The rule order adopted in the
text facilitates statement of the conditions on Rules 2 and 7, some-
what.[21] Except in the case of Subject Raising II and subsequent

---

[21]Perhaps better understanding of the identity conditions
between embedded clauses, and NP fillers in the higher sentence would
lead to some definitive ordering of these rules (see p. 54). Another
possibility is that all the operations in this derivation occur
simultaneously, and thus no real order exists among the rules.

---

compliment attachment rules, the ordering of this entire derivation
with respect to the other transformational rules seems relatively
unimportant, since the changes take place within the case node brackets
and therefore are not affected by manipulation of this case within
the higher sentence.

Summary of Rules

Rule 1.   TENSE ERASURE

```
       Cq sent
       [    [ NP [ TENSE ] V X ] ]                  1 ∅ 3 4
            1       2        3 4        ⟹
```

Rule 2.   GERUND FORMATION

```
       Cq sent
       [    [ NP V X ] ]
            1  2 3                   ⟹       1, 2 + ing, 3
```

Rule 3.   SUBJECT RAISING I

```
       Cq sent
       [    [ NP V X ] ]                Cq sent
            1  2 3        ⟹            [    [ 1 [ 2 3 ] ] ]
```

Rule 4.   SUBJECT RAISING II

```
               obj sent nom
       V (NP)   [    [   [ X ] SENT ] ] X
        1                  2      3     4   ⟹   1 [ 2 ] 3 4
```

Rule 5.   POSSESSIVE FORMATION

```
       Cq sent
       [    [ NP V + ing X ] ]
            1      2      3     ⟹   1 + [POSSESSIVE], 2, 3
```

Rule 6.   EQUI-NP DELETION

```
       Cq         Cq sent
       [ NP₁ ] X [    [ NP₂ V (+ ing) Y ] ]
          1    2            3                 ⟹   1 ∅ 3
```

       Conditions: NP₁ = NP₂

                     NP₂ ≠ [+possessive]

Rule 7.   INFINITIVE FORMATION

```
       sent sent
       [ A [ V X ] B ]
         1   2 3   4        ⟹       1, to + 2, 3, 4
```

Rule 8.   REQUIRED COREFERENCE DELETION

$$[\overset{V}{C_i = C_j}] C^x C_j X$$
$$\quad 1 \qquad 2\ 3\ 4 \quad \Longrightarrow \quad 1\ 2\ \varnothing\ 4$$

Rule 9.   EXPERIENCE SHUNTING

$$\begin{array}{ccc} V\ E\ X & & \text{sent sent} \\ 1\ 2\ 3 & \Longrightarrow & [\quad [\ 1\ 3\ ]\ 2\ ] \end{array}$$

Rule 10.   PSYCH-MOVEMENT

$$\begin{array}{ccc} V\ E\ C\ X & & \\ 1\ 2\ 3\ 4 & \Longrightarrow & 1\ 3\ 2\ 4 \end{array}$$

Rule 11.   ACCUSATIVE MARKING

$$\underset{1}{\underline{V\ C^x}} \quad \underset{2}{[\,^C_i\underline{X}\,]} \quad \underset{3}{Y} \quad \Longrightarrow 1 \quad \overset{acc}{[\ 2\ ]}\ 3$$

Condition: C_i = E, O, G (in order)

Rule 12.   NOMINATIVE MARKING

$$\underset{1}{V} \quad \underset{2}{[\,\overset{c}{\underline{X}}\,]} \quad \underset{3}{Y} \quad \Longrightarrow \quad 1\ \overset{nom}{[\ 2\ ]}\ 3$$

Rule 13.   SUBJECT FORMATION

$$\begin{array}{ccc} \overset{\text{sent}}{[\ V\ \text{NOM}\ X\ ]} & & \text{sent sent} \\ \quad 1\ \ 2\ \ \ 3 & \Longrightarrow & [\ 2\ [\ 1\ 3\ ]\ ] \end{array}$$

Rule 14.   OBJECT FORMATION

$$\begin{array}{ccc} \text{NOM}\ V\ (C)\ \text{ACC}\ X & & \overset{v}{} \\ \ 1\ \ \ 2\ \ 3\ \ \ 4\ \ 5 & \Longrightarrow & 1\ [\ 2\ 4\ ]\ 3\ 5 \end{array}$$

Indirect Observations about Indirect Objects
Richard C. Brittain

Part 1

This paper is an attempt to enrich the case grammar theory through the addition of rules to generate sentences with indirect objects. Such rules must, of course, interact with the passive rule already formulated to produce the desired set of sentences and none others. I will begin with a discussion of the rules according to the standard <u>Aspects</u> theory in order to bring into focus some of the problems which any grammatical theory must face.[1]

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[1]The notation given in <u>Syntactic Structures</u> is used here for the standard theory rules.

We must consider rules for passivization and for indirect object generation; both processes are assumed to be optional.[2] The passive

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[2]In my dialect indirect object movement is practically obligatory. However, those grammaticality judgments given by Fillmore are accepted for purposes of this paper.

---

rule may be given as in (I).

$$
\begin{array}{c}
\text{(I)} \quad \text{NP} \quad \text{C (M)} \quad \text{(have en)} \quad \text{(be ing)} \quad \text{V} \quad \text{NP} \quad \text{X} \\
\quad\quad\quad 1 \quad\quad 2 \quad\quad\quad\quad\quad\quad\quad\quad\quad 3 \quad 4 \quad 5 \implies \\
\quad\quad\quad 4 \quad 2 \quad \text{be+en} \quad 3 \quad 5 \quad \text{by 1}
\end{array}
$$

The rules for indirect object sentences, along with (I), must account for (1) through (5):

    (1) a. John sent the package to Paula.
    (2) a. John sent Paula the package.
    (3) a. The package was sent to Paula by John.
    (4) a. Paula was sent the package by John.
    (5) a. *The package was sent Paula by John.

    (1) b. George caught a rabbit for Mary.
    (2) b. George caught Mary a rabbit.

(3) b. A rabbit was caught for Mary be George.
(4) b. *Mary was caught a rabbit by George.
(5) b. *A rabbit was caught Mary by George.

The fact that (4b) is ungrammatical and (4a) is not indicates that
separate rules must be formulated for to- and for-phrases. In this
light (II) and (III) are proposed.

$$
\text{(II)} \quad \begin{array}{ccccc}
\text{NP} & \text{V} & \text{NP} & \text{to} & \begin{bmatrix} \text{NP} \\ +\text{Anim} \end{bmatrix} \\
1 & 2 & 3 & 4 & 5
\end{array} \implies 1\ 2\ 5\ 3
$$

Conditions:
a. 2 must be lexically narmed [+IOM]. (Indirect
Object Movement)
b. 3 may be a pronoun only if it is a demonstrative.
c. 3 may appear as a pronoun in the surface
structure only if 5 does also.

$$
\text{(III)} \quad \begin{array}{ccccc}
\text{NP} & \text{V} & \text{NP} & \text{for} & \begin{bmatrix} \text{NP} \\ +\text{Anim} \end{bmatrix} \\
1 & 2 & 3 & 4 & 5
\end{array} \implies 1\ 2\ 5\ 3
$$

Conditions:
a. 3, 4, and 5 must be dominated by an identical
NP node.
b. 3 may be a pronoun only if
i. it is a demonstrative
ii. 5 is also a pronoun.

Fillmore has shown that the three rules above must be ordered (II),
(I), (III) in order to account for all of the sentences (1) through
(5). Directly following is some commentary on (II) and (III),
especially the constraints I have imposed.

Part II

Two pronominal constraints are given for (II). Since this rule
precedes passivization, the first of them accounts for the sentences
(6) through (11):

(6) *John sent Paula it.
(7) *John sent her it.
(8) *Paula was sent it by John.
(9) *She was sent it by John.
(10) Paula was sent that by John.
(11) She was sent that by John.

The surface structure constraint then rules out (12) but permits (13):

(12) *John sent Paula that.
(13) John sent her that.

Furthermore, pronominalization must precede (II) so that the sentences below may still be generated:

(14) John sent it to Paula.
(15) John sent it to her.
(16) It was sent to Paula by John.
(17) It was sent to her by John.
(18) That was sent to Paula by John.

The restriction of the mobile constituent to animate nouns prevents the (a) sentences below from producing the (b) sentences:

(19) a. The emperor extended his domain to the sea.
      b. *The emperor extended the sea his domain.
(20) a. The pitcher threw his hat to the ground.
      b. *The pitcher threw the ground his hat.

However, this constraint does not rule out nouns that denote collective bodies of individuals. Thus (21) will give (22) but (23) will not yield (24):

(21) Bob gave a check to the hospital.
(22) Bob gave the hospital a check.
(23) Bob took his wife to the hospital.
(24) *Bob took the hospital his wife.

The constraint on verbs deserves some discussion. The need to restrict this rule in this manner should be obvious; in any event (25) does not produce (26):

(25) Jacob suggested the movie to his friends.
(26) *Jacob suggested his friends the movie.

Furthermore, the sentences that undergo this rule generally denote endowment, or creation of possession. This suggests the possibility that we can require the verb to have a certain feature before the rule will apply to it. However, there are exceptions. Notice the sentences below:

(27) The treasurer gave the report to the president.
(28) The treasurer gave the president the report.
(29) Bill presented the report to the president.
(30) Bill presented the president with the report.
(31) *Bill presented the president the report.
(32) Lola transferred her account to another bank.
(33) *Lola transferred another bank her account.

(34) Mitchell explained the situation to Nixon.
(35) *Mitchell explained Nixon the situation.

Although any devisable semantic feature would include all the verbs
for which (II) works, the examples show that it would include some
for which it does not, and such a proposal is hence untenable. The
fact that _present_ has its own idiosyncrasy seems significant: the
only difference between the indirect object transformation and that
giving (30) from (29) is that one applies to one verb and the other
to many. In any event, such properties as these must in all cases
be given in the lexicon.

It is worthwhile to look at a number of verbs that allow (II) to
see how they fit into semantic groupings and to see the kinds of
individual constraints that must often be imposed. Some, but by no
means all, of the IOM items are given below:[3]

_____

[3]Many of these items are mentioned by Fillmore.

_____

(36)   give   hand   extend   sell   lend
         loan   take   send

(37)   write   tell   show   promise

(38)   throw   kick   hit

(39)   leave   will

(36) includes simple verbs of transfer. There is probably no verb
more susceptible to this rule than _give_: it allows (II) to operate in
many cases where the NP moved is inanimate, as shown below:

(40) The old man gave his son's remains to the earth.
(41) The old man gave the earth his son's remains.
(42) *Alvin gave a sprinkle to the flower bed.
(43) Alvin gave the flower bed a sprinkle.

Exception NP's such as these and cases where the rule is obligatory,
such as in the second example above, must of course be given for the
appropriate verb in the lexicon.[4]

_____

[4]Perhaps there is no precedent for allowing the feature specifi-
cation on part of an SD to be ignored if a particular lexical item is
found in the same SD. However, this is only slightly stronger than
the exceptionality of individual items discussed by Lakoff and Peters,
and the concept of exception features in linguistic theory is also
defended by Postal. Furthermore, it should be kept in mind that I
am proposing this for only one lexical item.

_____

Hand and extend are basically synonymous to give,[5] and sell, lend,

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[5]That is, when the indirect object of extend is animate. As shown above, this is a necessary condition for the operation of the rule.

---

and loan denote mere semantic variations on giving. Take is the only one that indicates motion of bearer as well as object, although in those dialects where carry means essentially the same as take it is included in this group. Someone from Georgia, for instance, would in all likelihood readily accept (44) and (45):

    (44) Carry the grits to her.
    (45) Carry her the grits.

(38) includes what may be called verbs of propulsion; here, as in (36), there is direct motion. The two items in (39) must be semantically restricted to the sense which makes them synonymous: that is, that of a bequest. Will is of course otherwise intransitive and (46) comes from (47) rather than (48):

    (46) Leave Mr. Hatch that decision.
    (47) Leave that decision for Mr. Hatch.
    (48) Leave that decision to Mr. Hatch.

The situation with (37), however, is somewhat more complex. Tell undergoes the rule--as we would expect since it necessarily denotes communication (endowment with information)--but the lexical entry must include the qualification that (II) is obligatory with this verb when the direct object includes an embedded sentence but not lexical head noun. Note the sentences below:

    (49) Bill told the problem to a counselor.
    (50) Bill told a counselor the problem.
    (51) *Bill told that he was leaving for good to his wife.
    (52) Bill told his wife that he was leaving for good.
    (53) Tell the story I told you to the lodge members.
    (54) Tell the lodge members the story I told you.

This constraint also applies to show when it is semantically related to tell, as the sentences below show:

    (55) The gymnast showed his trophy to everybody.
    (56) The gymnast showed everybody his trophy.
    (57) *The politician showed how angry the allegation
               made him to everybody.
    (58) The politician showed everybody how angry the
               allegation made him.

Write, however, seems to be the unique verb in the entire set given above. First, sentences containing either promise or write undergo deletion before (II) applies (optionally) to them. Thus (59), (60), and (61) are part of a derivation, as are (62), (63), and (64).[6]

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[6]There is of course an alternative derivation for (64) in which (63) is replaced by (i).

    (i) Lorenzo promised to give his son a gondola.

---

    (59) Roe wrote a letter which he sent to the firm.
    (60) Roe wrote a letter to the firm.
    (61) Roe wrote the firm a letter.
    (62) Lorenzo promised to give a gondola to his son.
    (63) Lorenzo promised a gondola to his son.
    (64) Lorenzo promised his son a gondola.

Furthermore, if the direct object of write is letter or a synonym, this object may optionally be deleted. Thus (61) may be reduced to (65):

    (65) Roe wrote the firm.

But (66) does not yield (67):

    (66) One day Petrarch wrote a sonnet to Laura.
    (67) One day Petrarch wrote Laura.

By a slight extension of this principle (68) gives (69) which in turn yields (70).

    (68) Leo wrote a note saying he was leaving home to his
             father.
    (69) *Leo wrote that he was leaving home to his father.
    (70) Leo wrote his father that he was leaving home.

This property shows further that write has the same obligation as tell with regard to embedded sentences in the direct object.
    Finally, the behavior of certain "idioms" should be pointed out. Notice that (71) gives (72) and (73) produces (74):

    (71) Fred made a gift to the hospital.
    (72) Fred made the hospital a gift.
    (73) Lorenzo made a promise to his son.
    (74) Lorenzo made his son a promise.

It seems clear that (71) and (73) are derived transformationally from (75) and (76) respectively.

(75) Fred gave something to the hospital.
(76) Lorenzo promised something to his son.

Therefore, we need only say in the lexicon that sentences with <u>make</u> undergo (II) if the direct object NP is derived from a verb marked [+IOM].

Part III

Since (III) follows passivization and (4b) is hence ungrammatical, the pronominal constraint attached to it is slightly simpler than that given for (II). It is reflected in (77) through (80) in my dialect.
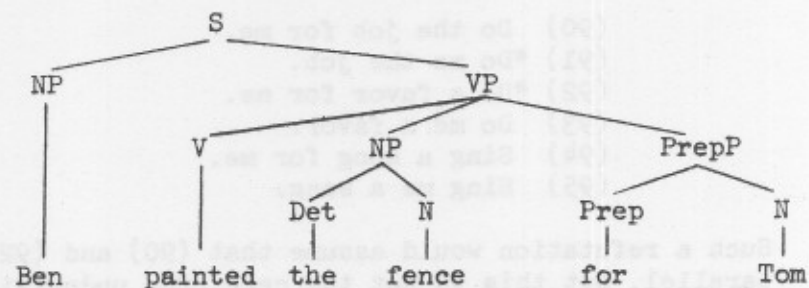
(77) *George caught Mary it.
(78) *George caught her it.
(79) *George caught Mary that.
(80) George caught her that.

More interesting, however, is the second constraint. Notice that the rule must account for (1b), (2b), (81), and (82):
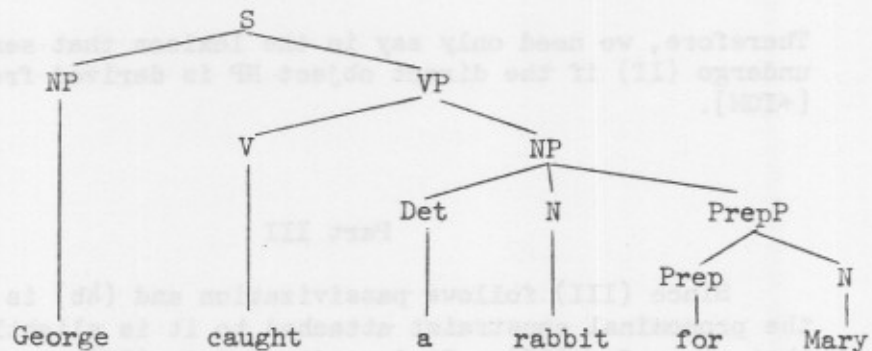
(81) Ben painted the fence for Tom.
(82) *Ben painted Tom the fence.

These examples lead us to suspect a difference between the underlying structures of (1b) and (81). It seems most reasonable to say that the <u>for</u>-phrase is adjectival in (1b) and adverbial in (81). The detailed structure of these sentences is shown in (83) and (84) respectively.

(83)

argument. (98) has the representation given in (99):

(98) Sing a song for her for me.

(99)

```
                          S
             ┌────────────┴────────────┐
            NP                          VP
             │          ┌───────────┬───────────────┐
             │          V          NP              PrepP
             │          │      ┌────┴────┐      ┌────┴────┐
             │          │     Det   N   PrepP  Prep       N
             │          │      │    │  ┌──┴──┐  │         │
             │          │      │    │ Prep   N  │         │
             │          │      │    │  │     │  │         │
            you        sing    a  song for  her for      me
```
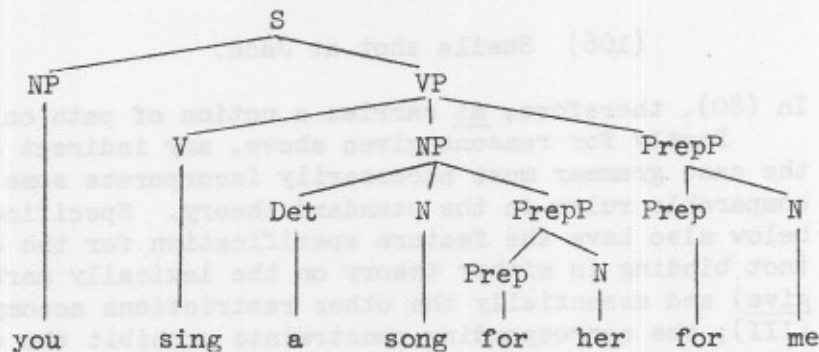
It is because (98) has such a structure that (III) will give (100)
from it but not (101) or (102):

       (100) Sing her a song for me.
       (101) *Sing me a song for her.
       (102) *Sing me her a song.

Part IV

    Now begins the climactic section of the paper which presents
rules for the generation of indirect object sentences within the frame-
work of the case grammar theory. To this end it has been suggested
that the prepositional object be considered an experiencer in (103)
but not in (104):

       (103) Sheila threw the frisbee to Jack.
       (104) Sheila threw the frisbee at Jack.

However, such a proposal is unfortunately inconsistent with the rest
of the theory on empirical grounds. Accepting it would necessitate
(105) as a base structure for (103):

       (105)

```
                          Snt
        ┌────────┬─────────┬─────────┬─────────┐
        V        A         E         O         G
        │        │         │         │         │
       NP        NP        NP        NP        NP
        │        │         │         │         │
      threw    Sheila     Jack  the frisbee   Jack
```
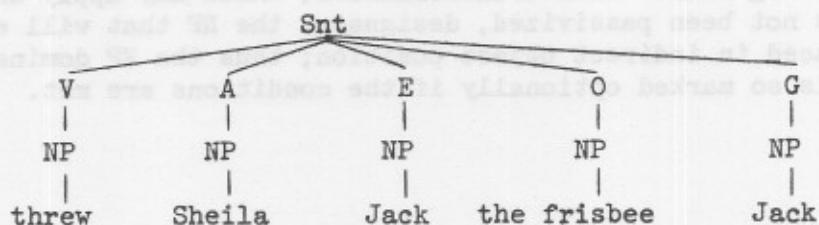
After Required Co-Referential Deletion removed the G node from the tree, Jack would then be incorrectly marked accusative. The problem thus posed for adding indirect object rules is, however, not as great as it might seem: neither can it be maintained that at-phrases denote goal. (104) does not say the frisbee hit Jack any more than (106) says he was shot:

    (106) Sheila shot at Jack.

In (80), therefore, at carries a notion of path only.

Partly for reasons given above, any indirect object rules in the case grammar must necessarily incorporate some features of the comparable rules in the standard theory. Specifically, the rules below also have the feature specification for the NP to be moved (not binding in either theory on the lexically marked exceptions for give) and essentially the other restrictions accompanying (II) and (III); the corresponding constraints prohibit the same sentences in both theories.

I first propose a rule which optionally applies if Passivization has already applied. This may be called Object Switching.

    (IV) Object Switching

$$V \quad Acc \quad S \quad \begin{bmatrix} G \\ +Anim \end{bmatrix} \quad Y$$

$$1 \quad 2 \quad 3 \quad 4 \quad 5 \implies 1 \ 4 \ 2 \ 3 \ 5$$

    Conditions:
        a. 1 must be lexically marked [+IOM]. (Indirect Object Marking)[7]
        b. 2 may be a pronoun only if it is a demonstrative.

---

[7]The same lexical constraint is necessary for (IV) and (V-A).

Object Switching is the first necessary step for generating (4a); it puts the NP dominated by G directly after the verb so it will then be marked nominative by the appropriate rule. Thus, if this rule has applied, the NP previously marked accusative undergoes no change in case as the result of Nominative Marking; if it has not, (3a) will result. The pronominal constraint rules out the inadmissible (8) and (9).

In order to provide for (1b), we need the Indirect Object Marking Rule. This transformation, which may apply only if the input has not been passivized, designates the NP that will eventually be placed in indirect object position; thus the NP dominated by G or B is so marked optionally if the conditions are met.

$$(B) \quad \text{Nom} \quad V \quad \overset{\text{Acc}}{[0} \quad \begin{bmatrix} B \\ +\text{Anim} \end{bmatrix} \quad X$$
$$1 \quad 2 \quad 3 \quad 4 \quad 5 \implies 1 \ 2 \ 3 \ ^{IO}[4] \ 5$$

Condition: 3 may be a pronoun only if
    a. it is a demonstrative
    b. 4 is also a pronoun.

Placing 3 and 4 in a single accusative constituent in (V-B) assures
that this rule will operate on (1b) but not on (81). The pronominal
constraints on both of these rules block (6), (7), (8), (12), (77),
(78), and (79). Indirect Object Marking immediately precedes Object
Formation.

      The modified Object Formation Rule appears below. This continues
to put the accusative to the immediate right of the verb unless there
is an indirect object to intervene.

    (VI) Object Formation

(A)	Nom	V	X	Acc	Y	(IO)	Z	
	1	2	3	4	5	6	7	$\implies$
	1	2	6	4 3	5	7		

(B)	Nom	V	Acc	Y	
	1	2	3	4	$\implies 1 \ ^{V}[2 \ 3] \ 4$

The second rule above, making a single constituent of the verb and
direct object if they are adjacent, insures that none of the force
of the previous unmodified Object Marking Rule is lost. If there
is an indirect object it attracts no prepositions by subsequent rules
because it is no longer marked B or G, and (2) is thus generated.
      We must finally provide for changing (107) to (108):

    (107) Mix up some chili for me.
    (108) Mix me up some chili.

By the time the rules already discussed have applied to (107), the
output will be (109):

    (109) *Mix up me some chili.

Therefore, and obligatory rule is necessary to change (109) to (107),
and (VII-B) does so.

    (VII) Particle Movement

(B)	$^{V}[V$	Part]	IO	Acc	
	1	2	3	4	$\implies 1 \ 3 \ 2 \ 4$

      In conclusion, it is my feeling that indirect object movement
is ultimately associated with endowment: to-phrase sentences indicate
the process itself and for-phrase sentences presuppose it will or

already has come about. Although lexical restrictions are necessary
to show that this movement does not work with certain verbs, a
theory with true descriptive adequacy in this area should not need
the other constraints imposed on (II) and (III). Case grammar has
proven malleable enough to incorporate the new rules without serious
difficulty: no reordering of existing transformations has been
necessary and it should be agreed that changes made in them to allow
for the additions have been minimal. However, it seems unfortunate
that there is no case in this theory to capture the feature common
to all structures underlying indirect object sentences. My guess
is that the theory would prove as receptive to such a new case as its
rules have to the additions proposed in this paper.

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Modality and Case Grammar*

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Introduction

Many difficulties encountered in syntactic treatments of modals
seem to be the result of insufficient knowledge of the semantic
relationships underlying modality in general. It is well known
that modality includes much more than what is traditionally called
"modal auxiliaries."[1] But there seems to be little agreement as to

[1]See e.g., J. Lyons (1968), pp. 307 ff.

how much should actually be accounted for in a treatment of modality.
It is not our purpose to revive the old conflict about whether
'moods' or 'modality' denote categories of form rather than of
meaning, or whether it is possible to place all moods in a logically
consistent system and to arrive at a "notional" theory of modality.[2]

[2]For an outline of these problems, see O. Jespersen (1924),
pp. 315-321.

However, we believe that it is essential to look for the underlying
logical relationships of modality, and possibly for a basic meaning
(Grundbedeutung[3]), before looking for the "various overtones" that

[3]See e.g., G. Bech (1949), M. Ehrman (1966), who tried to
abstract the "basic meaning" of modals. In a similar way, R.

Jakobson (1936) attempted to reduce the Russian Cases to some "Gesamtbedeutung" (as pointed out by H. Vater (1970)).

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modals receive in various contexts.[4] It appears reasonable to assume

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[4]This is the point of view adopted by G. Leech (1970), p. 202.

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that there is a basic semantic system of modality which is more or less completely represented in each language.

Our evidence will mainly be drawn from the system of modals in German (occasionally in Dutch and in French), for German modals offer a clearer and apparently more complete picture of the general system of modality we want to propose. In particular, they present better evidence than English modals for postulating that modals should be treated as main verbs and for illustrating the underlying semantic relations of modals in general.

In a first section we will shortly discuss the evidence that has been proposed for considering modals as main verbs. We will then examine, in a second section, some syntactic characteristics of German modals and solutions that have been proposed thus far. The necessity of a semantic approach to the major problems related to modality will be pointed out in a third section and followed by proposals for a new treatment based essentially on the use of semantic features in the framework of Fillmore's partly revised case grammar.[5]

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[5]Charles Fillmore (1970b). We will apply some of his proposals for reincorporating 'modality' in the 'proposition' of the sentence, as they were presented in the Seminar on Syntax at the 1970 Linguistic Institute, Ohio State University.

Derivations of the major types of modality in German will be added in section 4 as an illustration of how modals can be generated, accounting for both their basic ambiguity and the various synonymy relations between their (syntactically) very different realizations.

Finally, in an attempt to further abstract the meaning of modals, we will add a few considerations about modality and the speech act and proposals for a more general definition of modality.

1. Modal Auxiliaries as Main Verbs

In recent treatments of English modals there seems to remain a certain disagreement as to whether modals should be analyzed as main verbs in the deep structure. It is significant that linguists who are most convinced of the necessity to treat modals as main verbs often base their arguments, at least in part, on German

examples.[6]

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[6]See mainly J. R. Ross (1968), pp. 6 ff; J. Lerot (1969); H.
Vater (1970).

1.1. Looking at the surface, it appears that modal verbs
behave differently from main verbs. Jackendoff (1968) pointed out
some properties of English modals, which he calls "unverblike
properties": "They do not occur together, they do not participate
in number agreement, and perhaps most important, they do not have
participles or infinitives," and so "can only occur in the leftmost
position." (pp. 5-6).

It is easy to show that none of these restrictions holds for
German.[7] In (1) two modals occur together; one participates in number

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[7]This was pointed out by H. Vater (1970).

---

agreement, the other has the infinitive form and does not occur in
the leftmost position:

    (1) Das <u>sollten</u> Sie beweisen <u>können</u>.
         "You should be able to prove that."

Such facts about German modals (and similarly about Dutch and French
modals)[8] indicate that the so-called "unverblike properties" are

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[8]Jackendoff's properties are not valid for French and Dutch either:

    (i) Il <u>faut vouloir</u> pour <u>pouvoir</u>.
         "One must be willing in order to be able."

    (ii) Hij <u>zou</u> het eigenlijk hebben <u>moeten kunnen</u> doen.
         "He should in fact have been able to do it."

Note that Dutch allows for more than two modals to co-occur. The
same is true for German. Bierwisch (1963, p. 69, quoted by Vater)
gives examples for sequences of three and even four modals.

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idiosyncratic properties in the surface structure of 'modal auxiliaries'
in English. This could certainly be used as an argument for considering
modals as true verbs. Ross (1968) has given other convincing arguments
for analyzing modal auxiliaries as "true verbs, differing from 'real'
verbs like <u>versuchen</u> ('try') only in having the feature [+Modal],
where the latter has the feature [-Modal]." (p. 7). In a discussion
of the transitive-intransitive character of the verb 'begin' in the
deep structure, Perlmutter (1970) suggests the same analysis for

modals like <u>must</u> in order to account for their "systematic ambiguity"
(p. 115).9 He concludes that if "modals are transitive-intransitive

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9The same approach is proposed by Ross (1968) for German modals,
and by Vetter (1967) for 'need'. H. Vater (1970) adopted a very
similar approach (see 2 below). It was impossible to consider
Vater's more recent work on the System of Modal Verbs in German,
which he is preparing for publication. Our references to his views
might therefore be a little outdated.

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verb doublets in deep structure, this will constitute evidence for
the hypothesis argued in Ross (1968) that there is no [auxiliary]
constituent in deep structure, and that the so-called 'auxiliary
verbs' are real verbs in deep structure."

    1.2. On the other hand, the distinction between modal and
non-modal verbs is particularly unclear in English. We know that
in surface structure modals co-occur with other verbs and somehow
modify their meaning. However, it has often been pointed out that
their function is not always clearly distinguished from tense and
aspect markers as they appear with main verbs.10 Furthermore, in some

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10See J. Lyons (1968), "Intersection of tense and mood" (p. 309),
"Intersection of tense and aspect" (p. 316). This ambiguity was
also pointed out by Vater (1970). O. Jespersen (1924) rejects the
terms "modal past tense" and "mood-tense" used by the NED and by
Sweet respectively, as inadequate, because "'moods' have no fixed
notional value." (p. 267, note 1).

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cases English uses auxiliary verbs or other verbs to express the
meaning conveyed by modals in German:

    (2) a. The house <u>is to be</u> sold.
             Das Haus <u>muß</u> verkauft werden.
        b. He <u>wants</u> to come.
             Er <u>will</u> kommen.
        c. He <u>would like</u> to come.
             Er <u>möchte</u> kommen.
        d. He is <u>supposed</u> (<u>expected</u>) to come.
             Er <u>muß</u> kommen.
        e. He <u>claims</u> to be an actor.
             Er <u>will</u> Schauspieler sein.
        f. The film <u>is said to</u> be good.
             Der Film <u>soll</u> gut sein.11

11Notice the English "semi-modal" <u>dare</u> and the corresponding
words in German (<u>wagen</u>) and Dutch (<u>durven</u>), which are 'pure' verbs.

It is also interesting to examine the semantic relation between
the etymologically related Dutch durven, English 'dare', and German dürfen
'be allowed, may'. (See below, p. 119).

In the case of 'want', 'claim' and 'said to', English does not
have modal auxiliaries to express what clearly appears to be modality
in German. If we consider the meaning that these verbs convey as
part of the semantic system of modality, we can say that these verbs
function semantically as modals. But for the rest, without even
postulating any deep structure, we have to recognize that they are
pure verbs. This is also true for the various paraphrases of modal
verbs which we want to derive from the same deep structure as the
modal verbs which they are synonyms of:

(3) a. He can read it.
    b. He is able to read it.

(4) a. He can read it.
    b. He is allowed to read it.

We will not further argue about this problem now. The evidence for
considering all auxiliaries as main verbs in the deep structure will
certainly increase as we concentrate on the system of German modals.

2. Some Syntactic Characteristics of German Modals

2.1. The surface structure of German modals reveals an important
difference between the syntactic behavior of wollen and that of the
other modals. Vater (1970) considers the following major differences:
2.1.1. wollen is the only modal allowing for a daß-sentence:

(5) a. Sein Vater will, daß er zu Hause bleibt.
       "His father wants him to stay home."

    b. *Sein Vater muß, daß er zu Hause bleibt.
       *"His father must that he stays home."

2.1.2. wollen is the only modal that can be passivized:

(6) a. Von Hans wird gewollt, daß Anna zu Hause bleibt.
       *"By Hans is wanted that Ann stays at home."

    b. *Von Hans wird gemußt, daß Anna zu Hause bleibt.

2.1.3. The passivization of the complement of wollen requires
an interpretation different from the interpretation of the passivized
complements of the other modals:

(7) a. Inge konnte von Peter geküßt werden.
       "Inge could be kissed by Peter."

    (7) b. Inge <u>will</u> von Peter <u>geküßt werden</u>.
            "Inge wants to be kissed by Peter."

(7a) is identical with (8a), but (7b) is different from (8b):

    (8) a. Peter <u>konnte</u> Inge küssen.
            "Peter could kiss Inge."

         b. Peter <u>will</u> Inge küssen.
            "Peter wants to kiss Inge."

    2.2. On the basis of the syntactic properties that <u>wollen</u> does not share with the other modals, Vater (1970) proposes to adopt the distinction between 'transitive' (for <u>wollen</u>) and 'intransitive' (for the other modals) as suggested by Perlmutter (1970). This is to reflect the deep structure differences which condition the surface differences just mentioned. Sentences (8a) and (8b) are then derived in the following way:[12]

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[12]The derivations are adapted from Perlmutter (1970, pp. 107-108) and Vater (1970). Notice the following constructions in French:

    (i) Il <u>faut</u> qu'il vienne.
        "He must come, it is necessary for him to come."

    (ii) Il se <u>peut</u> qu'il vienne.
        "It is possible that he will come."

where the that- sentence <u>qu'il vienne</u> occurring after the modals <u>pouvoir</u> ('can' or 'may') and <u>falloir</u> ('must') functions as a subject NP as shown in the derivation of (8a).

---

    (8) c.

Peter   Anna   küssen   können

(8) d.

```
                        S
           ┌────────────┴────────────┐
          NP                         VP
                              ┌───────┴───────┐
                              S               V
                         ┌────┴────┐
                        NP        VP
                              ┌────┴────┐
                             NP         V
       Peter      Peter     Anna     küssen      wollen
```
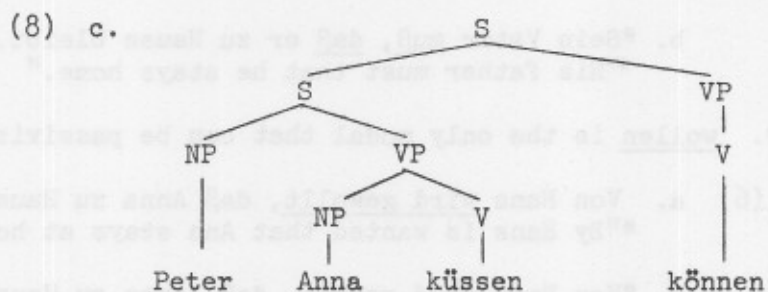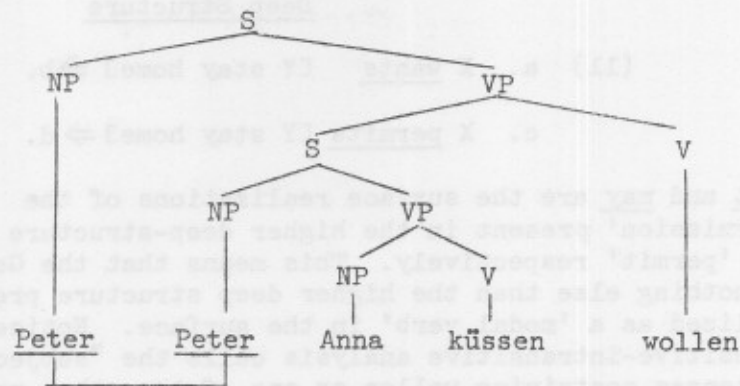
If the subject of the embedded sentence with <u>wollen</u> in (8d) is
different from the subject of the higher sentence, it can not be
deleted and the conjunction <u>daß</u> is inserted, as in:

> (9) <u>Peter</u> will, daß <u>Anna</u> ihn küsst.
> "Peter wants Ann to kiss him."

With all the other modals, the subject of the embedded S has to be
identical with the subject of the higher S, as in

> (10) Peter <u>muß</u> Anna küssen.
> "Peter must kiss Ann."

where Peter is the subject of both predicates (<u>müssen</u> and <u>küssen</u>).
As for the passivization of <u>wollen</u>, it is easy to show how the
complement <u>daß</u>-sentence becomes the subject of the passive verb.
The difference between passivization of the complement sentence of
<u>wollen</u> and that of the complement sentences of the other modals
is also a result of the different deep structures of the transitive
<u>wollen</u> and the intransitive modals.

    2.3. Although this analysis of modals offers a reasonable
solution of the <u>syntactic</u> problems outlined in 2.1., it is clearly
inadequate in many respects. We will consider two major shortcomings
here and then try to extend the scope of the analysis in order to
include all aspects of modality.

    2.3.1. As we noticed, the transitive-intransitive analysis is
based on the syntactic differences between <u>wollen</u> and the other German
modals. But these differences are only one aspect of a more essential
<u>semantic</u> difference in the deep structure. We will see below that
modality is a semantic property of a higher predicate in the deep
structure which is <u>often</u> (but by far not always) realized as a 'modal
verb' in the surface. There is a perfect structural similarity
between:[13]

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[13]The angle brackets delimit the embedded sentence in the
deep structure and its corresponding surface realization.

	Deep Structure		Surface Structure

(11) a. X <u>wants</u>   [Y stay home] ⟹ b. [Y <u>must</u> stay home]

    c. X <u>permits</u> [Y stay home] ⟹ d. [Y <u>may</u> stay home]

<u>Must</u> and <u>may</u> are the surface realizations of the 'volition' and 'permission' present in the higher deep-structure predicates 'want' and 'permit' respectively. This means that the German modal <u>wollen</u> is nothing else than the higher deep structure predicate itself realized as a 'modal verb' in the surface. Notice that what the transitive-intransitive analysis calls the "subject" of the main sentences containing <u>wollen</u> or one of the other modals does not always express the same function. Thus, the subject of <u>wollen</u> expresses the "origin" of the 'volition', whereas the subjects of <u>sollen</u> or <u>dürfen</u> express the "destination" ("beneficiary", "experiencer") of the 'volition' and the 'permission' (see below, 3.2.). The syntactic analysis proposed by Perlmutter and Ross fails to explain the difference between these underlying 'roles'. We will return to further implications of this analysis later. It may suffice here to point out that we should not be misled by the surface differences between <u>wollen</u> and all other modals in German, and that we have to look for the deep semantic structure underlying the modals. <u>Wollen</u> then has to be paralleled with <u>erlauben</u> 'permit', although in the surface the former is a 'modal' and the latter a 'pure' verb. We feel this to be a strong argument for dropping the distinction between 'modal verbs' and 'pure verbs'. Whether, and where, we need a feature [+MODAL] (as suggested by Ross) will be examined below (3.2.2.).

    2.3.2. Another shortcoming of the transitive-intransitive analysis is related to Perlmutter's (and partly also Jackendoff's and Ross') suggestion to use this analysis to account for the following ambiguity of modals like 'must' (using Perlmutter's examples, p. 115):

        (12) a. Clyde <u>must</u> work hard.

paraphrasable as (12b) and (12c).

        (12) b. Clyde <u>is obliged to</u> work hard.
            c. <u>It must be the case</u> that Clyde works hard.

Such pairs of meaning (sometimes called 'objective' and 'subjective' meaning of modals) will be shown to be derived from deep structures parallel to (11a) and (11c), but involving one more embedded sentence. Semantically, however, we will postulate the same modality feature [+obligation] underlying both meanings of 'must' (see 3.2.).

3. The Semantics of Modality

The differences accounted for by the "standard theory" (outlined in 2.) are clearly only one aspect of the syntax and

semantics of modals. We will try to show that they can be explained
much more adequately within a theory of the semantics of modality.

But what is 'modality'? If we look at the literature on
'moods' or modality, we find the following general considerations.
Jespersen (1924) pointed out that "moods express certain attitudes
of the mind of the speaker towards the content of the sentence"
(p. 313), thus following Brugmann, Oertel and Noreen (mentioned
in note 1, p. 313). But he fails to relate this aspect of modality,
at least explicitly, to the function of modal verbs. Lyons (1968)
categorizes sentences in two major groups: the "class of sentences
which express simple statements of fact, unqualified with respect to
the attitude of the speaker towards what he is saying" (p. 307).
This class he calls the "non-modal" class of sentences (i.e.,
'unmarked' for mood). The other class of sentences, which are
'marked' for mood, consists essentially of <u>imperative</u> and <u>interro-
gative</u> sentences, which "stand in contrast to declarative sentences
by virtue of their modality". Apart from these modalities expressing
commands or instructions produced by the speaker (in the case of
imperatives) and the expectations of the speaker (in the case of
interrogatives), Lyons considers the "large variety of ways in which
the 'attitude' of the speaker is grammatically marked in different
languages" (p. 308). These "other modalities" (or "scales of
modality") which have obvious affinities with the modalities expressed
by imperatives and interrogatives, are frequently expressed with
the help of 'modal auxiliaries' (a term which Lyons does not use).

In recent work in linguistics the affinities between 'moods'
and 'modal verbs' have not been explicitly accounted for. They
sometimes seem to be implicitly assumed, as in Leech (1970) and
Langendoen (1969; 1970), but most frequently the approaches are
restricted to modals and their paraphrases. However, within the
"performative" analyses (mainly Ross (1970; 1971) Boeder (1968),
Wunderlich (1968), Sadock (1969), Downing (1969), and Casagrande
(1969)), an increasing attention is given to the derivation of
imperatives and interrogatives. Boyd and Thorne (1969) apply the
performative analysis to the semantics of English modals, and show
the similarities between imperatives, modals expressing some degree
of 'volition', and questions (which are analyzed as a "special type
of imperatives", i.e., "commands to say" (p. 61)).[14] Within this

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[14]See also Casagrande (1969), p. 87 ("asking a question is
a request for an answer") and Ross (1970), p. 263, Note 19.

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framework, modal verbs are treated "as indicating the illocutionary
potential of the sentences in which they occur" (p. 62). The
higher sentences postulated in the deep structure of modal sentences
(see our examples (11a) and (11c)) are said to "carry the illocutionary
potential of the sentence", whereas the embedded sentences are termed
"its 'propositional content'" (p. 59).

By viewing modality in this broader perspective we are able
to grasp the real problems that have to be solved in relation to

'modal verbs'. We will first outline these problems, concentrating mainly on German modals (in 3.1.);[15] we will then make proposals to

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[15]We do not attempt to describe all the meanings of German modals. However, we are convinced that they can be fitted into the system which we propose to account for the basic meanings.

---

account for the examined facts in terms of semantic features and Fillmore's case grammar (3.2.).

3.1. Most of the problems encountered in a description of modals have to do with the semantic relations of synonymy, ambiguity, and inversion.[16]

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[16]We use this term in the sense of Leech's "principle of inversion systems": "if one term is substituted for the other and the position of the negative is changed, the utterance undergoes no change of meaning" (p. 205). 'All' and 'some' are 'inverses' as shown in the synonymy between (i) and (ii):

    (i) Not all utterances are ambiguous.
    (ii) Some utterances are not ambiguous.

3.1.1. We first want to capture the relationship between the following pairs of modals

    (13) a. wollen and sollen
              "want, have to"

          b. erlauben and dürfen
              "permit, may (be allowed)"

in constructions of the following type (compare to (11a)-(11d) above):

    (14) a. X will, daβ Y...   and   Y soll...
            or Von X wird gewollt, daβ Y...

          b. X erlaubt, daβ Y...   and   Y darf...
            or Von X wird erlaubt, daβ Y...

In order to account for the possible synonymy between the members of each pair,[17] we will postulate that the modals sollen and dürfen (and

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[17]It is obvious that the right members of these pairs are synonymous with the left members if the "origin" of the 'volition' or 'permission' is also X.

similarly <u>müssen</u> and <u>können</u>) have in their underlying structure the "verbs" <u>wollen</u> and <u>erlauben</u> respectively, or rather a complex of features, one of which stands for the 'volition' and the 'permission' expressed by <u>wollen</u> and <u>erlauben</u> respectively.

3.1.2. We similarly want to capture the relationship between the members of the following pairs

(15) a. <u>wollen</u> 'want', and <u>erlauben</u> 'allow'
b. <u>müssen</u> 'must', and <u>können</u> 'may'

which are 'inverses' (see note 16). We must be able to express this relation in the basic meaning features which we postulate for modality. The complexity of combinations of modals with negation can be significantly reduced once we understand this logical relationship. (See mainly Leech (1970), p. 205.)

3.1.3. Another important fact about modals which we would like to account for is the synonymy between <u>modals</u> (sub (a)) and the <u>predicative adjectives</u> or <u>past participles</u> (sub (b)) which can be used to paraphrase them:

(16) a. <u>können</u>   b. möglich 'possible'
                              erlaubt 'allowed'
     <u>müssen</u>   nötig 'necessary'
                              gewollt 'wanted'
     <u>sollen</u>   gewollt 'wanted'
                              nötig 'necessary' (?)[18]
     <u>dürfen</u>   erlaubt 'allowed'
     <u>mögen</u>   erlaubt 'allowed'

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[18]<u>Der Große Duden</u>, 2 (<u>Stilwörterbuch</u>) and Wahrig, <u>Deutsches Wörterbuch</u>, do not list <u>sollen</u> in the meaning of 'causal necessity' and <u>müssen</u> in the meaning of 'volition'. However, since the latter is accepted by many native speakers, we will consider it in our analysis.

To the paraphrases illustrated under (16b) we could also add those that are used to indicate a certain degree of 'probability' which these modals can express (see 3.1.5.). We should therefore introduce modality as a predicate in the deep structure, allowing the specification of the lexical category ((modal) verb, adjective, adverb, noun) to enter the derivation at a later stage, probably with lexical insertion. We will see how the use of semantic features instead of lexical entities simplifies the generation of modality (see 3.2.).

3.1.4. The paraphrases under (16b) suggest that the modals <u>können</u> and <u>müssen</u> are ambiguous in the following way:

(17) a. <u>müssen</u> ⟨ (a) <u>sollen</u>, <u>gewollt</u> 'wanted, obliged'
                    (b) <u>nötig</u>   'necessary'

$$(17) \quad \text{b.} \quad \underline{\text{können}} \begin{cases} \text{(a)} \quad \underline{\text{dürfen, erlaubt}} \quad \text{'permitted'} \\ \text{(b)} \quad \underline{\text{möglich}} \qquad\qquad \text{'possible'} \end{cases}$$

In the system illustrated in (17a) and (17b), the modals <u>sollen</u> and <u>dürfen</u> are typically unambiguous in that they only convey the meanings listed sub (a). German thus shows a rather neat system with two pairs, of which the second member only (sub (b)) is ambiguous:

(18) a. <u>sollen</u>   b. <u>müssen</u>
          <u>dürfen</u>   <u>können</u>

Class (a) and class (b) are therefore to some extent in complementary distribution.[19] This dichotomy can easily be accounted for within

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[19]It is interesting to notice that the opposition between (a) and (b) is not lexically realized in the Romance languages:

(i) French: <u>devoir</u>
     Spanish: <u>deber</u>   'obligation and necessity'

(ii) French: <u>pouvoir</u>
     Spanish: <u>poder</u>   'permission and possibility'

---

the framework already mentioned above by deriving the meanings (a) and (b) roughly in the following way:[20]

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[20]Taking <u>müssen</u> and <u>können</u> in their most typical meaning (as illustrated in the (b) alternatives of (17)).

---

(19) a. <u>sollen</u> from [person] wants, that...
          <u>dürfen</u> from [person] permits, that...

      b. <u>müssen</u> from [something] obliges, necessitates...
          <u>können</u> from [something] allows, makes possible...

[PERSON] stands for the <u>Agent</u> of the underlying 'volition' or 'permission', and [SOMETHING] stands for the <u>Cause</u> of the underlying 'obligation or 'possibility'.[21] We will see below that this

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[21]<u>Agency</u> is usually understood as causation limited to <u>human causes</u>, <u>Cause</u> is then referring to <u>non-human causes</u> (Leech, p. 205; Lyons, pp. 352-353, 359-360). We will see below that in modal sentences <u>cause</u> stands for the 'facts', 'circumstances', 'events', etc., which are at the origin of the 'necessity' (or 'obligation') and the 'possibility' (or 'capacity') expressed by the modals <u>müssen</u>

and <u>können</u> respectively. The distinction between 'causal' and 'agentive' necessity or possibility is particularly explicit in Bech's terminology (1949):

> (i) volitiv bestimmte Notwendigkeit ('agentive necessity')
> volitiv bestimmte Möglichkeit ('agentive possibility')
> kausale Notwendigkeit ('causal necessity')
> kausale Möglichkeit ('causal possibility')

Leech (1970) similarly distinguishes between 'possibility' and 'necessity' (our 'causal' modalities) and 'permission' and 'obligation' (our 'agentive' modalities) adding that "<u>possibility</u> and <u>necessity</u> logically include <u>permission</u> and <u>obligation</u>" (p. 217). In other words, he considers 'permission' as "a particular kind of <u>possibility</u>" and 'obligation' as "a particular kind of <u>necessity</u>". Note that the cause-agent dichotomy is also present in such verb pairs as

> (ii) to prevent from (according to Leech, 'causation' only)
> to forbid ('authority' only, in Leech's terms).

distinction plays an essential role in the underlying system of modality.

3.1.5. The most typical ambiguity of modals lies in their ability to express a certain degree of 'probability' or 'certainty'. This second meaning of modals has been termed 'subjective' (e.g., in German Grammars), 'hypothetical' (e.g., in Leech (1970)), 'inferential' (e.g., in Lyons (1968)), 'epistemic' or 'predictive' (e.g., in Fillmore (1970a)) as opposed to their 'objective' or 'pragmatic' meaning. The system of German modals exhibits a complete regularity in that they can all be used to convey the inferential meaning.[22]

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[22]We will use the term 'inferential' because it best expresses the exact nature of this type of modality (see below).

Let us briefly examine these meanings and see how they offer the strongest evidence for the general theory of modality that we want to postulate.

First consider the following examples with <u>können</u>, <u>mögen</u>, <u>dürfen</u>, <u>werden</u>, and some paraphrases of their inferential meaning:

> (28) a. Peter <u>kann</u> das Geld nehmen.
> "Peter may take the money."
>
> or Es ist <u>möglich</u>, daß Peter das Geld nimmt.
> Es <u>kann sein</u>, daß ...
>
> b. Peter <u>mag</u> das Geld nehmen.
> "Peter may take the money."

Es ist <u>möglich</u>, daß ...
Es <u>mag sein</u>, daß ...

    c. Peter <u>dürfte</u> das Geld nehmen.[23]
        "Peter might take the money."

---

[23]Peter <u>darf</u> das Geld nehmen (with the modal in the present tense) cannot convey the inferential meaning.

Es ist wohl <u>möglich</u>, daß ...
Es <u>könnte</u> sein, daß ...

    d. Peter <u>wird</u> das Geld nehmen.[24]
        "It is probable that..."

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[24]<u>werden</u> is the only German modal which does not have a clear 'objective' meaning. However, H. Vater pointed out that it can sometimes convey the meaning of a 'command' or a 'threat'. We might want to call this its 'objective' meaning. Notice that <u>werden</u> is also used as an auxiliary for the future, a function which is obviously connected with its inferential meaning.

Notice that most of these modal sentences, when expressing the inferential meaning, would have a much higher probability of occurrence with an embedded verb in the past tense. They could then not carry the 'objective' meaning, as in

    (21) a. Peter <u>mag</u> das <u>getan haben</u>.
            "Peter may have done that."

         b. Peter <u>wird</u> das <u>getan haben</u>.
            "Peter probably did that."

Let us now look at the following examples with <u>müssen</u>, <u>wollen</u>, <u>sollen</u> and some paraphrases (considering only their inferential meaning):

    (22) a. Peter <u>muß</u> früh aufstehen.
            "Peter must get up early. I am certain that..."

            Es ist <u>sehr wahrscheinlich</u>, daß Peter früh aufsteht.
            "It is highly probable that..."

            <u>Ich bin sicher</u>, daß ...
            "I am sure that..."

(22) b. Peter <u>soll</u> sehr fleissig arbeiten.
"Peter is said to work very hard. They say that..."

<u>Man sagt</u>, daβ Peter sehr fleissig arbeitet.
Es <u>wird behauptet</u>, daβ...

c. Peter <u>will</u> Schauspieler sein.
"Peter claims that he is an actor."

Peter <u>behauptet</u>, daβ er Schauspieler ist.
Peter <u>will glauben machen</u>, daβ ...
"He wants people to believe..."

We notice immediately that, whereas (22a) expresses 'probability' or 'certainty' in the same way as the modals in the sentences under (20)--although probably a higher degree of certainty--(22b) and (22c) convey a different type of 'probability'. To express this modality, English uses verbs like 'said to', 'claim', which are usually not considered as modal verbs.

As far as the meaning of these two modals <u>sollen</u> and <u>wollen</u> is concerned, it is clearly 'inferential', that is, <u>something has to be inferred as a result of what is said or claimed</u>. However, it is particularly important to distinguish between the various 'roles' involved in the deep structure of this type of sentences. Further-more, we want to explain the use of the modals <u>sollen</u> and <u>wollen</u> (usually expressing 'volition', from the point of view of its 'agentive origin' or its 'destination') in these inferential sentences and to relate these special types of modality to the inferential meanings expressed in (20) and (22a). We will say that the use of the modals <u>wollen</u> and <u>sollen</u> to express 'inference' (in the meaning of 'claim', 'said to') is not arbitrary and that it implies the presence of a 'volition' in the underlying structure.[25]

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[25]Compare with the verb 'dare', sometimes called a "semi-modal" in English. The Dutch verb with the same meaning is <u>durven</u>. These verbs are etymologically related to German <u>dürfen</u> (meaning 'may, be allowed'). We tentatively propose that in the underlying semantic representation of 'dare' (Dutch <u>durven</u>, German <u>wagen</u>) there is a modality feature 'permissive'. (see below).

We will return to these problems and propose a solution in our next section. At this point we should mainly remember the basic dichotomy between 'inferential' and 'non-inferential' modalities, keeping in mind the almost perfect parallelism in the system of German modals.[26]

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[26]The distinction between 'inferential' and 'non-inferential' is not at all clear in Leech (1970). His terms "probability", "possibility", "necessity" and "hypothetical" all cover some part

of the 'inferential modality'. On the other hand, the type of
inference represented by <u>sollen</u> and <u>wollen</u> in (22b) and (22c) is
not apparent in the English modal system, which is probably the
reason why Leech has not included it.

3.1.6. The semantic relationship between modals expressing
'volition' and imperative sentences, or even questions, is another
important fact that we want to investigate. Lyons (1968) points
out that "there is an affinity between imperative sentences and
the modalities of 'wish' and 'necessity', on the one hand, and
between interrogative sentences and the modality of 'possibility',
on the other" (pp. 308-309). He gives the examples: <u>Will you come</u>
<u>here</u>? "an overtly interrogative sentence", and the imperatives
<u>Come here, will you</u>? or <u>Come here</u>! which may be semantically
equivalent with the interrogative sentences.

As we pointed out before, it is within the performative analysis
that the derivation of imperatives and questions seems to be best
understood. The following derivations have been proposed: <u>Come</u>
<u>here</u>! from <u>I want [you come here]</u> or (Ross (1971)) <u>I command you [you</u>
<u>come here]</u>[27] and <u>Will you come with me?</u> from <u>I want [you tell me</u>
<u>[you come with me]]</u> or (Ross (1970)) <u>I request of you [you tell me</u>
<u>[you come with me]]</u>.

---

[27]We will not discuss the problem of how to represent the
'addressee' or 'destination of the order' here. (See 3.2. for
the introduction of deep cases adapted from Fillmore.)

We can thus say that "the imperative underlies the interrogative
process" (Casagrande (1969), p. 87), since "asking a question is a
request for an answer". Furthermore, the imperative itself is
nothing else than the surface realization of the modality of 'volition',
but within a special context: the 'origin' of the volition has to be
the speaker, and the 'destination' is normally the hearer.[28]

---

[28]See Downing (1969) for an investigation of 3rd person
imperatives.

Any theory for modality should therefore allow us to explain
the different types of 'volition' modality and the synonymy
relations existing between them.
3.1.7. Finally, we want our theory to account for the relations
between modality and the <u>speech act</u>. Not only are the attitudes
of the speaker (or hearer) basic to the meaning of modality, but
modals also frequently function as 'performative' verbs. Boyd and
Thorne (1969) have analyzed English modals from the point of view
of the speech act. We will try to situate our theory of modality
with respect to the performative analysis and investigate how the

underlying 'roles' which we postulate for modality relate to the speech context.

3.2. A theory of modality has to account for at least all the facts just outlined, and maybe more. On the basis of these facts, we will first present the essentials of the <u>logico-semantic system of modality</u> (3.2.1.). In order to account for the basic meanings of modality we will postulate a <u>set of semantic features</u> (3.2.2.). We will then propose a <u>model</u> generating grammatical modal sentences by performing operations on underlying structures consisting essentially of sets of features and <u>deep cases</u> (3.2.3.).

3.2.1. We want to represent the general systems of modality with the following charts (23) and (24):

(23)   (1)   <u>NON-INFERENTIAL</u>

	(A) <u>VOLITION</u>	(B) <u>CAUSATION</u>

(I) <u>OBLIGATION</u>	(α) X want [Y...
	
	      Y must... (β)
		(α) X necessitate [Y...
		
		      Y have to... (β)

(II) <u>POSSIBILITY</u>	(α) X allow [Y...
	
	      Y can... (β)
		(α) X make possible [Y...
		
		      Y can... (β)

where   X = <u>animate</u>   X = <u>inanimate</u>

        Y = animate   Y = animate (or inanimate)

(24)   (2) <u>INFERENTIAL</u>

	(A) VOLITION	(B) CAUSATION
(I) OBLIGATION	X want [Y infer (α) [Z...	X necessitate [Y (α) infer [Z...
	Z said to... (β)	Z must (be)... (β)
(II) POSSIBILITY	X allow [Y infer (α) [Z...	X make possible [Y (α) infer [Z...
	(Z may be thought to..) (β)	Z may (be)... (β)
	X = <u>animate</u>	X = <u>inanimate</u>
	Y = animate	Y = animate
	Z = animate or inanimate	Z = animate or inanimate

The two types of modality, <u>NON-INFERENTIAL</u> (1) and <u>INFERENTIAL</u> (2), exhibit the same logico-semantic systems of <u>OBLIGATION</u> (I) and <u>POSSIBILITY</u> (II) with the same alternatives of <u>VOLITION</u> (A) and <u>CAUSATION</u> (B).

Boyd and Thorne (1969) have proposed a characterization of the <u>types of modality</u> ((1) and (2)) in terms of the "illocutionary potential" of the modal statements. We will represent it in the following way:

(25)	NON-INFERENTIAL	INFERENTIAL
OBLIG.	(a) ILLOCUTIONARY POTENTIAL	(c)
	statement of a <u>necessary demand</u>	statement of a <u>necessary inference</u>
POSSIB.	(b) statement of a <u>permission</u>	(d) statement of a <u>possible inference</u>

We can illustrate these types of modality with the following examples (the examples under (25) are from Boyd and Thorne, p. 69): <u>non-ambiguous</u> (with respect to the ±INFERENTIAL modalities):

(26) a. He <u>must</u> go.
     b. He <u>can</u> go.
     c. I <u>must</u> be dreaming.
     d. I <u>may</u> be dreaming.

<u>ambiguous</u> (with respect to the ±INFERENTIAL modalities):

(27) a. or c. He <u>must</u> get up early.
     b. or d. He <u>may</u> kiss her.

    Boyd and Thorne seem to suggest a description of the illocutionary potential of the <u>inferential</u> sentences in terms of 'necessary statement' (c) or 'possible statement' (d). (p. 69). However, our German examples in (22) suggest that in the case of the inferential modality there is either an obligation or a possibility <u>for someone to infer something</u>. This does not always imply that there is a necessary (or possible) <u>statement</u> (in Boyd and Thorne's terms, p. 60). Compare the following synonymous examples,

(28) a. Er <u>muß</u> zu Hause sein.
       "He must be home"

     b. Ich <u>vermute</u>, daß er zu Hause ist.
       "I suspect that..."

where we can indeed say that there is a necessary statement, i.e., a statement of my "belief" as a result of strong evidence. But <u>in</u> the following example, where <u>vermutet</u> is not a performative verb,[29] we

---

[29]There is a certain unclarity in Boyd and Thorne's article due to an excessive concentration on the <u>performative</u> analysis of modals. We will return to the relationship between modality and the speech act below (5.1.).

---

can not talk of a necessary statement:

(29) Er <u>vermutet</u>, daß seine Frau zu Hause ist.
      "He suspects that his wife is at home."

In this case we have a 'neutral'[30] statement of the speaker's knowledge

---

[30]For an interesting discussion of the speaker's and hearer's attitude toward the truth value of somebody else's presumptions, beliefs, claims, regrets, etc., see Kiparsky (1967), pp. 183-184 (quoted by Boeder (1968), p. 35).

---

of <u>somebody's necessary inference</u> about his wife's being home. This is why we propose a derivation of inferential sentences from a higher <u>modal</u> predicate, an intermediate 'subjective' predicate, and

a lower sentence which is realized in the surface as an independent
or a dependent sentence. This allows us to account for any kind of
inferential modality.[31]

---

[31]We will discuss two alternatives for deriving inferential
modals below (3.2.3.).

The inferential non-inferential analysis is as valid for
German modality as for English modality. We remember that all
German 'modals' are ambiguous in this respect, except werden, which
cannot be used to convey the non-inferential meaning (as 'will' in
English):

(30) Er wird zu Hause sein.
"He will be home."

In other words, in any sentence in which it occurs, werden functions
to indicate that the illocutionary potential of the sentence is a
prediction. (See, however, note 24).

Within the framework of the two types of modality just outlined
there are two basic systems of modality, the "obligative" system and
the "permissive" system. This corresponds to what Leech (1970) called
the "inversion systems". We can represent them as follows (S=Sentence):

(31) a. [OBLIG] -- not S = not [PERM] -- S
      b. not [OBLIG] -- S = [PERM] -- not S

Examples:

(32) a. Require sb. not to do sthg. =
          Not allow sb. to do sthg.

      b. Not require sb. to do sthg. =
          Allow sb. not to do sthg.

Notice further the following synonymy relations between either
one of the systems with double negation and the other system without
negation:

(33) a. [OBLIG] -- S = not [PERM] -- not S
      b. not [OBLIG] -- not S = [PERM] -- S

Examples:

(34) a. Require sb. to do sthg.
          Not permit sb. not to do sthg.

      b. Not require sb. not to do sthg.
          Permit sb. to do sthg.

Each of the two systems of modality is further divided in two alternatives, VOLITIVE (A) and CAUSAL (B). The distinction here is in terms of the 'origin' of the obligation or possibility: it is either agentive (i.e., an animate cause, typically a human being) or causal (i.e., an inanimate cause, typically a (set of) fact(s), circumstance(s), etc.). The 'destination' of the obligation or possibility (i.e., the person (or thing) to whom (or which) the obligation or possibility "is destined") is animate when the 'origin' is agentive, and animate or inanimate when the 'origin' is causal.[32]

---

[32]In non-inferential causal sentences, the 'beneficiary' or 'destination,' even when inanimate, must be something capable of movement or implying some human activity (see below, 4.1.1.b.), as in:

    (i)   The train had to stop. (The storm forced it to stop.)
    (ii) The economy could flourish again. (The situation
            made it possible.)

This does not apply to inferential sentences, where the 'beneficiary' or 'destination' of the obligation or permission is the person making the inference. We therefore have to introduce a different 'role' in the underlying structure of the inferential modality type, namely the 'Experiencer' (E) of the inference (or the person making the prediction). We will discuss these roles in 3.2.3. below, when we introduce our model based on Case Grammar.

Finally, each modality can be expressed from the point of view of the 'origin' (X in the (α) alternatives) or from the point of view of the 'destination' (Y in the (β) alternatives of the non-inferential types, Z in the (β) alternatives of the inferential types). Thus, in (35a), the 'origin' of the volition is expressed, whereas in (35b) only the 'destination' is expressed:[33]

---

[33]The relation between the (α) and the (β) alternatives can be compared to the relation between active and passive sentences:

    (α) X wants Y to...   (β) Y has to...
(active) X carries Y (passive) Y is carried (by X)...
Notice that the natural place for a 'modal auxiliary' to occur in surface structure seems to be within the (β) alternatives.
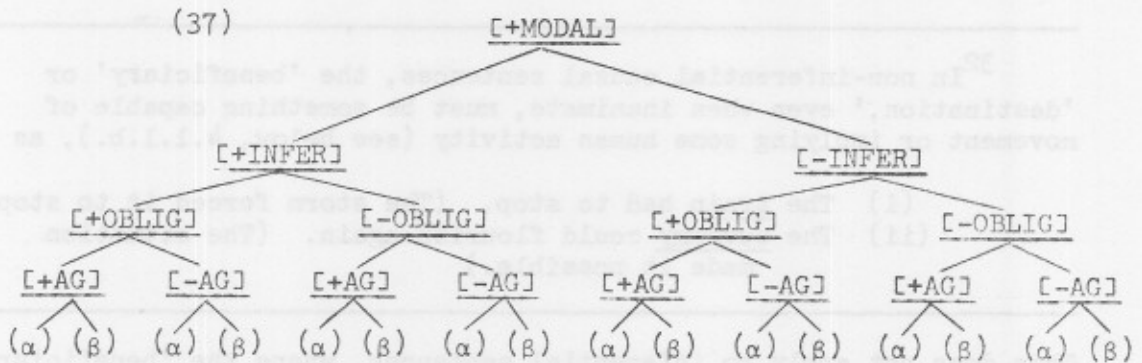
---

    (35) a. Er will, daß ich komme.
              "He wants me to come."

        b. Er soll nach Hause.
              "Sb. wants him to go home."

In (36), er can be said to express at the same time the 'origin' and the 'destination' of the volition. However, we will usually understand it as a volition from the point of view of the 'origin' only:

(36) Er <u>will</u> nach Hause gehen.
      "He wants to go home."

To summarize, we can represent the complete system of modality as a tree diagram with the following binary oppositions: [±inferential], [±obligative] (where [-obligative] stands for [permissive]), [±agentive] (where [-agentive] stands for [causal]), and (α) or (β) for the surface alternative between an 'origin-oriented' and a 'destination-oriented' modality.

(37)

```
                              [+MODAL]
                 ┌───────────────┴───────────────┐
             [+INFER]                          [-INFER]
         ┌──────┴──────┐                  ┌───────┴───────┐
     [+OBLIG]      [-OBLIG]           [+OBLIG]        [-OBLIG]
      ┌──┴──┐      ┌──┴──┐            ┌──┴──┐         ┌──┴──┐
   [+AG] [-AG]  [+AG] [-AG]       [+AG] [-AG]     [+AG] [-AG]
   ┌─┴─┐ ┌─┴─┐  ┌─┴─┐ ┌─┴─┐       ┌─┴─┐ ┌─┴─┐     ┌─┴─┐ ┌─┴─┐
  (α)(β)(α)(β) (α)(β)(α)(β)     (α)(β)(α)(β)    (α)(β)(α)(β)
```

3.2.2. Instead of having lexical items as verbs in the deep structure, we choose to have <u>sets of semantic features</u> that would be matched by the verbs, adjectives or adverbs in the lexicon which contain these features in their semantic descriptions.[34] In this way,

---

[34] The possibility of having feature constituents in the base has been pointed out by Boeder (1970) in relation to 'cases', and by Lerot (1969) and Vater (1970) in relation to 'modals'.

---

the concepts needed in the base for the generation of modal verbs can be expressed in a simpler and more economic way. Furthermore, we have said that modality is a semantic property of a higher predicate in deep structure. If we represent it by means of semantic features, we can more easily show the derivations leading, through the various transformations, to the actual realization of these features as verbs, adjectives or adverbs after lexical insertion. We will see in our next section that the choice of the surface verb, adjective or adverb is further determined by the case frame associated with these sets of features and the various ways these cases are realized (expressed or not) in the surface sentence.

Within the framework of our theory two basic semantic features are needed for modality: either [+OBLIGATIVE] (abbreviated as [+OBLIG]) or [+POSSIBILITY] (abbreviated as [+POSS]). Each modal predicate, beside being marked [+MODAL], will have one of these features in its feature complex.[35]

[35]We could use the feature [OBLIG] only, with a + or - value. Since this further abstraction is not necessary here, we will avoid it for the sake of clarity.

For the introduction of the 'subjective' predicate with inferential modality, we will use the feature [+INFER].

It is evident that other features will be needed in order to further differentiate between lexical items expressing different degrees of 'obligation' or 'possibility' or different types of 'inference'. (We will investigate this further in 5. below).

3.2.3. The _model_ we propose for the generation of modal sentences is essentially based on Fillmore's Case Grammar and his suggestions to "reincorporate" the 'modality' constituent within the 'proposition' (Fillmore (1970)).[36] We have already indicated that

---

[36]In the original version of Case Grammar (Fillmore (1968)), the 'modality' constituent (which was supposed to include "such modalities on the sentence-as-a-whole as negation, tense, mood, and aspect") was separated in the deep structure from the 'proposition'. It was shown by Fillmore (1970) that such a model would not allow to distinguish between the inferential and non-inferential meanings of modals.

---

by incorporating modality (in a narrower sense, as used in this article) as a higher predicate in the deep structure, it is possible to account for all the realizations of modality in the surface structure.

The deep structure of all modal sentences will then be of the following type:

(38)
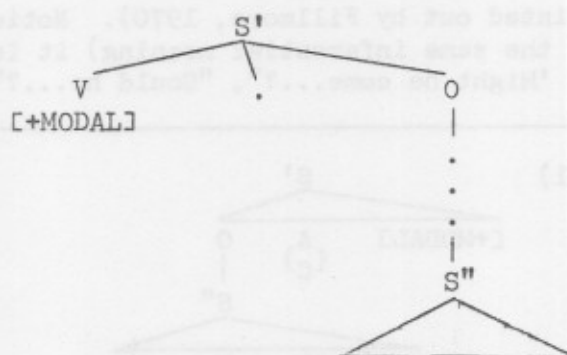
where S' is the higher sentence with a modal predicate, and O is the 'object' case dominating the complement S".[37]

---

[37]All case labels in Fillmore's new proposals (1970) are used
as grammatical categories dominating NP's. The Object case can
also dominate a sentence. We will abbreviate and simply indicate
the case label; if O dominates a sentence, we will label it OS.

We will further introduce either one or the other of the following
cases in the higher S: A for the 'agentive origin' of the modality,
C for the 'causal origin' of the modality, as shown in (39):

(39)

```
            S'
       /    |    \
      V     {A}    O
   [+MODAL]  C     :
```
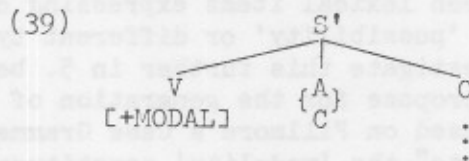
The case frame of modal verbs can now be represented as (40):

$$(40) \quad [\; \text{---} \; \{^A_C\} \; O_S \;] \quad \text{(where \{\} means "either...or")}$$
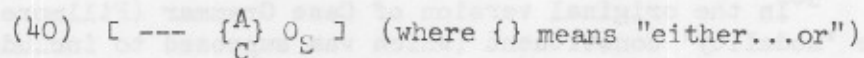
In order to account for the derivation of <u>inferential</u> modal
sentences, we suggested to have an intermediate "subjective"
sentence with a predicate having the feature [+INFER] (like 'infer',
'think', 'believe', 'admit').[38]

---

[38]The presence of the 'subjective' (or 'inferential') sentence
in the deep structure can be seen in the question corresponding to
(i) which is (ii), but not (iii).

    (i)   He <u>may</u> come tomorrow. (It is possible...)
   (ii) <u>Do you think</u> he will (or may) come tomorrow?
  (iii) *May he come tomorrow?

(This was pointed out by Fillmore, 1970). Notice that with <u>might</u>
or <u>could</u> (in the same inferential meaning) it is possible to ask
the question 'Might he come...?", "Could he...?".

---

(41)

```
                    S'
           /        |        \
        [+MODAL]    A         O
                   {C}        |
                              S"
                     /        |        \
                 [+INFER]     E         O
                                        |
                                        S"'
                                    /   |   \
```
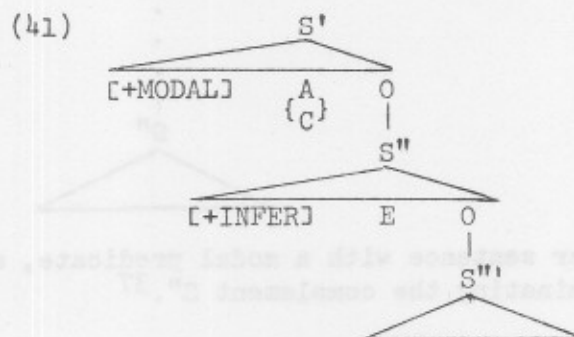
where E is a new case label for the 'Experiencer' of the inference.[39]

---

[39]The Experiencer case was suggested by Fillmore (1970) in (partial) replacement of the former Dative case. It designates the human being undergoing the psychological effect of certain verbs.

We can now fully represent the case frame of modal predicates as

$$(42) \quad [--- \{^A_C\} \quad O_S \; ([\; [+INFER] \; E \; O_S \;]) \;]$$

with an expansion of the O_S into an intermediate 'subjective' S in the case of inferential modality.

There seems to be the following alternative deep structure for inferential modality, where the modal predicate is no more in the higher S, and where the lowest S is more like the "subject S" of an "intransitive modal" (as in (8c)):

(43)
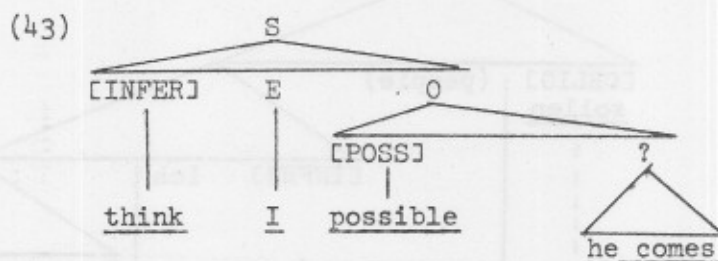
I think [it is possible [he come]].
$\implies$ It is possible that he will come.
$\implies$ He may come.

At first view such a derivation looks preferable to the one we suggested above (41), yielding

(44) Circumstances allow [that I think [that he will come]].
$\implies$ I think that it is possible that he will come.
$\implies$ I think that he may come.
$\implies$ He may come.

However, it is impossible to account for the German inferential modal wollen ('claim', as in (22c)) with a deep structure like (43); e.g.

(45) Er will das getan haben.
"He claims..."

If we want to derive this inferential wollen from the same deep structure as the other inferential modals, only the deep structure in (43) can be used, with er (he) as the source of the volition and the inferential predicate ([infer]) as part of the

object sentence of the higher modal S. We can illustrate the
introduction of <u>wollen</u> and <u>sollen</u> as follows (∅ means 'deleted'):

(46)
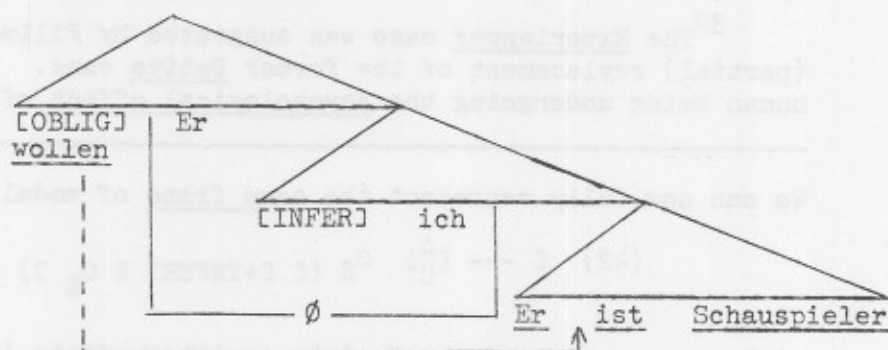
⟹ Er <u>will</u> Schauspieler sein.
"He claims to be..."
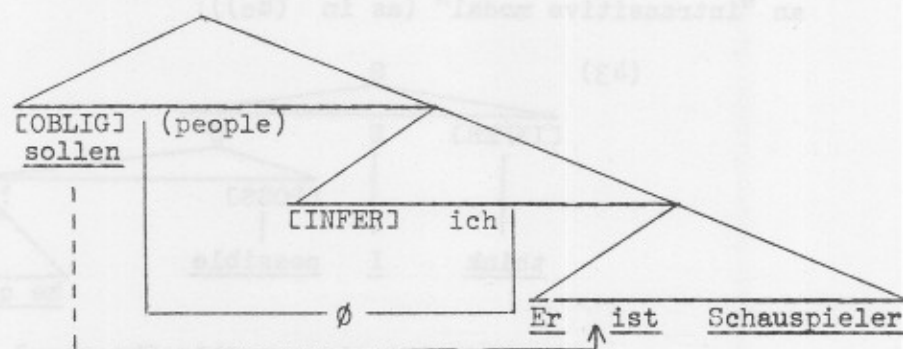
⟹ Er <u>soll</u> Schauspieler sein.
"He is said to be..."

(see below, 4.2.2.)

The following paraphrases of <u>wollen</u> and <u>sollen</u> also support our
choice:

(47) <u>wollen</u>   Er <u>will</u> Schauspieler sein.
              "He claims to be an actor."

              Er <u>will glauben machen</u>, daß er Schauspieler ist.
              Er <u>will</u>, <u>daß man glaubt</u>, daß er...
              "He wants people to believe that..."

<u>sollen</u>   Er <u>soll</u> sehr klug sein.
              "He is said to be very smart."

              Man <u>will glauben machen</u>, daß er sehr klug ist.
              Man <u>will</u>, <u>daß man glaubt</u>, daß... [40]
              "They want one to believe that..."

---

[40]Notice that 'say' can have the "strong" meaning 'want sb.
to believe', 'claim', as in:

(i) He <u>says</u> that he is sick.
This is related to its use in 'said to' (for German <u>sollen</u>).

Boyd and Thorne, when defining the illocutionary potential of inferential modals as "necessary statement" or "possible statement," seem to suggest an interpretation similar to ours (see our discussion above). We might also point out the similarity between the deep structure of interrogative sentences (as suggested by Ross and others) and the deep structure we propose for inferential modality:

$$(48) \qquad S' \qquad\qquad S'' \qquad\qquad S'''$$

      Circumstances "<u>force</u>" [one to <u>think</u> [that he is sick]]
      I <u>request</u>   [you <u>tell</u> me [that he is sick]]

where S' and S'' are not realized in the surface, and "<u>force</u>" + <u>think</u>, i.e., [+OBLIG] and [+INFER], are responsible for <u>must</u>:

$$(49) \implies \text{He \underline{must} be sick.}$$

and <u>request</u> + <u>tell</u>, [+OBLIG] and [+'TELL'], are responsible for Q(uestion):

$$(50) \implies \text{Is he sick?}$$

However, this will remain an open question until stronger arguments can be given in support of either (41) or (43).

To summarize: in our model we have tried to provide general representations for modal sentences using a Case Grammar framework. We essentially need the following cases: <u>Agent</u>, <u>Cause</u>, <u>Experiencer</u> and <u>Object</u> (<u>Sentence</u>). We further introduced the following features to account for the basic meaning of modality: [+MODAL] (which we use for the sake of clarity; we will not further investigate the relevance of this feature) and [+OBLIG] or [+POSS]. Finally, each modal predicate is associated with a <u>case frame feature</u> which is of the type $+[\ ---\ \genfrac{\{}{\}}{0pt}{}{A}{C}\ O_S\ ]$ or $+[\ ---\ \genfrac{\{}{\}}{0pt}{}{A}{C}\ O_{[[INFER]\ EO_S]}]$. It is not clear to us whether the difference between inferential and non-inferential modality should be introduced by means of a feature [±INFER] of the modal predicates, or by means of a different case frame feature (as above), or by means of both.

The most important question at this stage is what the <u>lexical description</u> of modal predicates should be. It is clear that we want to avoid any duplication in the lexicon of modal verbs which we claimed to be synonymous, each of them being associated with a different case frame. We have therefore proposed to consider <u>wollen</u> and <u>sollen</u> (and similarly <u>erlauben</u> and <u>dürfen</u>) as a single underlying verb represented with the features [+MODAL, +OBLIG] (and [+MODAL , +POSS]). Thus, all our modal verbs have a set of features of the type $\begin{bmatrix} +\text{MODAL} \\ \pm\text{OBLIG} \\ \pm\text{INFER} \end{bmatrix}$

(assuming that we need [±INFER] as a feature of modal verbs) and one
of the above case frame features. We can now tentatively describe
the generation of modal verbs as follows: in the deep structure, one
of the following modal predicates appears in the structural context
described by the corresponding case frame.

$$(51) \quad (1) \qquad (2) \qquad (3) \qquad (4)$$

$$\begin{bmatrix} +\text{MODAL} \\ +\text{OBLIG} \\ +\text{INFER} \end{bmatrix} \quad \begin{bmatrix} +\text{MODAL} \\ -\text{OBLIG} \\ +\text{INFER} \end{bmatrix} \quad \begin{bmatrix} +\text{MODAL} \\ +\text{OBLIG} \\ -\text{INFER} \end{bmatrix} \quad \begin{bmatrix} +\text{MODAL} \\ -\text{OBLIG} \\ -\text{INFER} \end{bmatrix}$$

Let us illustrate with (51(4)): the lexical item 'allow' appearing
in the lexicon with the features [+MODAL], [-OBLIG], [-INFER], $+[---\{^A_C\}O_S]$
can be inserted, yielding the derivation "A allows that O". We can
also choose 'may' which has the same features in the lexicon as
'allow', except that it can also be [+INFER]; but may must be specified
as obligatorily undergoing a rule which makes the A" (Agent of the
embedded S) the subject of the modal in the surface, yielding (52).

(52) A" <u>may</u> V(erb)...   (where A¦, the Agent of the
underlying modal, is normally deleted)[41]

---

[41]Fillmore (1970) proposed a similar solution to account for
the derivation of semantically related verbs like (i).

(i) 'resemble' and 'remind'
     'enjoy'   and 'please'

Compare (ii) with (iii).

(ii) X resembles Y,   Y reminds one of X
      X enjoys Y,   Y amuses X

(iii) X allows that Y, Y may...

It is not our purpose to propose rules for the derivation of
modals. Many of those suggested by Fillmore (1970) for "psychological
verbs" will probably also be valid for the generation of modal
predicates. This, however, needs further investigation.

4. Derivation of Modality in German

The following diagram illustrates the possible combinations of
<u>features</u> and their <u>case frames</u> with the main <u>lexical items</u> expressing
modality in German (the 'modals' (I) and their paraphrases (II)):[42]

---

[42]The arrows → or ← indicate synonymy relations. E.g., ←SAGEN
is one of the possible surface realizations of inferential modality
as a paraphrase of <u>wollen</u>, <u>sollen</u>, or <u>müssen</u> used with the same
inferential meaning.

---

(53) $[--- \{^A_C\} \, O_S \, ([[INFER] \, E \, O_S \,])]$

[+MODAL]

[+OBLIG]   [+POSS]

(-INFER)   [+INFER]   (-INFER)

$[--- \{^A_C\} \, O_S]$ $[--- \{^A_C\} \, O_S \, [[INFER] \, E \, O_S \,]]$ $[--- \{^A_C\} \, O_S]$

either   or   only   either   or

I

WOLLEN   WERDEN→   KÖNNEN
SOLLEN   MÖGEN
MÜSSEN   DÜRFEN

←BEHAUPTEN   MÖGLICH
←SAGEN   ERLAUBEN
ANNEHMEN→   WAGEN

II   VERLANGEN
     WÜNSCHEN

(ambiguous)   (ambiguous)
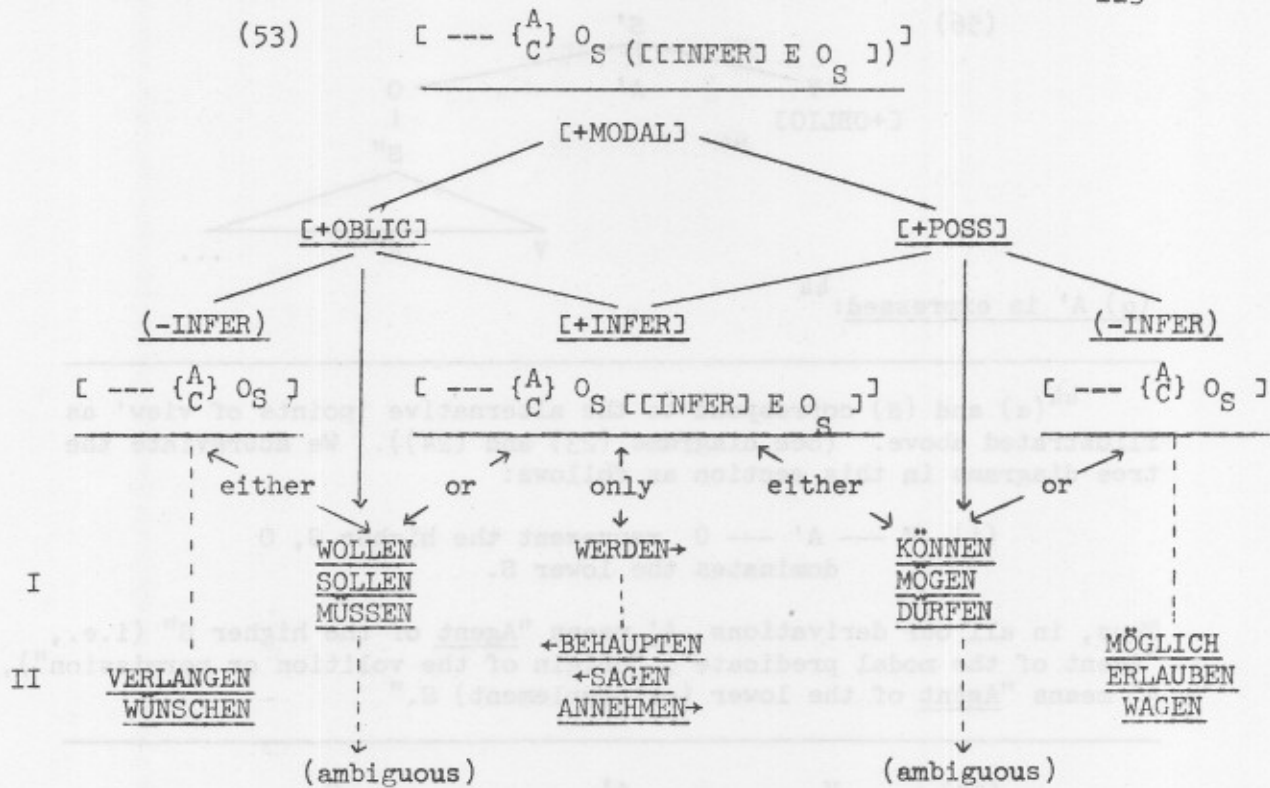
   We will now examine how, from the underlying meanings [+OBLIG]
and [+POSS], we can progressively generate the German surface sentences
encountered in our preceding sections. In the first part we will
show the derivations of non-inferential modality; in the second part
we will treat inferential modality.[43]

---

[43]We neither intend to exhaust the class of possible modal
sentence types in German in our investigation, nor do we try to
write detailed structural descriptions and complete generations.

   4.1. Non-Inferential Modality. General Case Frame:

   (54) $[--- \{^A_C\} \, O_S]$.

   4.1.1.   [+OBLIGATION] modality. Main lexical items:

      (55) WOLLEN, SOLLEN, MÜSSEN
            VERLANGEN, WÜNSCHEN

   4.1.1.a. Agentive obligation.   Typical Deep Structure:

(56)

```
                              S'
            ┌─────────────────┼─────────────────┐
            V                 A'                 O
        [+OBLIG]                                 |
                                                 S"
                                          ┌──────┴──────┐
                                          V      A"      ...
```
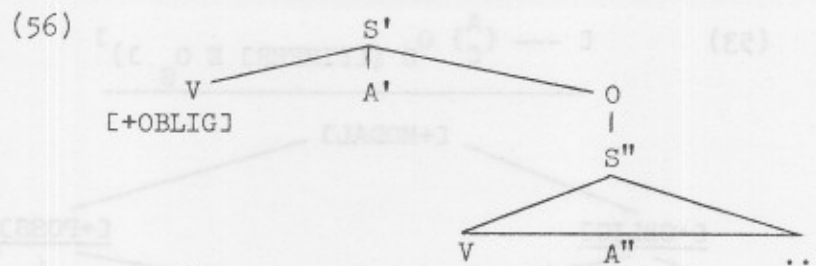
(α) A' is expressed:[44]

---

[44](α) and (β) correspond to the alternative 'points of view' as illustrated above. (See diagrams (23) and (24)). We abbreviate the tree diagrams in this section as follows:

> (i) V --- A' --- O represent the higher S, O
>   dominates the lower S.

Thus, in all our derivations, A' means "<u>Agent</u> of the higher S" (i.e., "<u>Agent</u> of the modal predicate", "origin of the volition or permission"), A" means "<u>Agent</u> of the lower (or complement) S."

---

(57)
```
        V            A'                        O
    [+OBLIG]         |              ┌───────────┴───────────┐
        |          ⎧Ich⎫           V          A"           D[45]
      WOLLEN       ⎨Jemand⎬    vergessen     Anna          Hans
                   ⎩Peter⎭
```

---
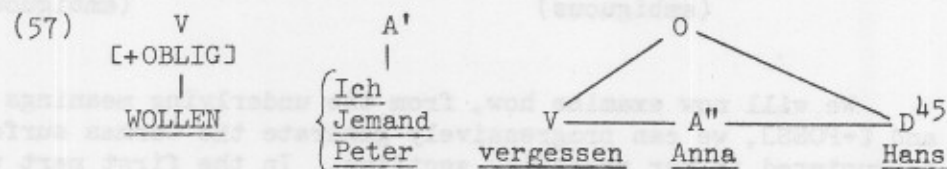
[45]We use D (for <u>Dative</u>) for the "person affected by the action..." B (for <u>Beneficiary</u>) for the "person benefiting from the action...". However, we do not want to make any claim that such cases have to be introduced in order to account for the 'deep roles' involved. D is probably not different from E (see above). But we will continue to use D in order to avoid confusion with the E of the inferential modality.

> (where <u>wünschen</u> (wish) and <u>verlangen</u> (require) can
> be paraphrases of <u>wollen</u>)

(58) ⎧Ich⎫
     ⎨Jemand⎬   <u>will</u>, <u>daβ</u> Anna Hans vergiβt.
     ⎩Peter⎭
            "I, sb., Peter, want(s) Anna to forget Hans."

<u>Variants</u>:
1. If A' is coreferential with A", then A" is deleted:[46]

∅ is used in the diagrams, meaning 'deleted'.

(59)   V   A'   O
       [+OBLIG]   ╱   ╲
       │   Peter   V ——— A" ——— D
       WOLLEN   vergessen   Peter   Hans
                                          ↓
                                          ∅
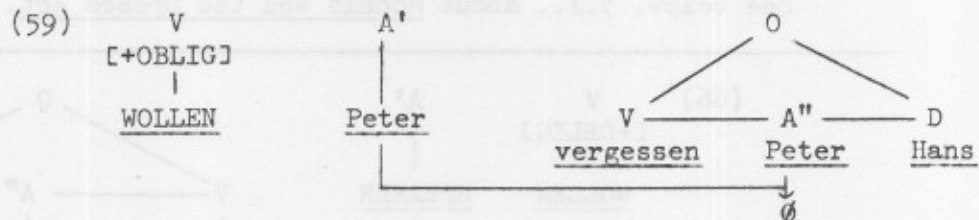
(60) ⟹ Peter will Hans vergessen.
     "Peter wants to forget Hans."

2. <u>The embedded S may be of the type:</u>

(60)   O
                ╱   │   ╲
              V   B   O
            haben   Peter   Buch
         (have, possess)
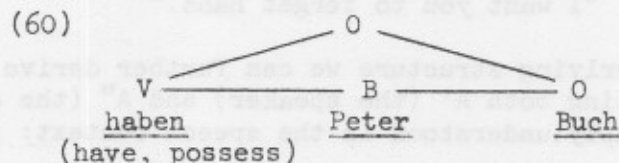
If A' is coreferential with B, then (normally) <u>haben</u> and B are deleted:

(61) ⟹ Peter <u>will</u> ein Buch (<u>haben</u>).
     "Peter wants (to have) a book."

or:

(62) Peter <u>will</u> ein Buch <u>für sich.</u> (for himself)

(where <u>wünscht</u> and <u>möchte</u> can be paraphrases of <u>will</u>).

3. <u>Two passives can be derived from (58):</u>

(a) <u>passive of the higher S:</u>

If A' is <u>Peter</u>:

(63) ⟹ Von Peter <u>wird gewollt</u>, daß Anna Hans vergißt.
     "It is wanted by Peter..."

If A' is <u>Jemand</u> (indef. Agent):

(64) ⟹ Es <u>wird gewollt</u>, daß...
     "It is wanted..."

(b) <u>passive of the embedded S:</u>

(65) ⟹ Peter <u>will</u>, daß Hans (von Anna) <u>vergessen wird</u>.
     "Peter wants Hans to be forgotten (by Anna)."

Variants:
1. <u>This construction would yield the passive</u>

    (71) $\Longrightarrow$ Hans <u>soll</u> (von Anna) vergessen werden.
          "Hans must be forgotten (by Ann)."[49]

---

[49]If <u>von Anna</u> is deleted in the surface, A" may still be understood (from the context) as 'Ann' in the deep structure; otherwise, it is indefinite.

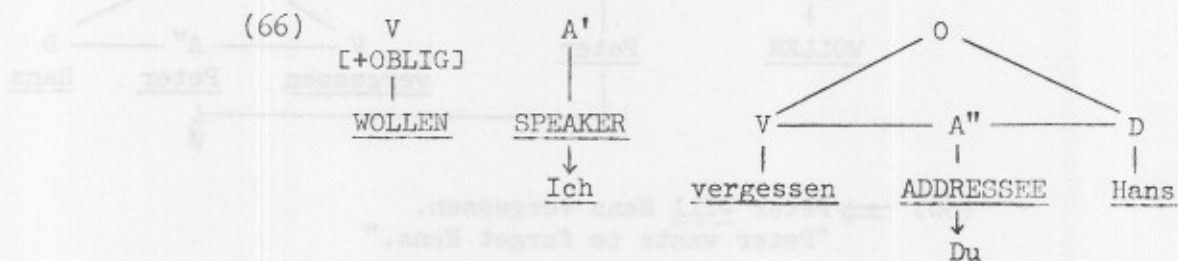Sentence (71) is synonymous with (63) and (65). We now see that the so-called "different passive" with <u>wollen</u> is simply the consequence of which cases are expressed in the surface structure and that it is not a valid argument for claiming that <u>wollen</u> is different in its deep structure from all other modals.

    2. An interesting variant of sentences (α) can be realized with the phrases:

      (72) meinetwegen,   seinetwegen
             meinethalben,   seinethalben
             um meinetwillen,   um seinetwillen
             für mich   für ihn   (etc.)
             "as far as I care"   "as far as he cares"

[Cp. Dutch: van mij ("of me") van hem ("of him")], and the modal <u>sollen</u> or <u>müssen</u>. The phrases in (72) are adverbial pro-forms standing for the Agent of the higher predicate. The degree of 'obligation' they convey is, however, much lower than with <u>wollen</u>.

    (73) [+OBLIG]   A'   V————A"————D
            | | | | |
          SOLLEN   <u>Ich</u>   <u>vergessen</u> <u>Anna</u>   <u>Hans</u>
                   Er   ↓
                   ↓   (becomes the surface subject)
          (becomes a surface adverb or dative)

    (74) $\Longrightarrow$ <u>Meinetwegen</u> ⎱ soll Anna Hans vergessen.
             <u>Seinetwegen</u> ⎰

It is interesting to notice that the phrases in (72) are much more natural in sentences with a negated 'obligation' and even sentences with a 'possibility' modal:

    (75) Meinetwillen <u>soll</u> er <u>nicht</u>.
          "As far as I care, he doesn't have to."

    (76) Meinetwegen <u>darf</u> er bleiben.
          "As far as..., he may stay."

In such sentences, the 'weak volition' contained in meinetwegen seems to be a reply to a request for information about the speaker's (or another person's) desire or will.

4.1.1.b. Causal obligation ("necessity"). Typical Deep Structure:

(77)

```
                            S'
              ┌─────────────┼─────────────┐
              V             C             O
          [+OBLIG]                        S"
                                      ┌───┴───┐
                                      V   A   ...
```
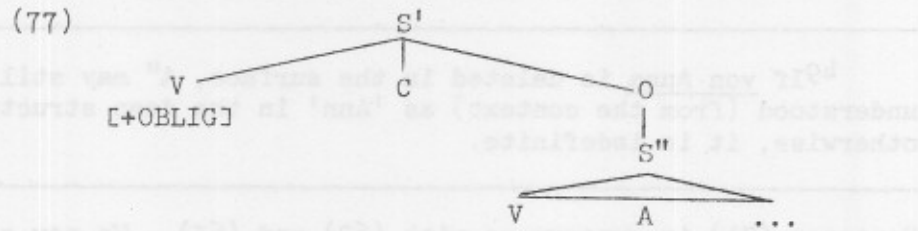
Since the derivation of sentences with a 'causal obligation' is very similar to that of sentences with an 'agentive obligation', we will only consider a few types here.

(α) C is expressed:

```
         V              C              O
(78) [+OBLIG]           |            ┌─┴─┐
         |                            ...
      zwingen        (UMSTÄNDE)
      (force)       (circumstances)
```
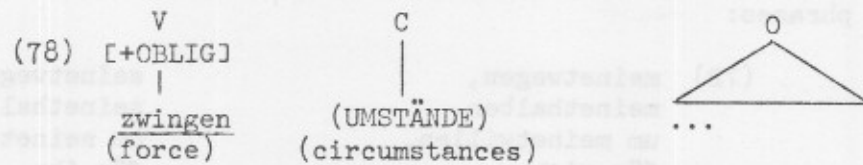
(79) ⟹ Das Feuer zwang Karl, das Haus zu verlassen.
          "The fire forced Karl to abandon the house."

(80) ⟹ Das Gewitter brachte den Zug zum Halten.
          "The storm made the train stop."

There are many problems in connection with the derivation of these sentences. We will not try to solve them here. Notice that the 'subject' of the complement S can be 'inanimate'. However, we have pointed out that it has to designate something capable of an activity or movement.

(β) C is indefinite and deleted:

```
         V              C              O
(81) [+OBLIG]           |           ┌──┴──┐
         |              |           V     A"
      MÜSSEN            Ø         halten   Zug
```
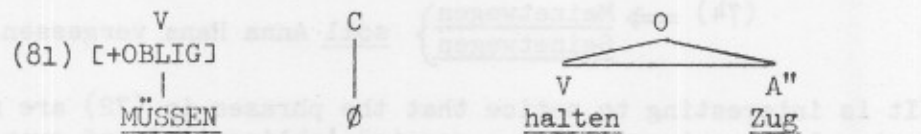
where A" becomes the surface subject of the modal verb, yielding:

(82) ⟹ Der Zug mußte halten.
          "The train had to stop."

4.1.2. [+POSSIBILITY] modality: Main lexical items:

(83) DÜRFEN, KÖNNEN, MÖGEN, ERLAUBEN, WAGEN

4.1.2.a. <u>Agentive possibility</u>. Typical Deep Structure (same as 4.1.1.a, with the feature [+POSS]).

(84) (α) A' is expressed:

```
        V              A'                         O
      [+POSS]          |                    ⟋      |     ⟍
        |            Jemand              V       A"       O
      erlauben        Ich                |        |        |
                                       nehmen   Peter     Geld
```
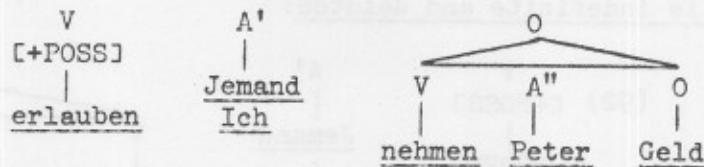
(where A" can become surface 'dative')

(85) ⟹ { Jemand <u>erlaubt</u> / Ich <u>erlaube</u> }   Peter das Geld zu nehmen.

"Sb., or I, allow Peter to take the money."

<u>Variants</u>:
1. Notice the following <u>passive constructions</u> with <u>erlauben</u> (where A' is indefinite):

(86) ⟹ Es <u>wird erlaubt</u>, daß Peter das Geld nimmt.

(87) Es <u>wird</u> Peter <u>erlaubt</u>, das Geld zu nehmen.

(88) Peter <u>wird erlaubt</u>, das Geld zu nehmen.
"Peter is allowed to take the money."

The agent of the embedded S (<u>Peter</u>) can either be surface subject in the embedded S or surface dative in the main S. The latter is impossible with <u>wollen</u>.

2. We tentatively propose to derive <u>wagen</u> (dare) from the same deep structure, where A' is coreferential with A", and as a consequence, A" becomes the surface subject:

(89)
```
        V              A'                         O
      [+POSS]          |                    ⟋      |     ⟍
        |            Karl                V       A"       O
       wagen          |                nehmen   Karl     Geld
                       └──────────────────────────┘
                      ∅
```
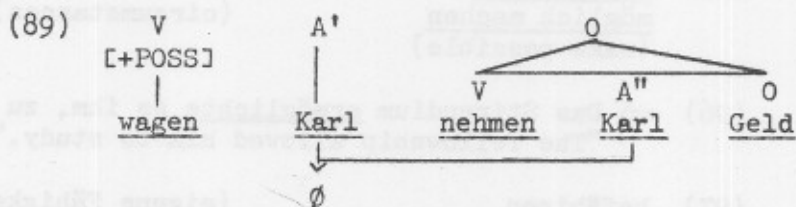
(90) ⟹ Karl <u>wagt</u> es, das Geld zu nehmen.
"Karl dares to take the money."

This analysis (with [+POSS] as a feature of 'dare') is suggested (1) by the etymological relation of 'dare' and Dutch <u>durven</u> with German <u>dürfen</u> (be allowed) (see notes 11 and 25), and (2) by the fact that it allows us to derive 'dare' and 'can' (be able) in a similar way: 'dare' = "<u>subjective</u>" ability as a result of "allowing oneself"; 'can' = be able as a result of one's "<u>objective</u>" ability. (see below, 4.1.2.b).

Compare the Dutch example:

(91) Ik <u>durf</u> maar ik <u>kan</u> niet.
"I dare, but I cannot."

<u>(β) A' is indefinite and deleted:</u>

(92)
```
      V              A'                      O
   [+POSS]           |             _____|_____
      |            Jemand         V          A"           O
   DÜRFEN            ↓            |           |            |
  (MÖGEN)            ∅          nehmen      Peter        Geld
  (KÖNNEN)
```
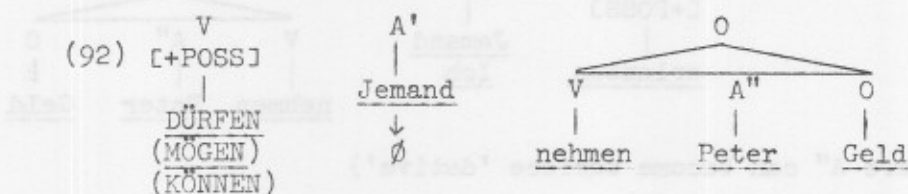
(where A" becomes the surface subject).

(93) ⟹ Peter { darf / (mag) / (kann) } das Geld nehmen.

"Peter may, i.e. is authorized to, take the money."

4.1.2.b. <u>Causal possibility</u> ("possibility" and "ability"). <u>Typical</u>
<u>Deep Structure</u>: (same as 4.1.1.b., with the feature [+POSS]).

<u>(α) C is expressed:</u>

(94)
```
      V          C                  O
   [+POSS]       |          _____|_____
      |          |                  ---
```
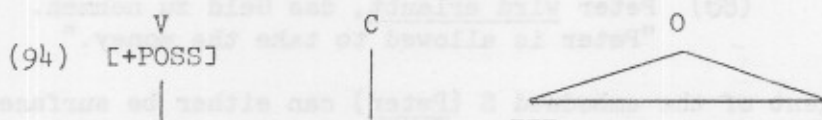
We distinguish between 'possibility' as a result of an 'exterior' cause
(95) and 'ability' as a result of an 'interior' cause (one's own ability
(97):

```
        V                            C
(95)  ermöglichen              (Umstände, ...)
      möglich machen           (circumstances)
      (make possible)
```

(96) ⟹ Das Stipendium <u>ermöglichte</u> es ihm, zu studieren.
"The fellowship allowed him to study."

```
(97)  befähigen               (eigene Fähigkeiten)
                              (one's own ability)
```

(98) ⟹ Seine Kenntnisse <u>befähigten</u> ihn, die Theorie zu
verstehen.
"His knowledge enabled him to understand the
theory."

<u>(β) C is indefinite and deleted:</u> (A" becomes the surface subject)

$$(99) \quad \begin{array}{ccc} V & C & O \\ [+\text{POSS}] & & \\ | & | & \overset{\overbrace{\quad\quad}}{V \quad A'' \quad O} \\ \underline{\text{KÖNNEN}} & (100) & \underline{\text{nehmen}} \quad \text{Peter} \quad \text{Geld} \\ \underline{\text{MÖGEN}} & (101) & \underline{\text{lesen}} \quad \text{Peter} \quad \text{Buch} \end{array}$$
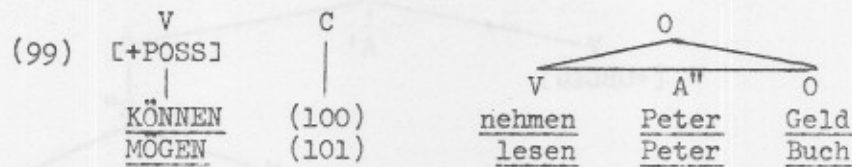
(100) $\implies$ Peter $\left\{ \begin{array}{c} \underline{\text{kann}} \\ \underline{\text{mag}} \end{array} \right.$ das Geld nehmen.

"Peter can take the money, bec. of exterior cause."

(101) $\implies$ Peter <u>kann</u> das Buch lesen.
"Peter can, is able to, read the book."

<u>Variant:</u>
V
1. <u>möglich</u> (where A" becomes surface 'dative')[50]

---

[50]Compare with sentence (127) below, where A" remains the subject of the embedded S and <u>möglich</u> has an inferential meaning.

---

(102) $\implies$ Es ist Peter <u>möglich</u>, das Geld zu nehmen.
"It is possible to Peter..."

The examples (100), (101) and (102) can express either 'possibility' (100) or 'ability' (101). It is therefore not clear how relevant this distinction really is. Boyd and Thorne (1969) say that 'can', when paraphrasable by 'be able to', is a "non-modal" (p. 71). This very much depends on what we consider as 'modality' from a semantic point of view. We will return to this problem below. Notice, however, that if we want to exclude it, we should similarly exclude all other 'causal' modals. This would result in a failure to account for the synonymy relations pointed out above (3.1.4.). We see no reason thus far for doing this.

4.2. **Inferential modality.** General Case Frame:

$$(103) \quad [\; \text{---} \; \begin{Bmatrix} A \\ C \end{Bmatrix} \; O_{[[+\text{INFER}] \; E \; O_S]}]$$

4.2.1. **[+OBLIGATION] modality.** Main lexical items:

(104) WOLLEN, SOLLEN, MÜSSEN
BEHAUPTEN, SAGEN

4.2.1.a. <u>Agentive obligation.</u> Typical Deep Structure:

(105)

```
                          S'
             ┌────────────┼────────────┐
             V            A'            O
        [+OBLIG]                        │
                                        S"
                               ┌────────┴────────┐
                               V        E         O
                          [+INFER]                │
                                                 S"'
                                          ┌───────┼───────┐
                                          V       A"      ...
```

(α) A' is expressed:

(106)   V ──────── A' ── V ──────── E
      [+OBLIG]   │ [+INFER] (INDEF)
         │   │   │   │
      WOLLEN   Peter glauben   man   kommen   (seine) Eltern

```
                    O
           ┌────────┴────────┐
           V                 A"
```
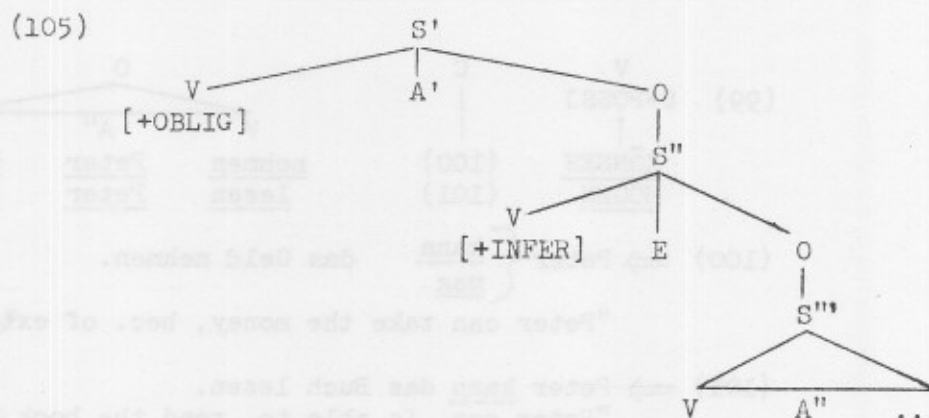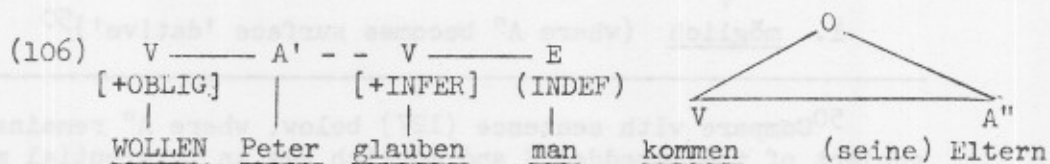
(107a) ⟹ Peter will, daß man glaubt, daß seine Eltern kommen.

or   (107b)   Peter will glauben machen, daß ...
                 "Peter wants people to believe, lets people believe,
                              that his parents will come."

Variants:
The 'subjective' or 'inferential' sentence [[+INFER] E (indef)]
is normally not expressed in the surface structure.
1. If A' is expressed and is (or is not) coreferential with A",
the following lexical insertions are possible:

(108)   behaupten
         ─────────   for [+OBLIG] [[+INFER] E (indef.)],
         sagen

yielding

(109) ⟹ Peter   behauptet, daß   seine Eltern kommen
                 ─────────────   er...
                 sagt, daß
                 "Peter maintains that his parents, he, ..."

2. If A' is expressed and is coreferential with A", the following
lexical insertion applies:

(110) wollen   for   [+OBLIG] [[+INFER] E (indef.)],

yielding

(111) ⟹ Peter will das getan haben.
        "Peter claims that he has done that."

It is important to notice that A' of the inferential <u>wollen</u> can not be the speaker. But E may include the speaker. English 'claim' can have the speaker as A' and does not require coreferentiality between A' and A" (Cp. 'I make the claim that...'). Notice further that both <u>wollen</u> and <u>claim</u> are generally understood as "assert <u>in the face of possible contradiction</u>." We will see below that this can be accounted for in the framework of inferential modality ([OBLIG] A' --- [INFER] E) and its relation to the speech context.

(β) A' is indefinite and deleted:

$$
\begin{array}{c}
\text{(112)} \quad
\underset{\substack{| \\ \text{SOLLEN}}}{\underset{\text{[+OBLIG]}}{V}} \underset{\substack{\downarrow \\ \emptyset}}{\underset{\text{(INDEF)}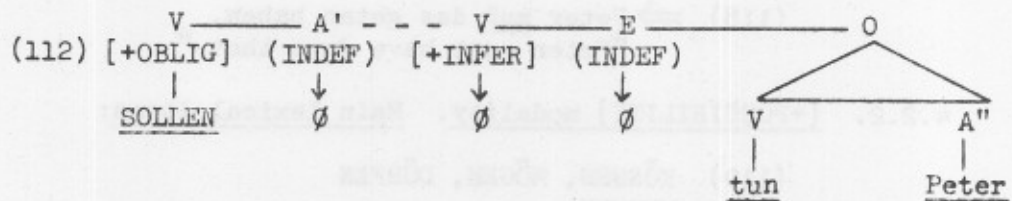}{A'}} - - - \underset{\substack{\downarrow \\ \emptyset}}{\underset{\text{[+INFER]}}{V}} \underset{\substack{\downarrow \\ \emptyset}}{\underset{\text{(INDEF)}}{E}} \underset{\substack{\underset{\text{tun}}{V} \quad \underset{\text{Peter}}{A''}}}{O}
\end{array}
$$

(where A" becomes the surface subject)

    (113) ⟹ Peter <u>soll</u> das getan haben.
       "People say, they say, it is said, that Peter has
       done it."

Notice the similarity with the passive construction in the possible English translation of (113):

    (114) Peter <u>is said to</u> have done that.

Notice further that A' is indef. and can not be the speaker, whereas E could be interpreted as the speaker. (See the <u>causal</u> inferential modalities, where E in the (β)-alternatives is the speaker. (4.2.1.b))

4.2.1.b. <u>Causal obligation</u>. Typical Deep Structure:

$$
\begin{array}{c}
\text{(115)} \qquad
\underset{\text{[+OBLIG]}}{V} \quad C \quad O \\
\qquad\qquad\qquad S'' \\
\qquad\qquad \underset{\text{[+INFER]}}{V} \quad E \quad O \\
\qquad\qquad\qquad\qquad S''' \\
\qquad\qquad\qquad V \quad A'' \ \ldots
\end{array}
$$
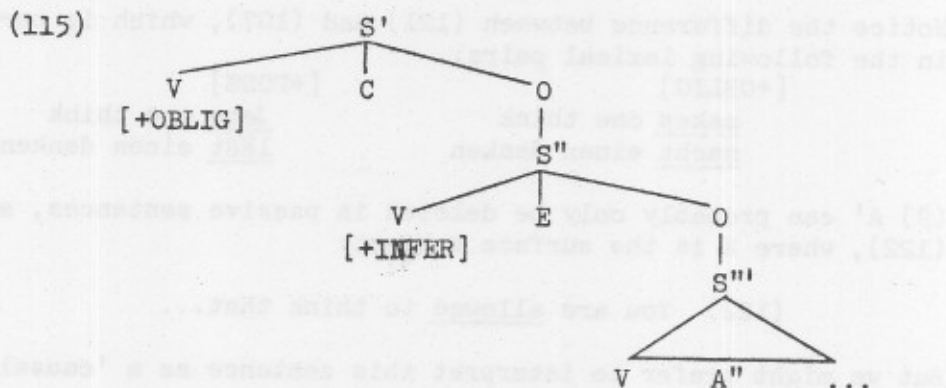
(α) <u>C is expressed</u>: This would yield sentences of the following type:

    (116a) The situation <u>forces</u> me to think that he is wrong.
    (116b) His accent <u>makes</u> me think that he is Russian.

(We will not further investigate such sentences).

(ß) C is indefinite and deleted, Γ must be the speaker:

(117)   V———————C ————— V——————E——————————O
      [+OBLIG] (UMSTÄNDE) [+INFER] (SPEAKER)   ╱╲
         ↓   ↓   ↓   ↓   V   A"
       MUSSEN   ∅   ∅   ∅ | |
                                                    tun Peter
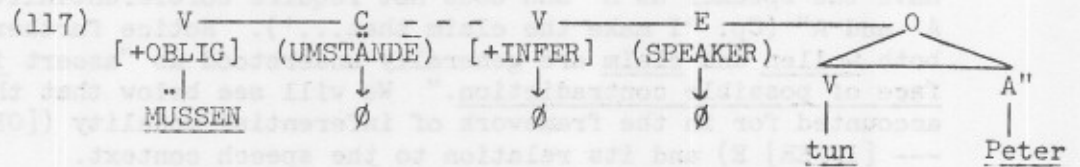
(where A" becomes the surface subject).

    (118) ⟹ Peter muß das getan haben.
           "Peter must have done that."

4.2.2. [+POSSIBILITY] modality. Main lexical items:

    (119) KÖNNEN, MÖGEN, DÜRFEN
           WERDEN
           ANNEHMEN

4.2.2.a. Agentive possibility. Typical Deep Structure (same as
4.2.1.a., with the feature [+POSS]).

(α) A' is expressed:

(120)   V————A'—————V————————E———————————O
        [+POSS] | [+INFER] (SPEAKER)   ╱╲
           | | | | V   A"
           | | | | | |
        lassen Karl   denken   ich   kommen Eltern
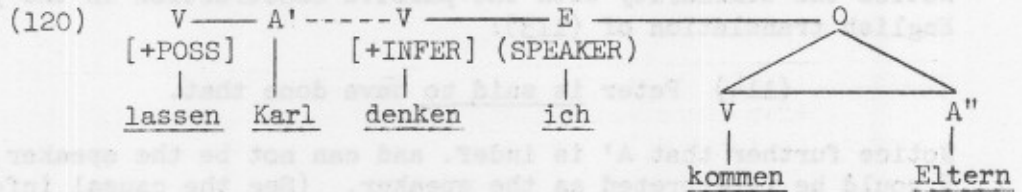
    (121) ⟹Karl läßt mich denken, daß seine Eltern kommen.
           "Karl lets me think, that..."

Notice the difference between (121) and (107), which is perceivable
in the following lexical pairs:

[+OBLIG]	[+POSS]
makes one think	lets one think
macht einen denken	läßt einen denken

(ß) A' can probably only be deleted in passive sentences, such as
(122), where E is the surface subject:

    (122) You are allowed to think that...

But we might prefer to interpret this sentence as a 'causal possibility'
rather than an 'agentive possibility'.
    This type of modality ((2) II A in diagram (24)), is the only
one which does not seem to be naturally expressed with a modal verb.

4.2.2.b. <u>Causal possibility</u>. <u>Typical Deep Structure</u>: (same as 4.2.1.b., with the feature [+POSS])

(α) <u>C is expressed</u>: This would yield sentences of the following type (compare to (116)).

(123) The situation <u>allows</u> me to think that...

(β) <u>C is indefinite and deleted, E must be the speaker</u>:

(124)
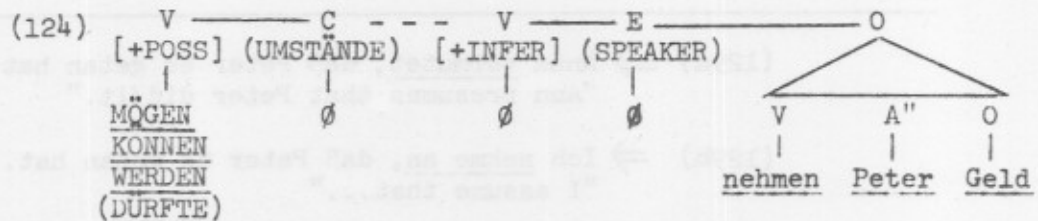
V ——————— C - - - V —————— E ——————————— O
[+POSS] (UMSTÄNDE) [+INFER] (SPEAKER)   /\
  | | | | / \
MÖGEN   ∅   ∅   ∅   V   A"   O
KONNEN | | |
WERDEN   nehmen Peter Geld
(DÜRFTE)

(where A" becomes the surface subject).

(125)

⇒Peter {
  mag
  kann
  wird
  dürfte
} das Geld genommen haben.[51]

"Peter may, could, have taken the money, it is probable that Peter..."

---

[51]In some contexts, <u>werden</u> can be interpreted as [+OBLIG] rather than [+POSS]. It certainly expresses a stronger possibility than <u>können</u> and <u>mögen</u>. Compare to its use in the sentence (i)

(i) Du <u>wirst</u> morgen kommen!
    "You will come tomorrow!"

which can be interpreted as a command.

<u>Variants</u>:
1. [+POSS] → adverb:

(126) ⇒Peter hat wahrscheinlich das Geld genommen.
      "Peter has probably taken..."

2. [+POSS] → <u>möglich</u>, where A" remains the subject of the embedded S (compare with non-inferential <u>möglich</u> in (102)

(127) ⇒ Es ist <u>möglich</u>, daß Peter das Geld genommen hat.
      "It is possible, probable, that..."

3. [+POSS] → <u>können</u>, <u>mögen</u>, followed by <u>sein</u> (be):

(128) ⟹ Es <u>kann sein</u>, daß Peter das Geld genommen hat.
" It may be (the case) that..."

4. [+POSS]   C --- [+INFER] E can also be realized as
<u>annehmen</u>,[52] <u>vermuten</u>, <u>denken</u>, as in:

---

[52]'assume'(<u>vermuten</u>) is the result of a logically <u>possible</u>
inference; 'conclude' (<u>schliessen</u>) is the result of a logically
<u>necessary</u> inference.

(129a) ⟹ Anna <u>vermutet</u>, daß Peter es getan hat.
"Ann presumes that Peter did iit."

(129b) ⟹ Ich <u>nehme an</u>, daß Peter es getan hat.
"I assume that..."

Extra features may be needed to account for the meaning of these
verbs. Notice that (129a) and (129b) can only be synonymous with
sentences using modals (as in (125)) when the E is the speaker.

5. Final Considerations

In our analysis we were led to the conclusion that not only
do we have to include 'modal verbs' in a system of modality, but
also a variety of other predicates expressing a certain degree of
'obligation' or 'possibility'. It now appears to be necessary to
reconsider the definitions of modality which we shortly introduced
in section 3, and to investigate a little further the relationship
between <u>modality</u>, the "<u>attitude of the speaker</u>" and the <u>speech
context</u>.

5.1. The relations between modality and the <u>speech act</u> are
obvious. Modals can indeed function as performative verbs, thus
"indicating the illocutionary potential of the sentences in which
they occur" (Boyd and Thorne, p. 62) and relating to the context of
speech involving the speaker and the hearer. In the <u>non-inferential</u>
modal sentences, the speaker is then associated with the 'origin' of
the volition or permission, and the hearer with the 'destination'
of the volition or permission. Imperatives are thus a typical example
of performative modality of volition, and so are questions, which are
a special type of 'volition', namely requests for a reply.[53] In the

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[53]Leech (1970) points out that in the case of questions with
'must' and 'may', there is actually an "appeal to the authority of
the listener". (p. 229) Such questions can therefore be said to
consist of a double modality: the request for an answer (the
performative modality) and the "authority" of the addressee.

<u>inferential</u> modal sentences, the speaker may be the person who 'claims'

or 'allows one to think'; however, the relation of inferential modality to the speech act is more complex. Indeed, with the majority of modals expressing inference (i.e., müssen, mögen, können, dürfen, werden) it is the speaker who is naturally associated with the person who makes the inference, that is, the experiencer of the inference. Only with wollen (in the meaning of 'claim') and sollen (in the meaning of 'be said to') is the experiencer typically indefinite. This does not mean, however, that the "attitude" of the speaker is necessarily excluded. On the contrary, wollen (and similarly 'claim' in English) frequently imply a certain scepticism on the part of the speaker, in which case we can say that the speaker feels himself associated with the 'destination' of the claim.

But, clearly, modal verbs do not always function as performative verbs. Particularly in non-inferential modal sentences, the 'origin' of the 'obligation' or 'possibility' does not have to be the speaker. Even when the 'destination' is the addressee in a present context, the 'origin' can be any person beside the speaker, or simply a 'cause':[54]

---

[54]Notice that in these sentences we may still consider the presence of a higher performative predicate like "I tell you, I inform you". In other words, we may postulate the existence of a "super-hypersentence" (to use Sadock's terminology), that is, a higher performative sentence dominating any sentence and accounting for the general context of language communication, that is the speaker-hearer context. Thus, sentences which are performative in the surface would also be dominated by a 'super-performative', and performative modal sentences of the type "You may come" (i.e., I allow you to come) would have the underlying structure "speaker says to hearer that speaker allows hearer to come". But we feel that there is still insufficient evidence for the linguistic relevance of such deep structures.

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(130) You may leave. (Your parents just told me.)
       You can go in now. (They won't mind.)
                          (The door has been unlocked.)
       You must leave now. (Otherwise you will miss the train.)

We will not investigate the relation of modality to the speech context any further. Our purpose was simply to point out that the system of modality as we have presented it offers numerous possibilities for non-performative sentences. Whether these sentences should be considered modal sentences obviously depends on how we define modality.

5.2. We tried to consider modal expressions as representing abstract logico-semantic structures involving the notions 'obligation' or 'possibility' (or [±OBLIG]). Furthermore, two deep 'roles' were shown to be essential to these structures: one expressing the 'origin' and the other the 'destination' of the 'obligation' or 'possibility'.[55]

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[55]In a recent article, H. Seiler (1971) exposes a similar view:

"The problem of 'will' and 'wish' in modal expressions will never be
solved as long as one takes these notions as unanalyzed primitives...
In the semantics of 'will', we must ask who is the person who wants
something, from whom does he want it, and what is it that he wants."
(p. 80).

This general abstract structure can be said to underly any modal
expression, whether it is inferential or not, or whether it is performative
or not. We can graphically represent it as follows:

(131) <u>ORIGIN</u> → [±OBLIG] → <u>DESTINATION</u> (→ [+INFER]).

('ROLES') (PREDICATES)

This means that modals and moods are used to express a certain predication
of necessity or possibility with respect to the persons involved in the
accompanying 'roles'.

If we now want to say that modality implies "the attitude of the
speaker", we first have to be sure that we know what we mean by "speaker"
and "attitude". In sentence (132)

(132) John <u>maintained</u> that Mary had come.

(which is accounted for by our model) the attitude of the speaker (i.e.,
the person reporting the 'claim' made by John) is not involved: it
is "the subject of the sentence, but not necessarily the speaker (who)
thinks that the complement is true." (Kiparsky, 1967, p. 183). In other
words, it is the speaker whose claim is being reported in the sentence
who has to be associated with the 'origin' of the modality. However,
in (133)

(133) Karl sagte, er <u>wäre</u> nie da gewesen.
       "Karl said that he had never been there."

the use of the "subjunctive mood" implies an attitude of scepticism on
the part of the speaker reporting Karl's words.[56] And in (134), both

---

[56]Notice that the use of the so-called "subjunctive II" in
indirect discourse to suggest a "contrary-to-fact" statement (as in
(133) and (134)) is not accepted by all native speakers.

---

the reporting speaker and the speaker reported about play a role in
the modality of the sentence:

(134) Karl sagte, er <u>hätte</u> es nicht tun <u>dürfen</u>.
       "Karl said that he was not allowed to do it."

Indeed, Karl has the role of the 'destination' of the prohibition, and
the reporting speaker has the role of the 'origin' in the "subjunctive
modality" expressed in <u>hätte</u>. We might suggest the following tentative

deep structure for (134):

(135) (S^0) Speaker say to hearer

(S^1) that Karl said

(S^2) that (indef. Agent) not <u>allow</u>

(S^3) that Karl do it

and (S^4) Speaker <u>want</u>

(S^5) hearer to <u>infer</u>

(S^6) that not S^{2+3}

(where S^0 stands for the direct speech act, S^1 for the indirect speech act, S^2 for the [+POSS] modality, S^3 for the object of the [+POSS] modality, S^4 and S^5 for the inferential [+OBLIG] modality, and S^6 for the object of the latter.)[57]

---

[57]S^0 and S^{4+5} are performative sentences. Notice that the "subjunctive mood" (as represented in (133) and (134)) is of the <u>inferential</u> type. (This explains why the inferential modal <u>sollen</u> is sometimes used to paraphrase the "subjunctive mood" in German). Notice further that H. Seiler (1971), in his investigation of conditional sentences, seems to come to a similar conclusion when he postulates an underlying predicate 'claim' to account for the modality present in such sentences (pp. 81, 85).

As for the exact nature of the "attitude" of the speaker in modal sentences, we would like to suggest that it consists essentially of the speaker's 'presence or absence of will' (the 'will for somebody to infer' in the case of inferential modality). This remains, of course, an open question.

If we conclude that the attitude of the speaker (of either the immediate or the reported speech act) is central to modality, it is still not clear whether this would force us to exclude all non-inferential causal modals, since they do not imply (at least not so far as we can see now) any attitude of the speaker of the type we want to postulate.

On the other hand, there are a variety of ways in which the attitude of the speaker can be expressed (consider sentences (136)-(138)). Whether we should incorporate them in our system of modality, and how we could do it, is still a mystery.

(136) Er kommt <u>leider</u> nicht.
"Unfortunately, I am sorry that, he doesn't come."

(137) Ich <u>bedauere</u>, daß er nicht kommt.
"I regret that he doesn't come."

(138) Ich bezweifle, daß er kommt.
       "I doubt that he will come."

Finally, we should remember that modality is also a matter of degree. Within the system of 'obligation', e.g., volition can be anything from a strong will to a wish, and within the inferential system, modality can range from absolute certainty to slight probability. This might well explain the difficulty, if not the impossibility, of separating modal expressions from non-modal expressions. Wunderlich (1969) has shown that the verba dicendi (the verbs of saying) can also carry some degree of modality.[58] We might therefore say that

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[58]This was communicated to me by Heinz Vater. (See also note 40). It is interesting to notice that Ross (1970) has grouped, without distinction, such verbs as say, declare, propose, authorize, demand, in his list of verbs that can be used performatively (pp. 222-223).

---

any act of saying (or any sentence) conveys a certain degree of modality which goes from zero (or near zero) in neutral reporting to the extremes of volition (will, command) and absolute certainty. This suggests, if anything, that a theory of modality such as the one we propose can not do more than account for the basic meaning of modality and explain its abstract structures. Should it do just that, our task might be said to have been not in vain.

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Case Opposition in Tagalog[1]

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While focusing or topicalization is not so crucial to a general understanding of this paper, yet some knowledge of it is required for a fuller appreciation of some of the points discussed. For an introduction to focus in Tagalog, see Bowen (1965), Otanes (1966), and Schachter and Otanes (1970).

The term <u>case opposition</u> is used in this paper to refer to the potentiality of a surface noun phrase to be interpreted in the deep structure as either of two (or more) cases. Two other terms, <u>verb case</u> and <u>noun case</u>, will be explained. A noun phrase with a verb case is one which enters into a semantic relationship with the verb of the sentence, and a noun phrase with a noun case is one which semantically relates with a noun in the sentence. The underlined NP in (1) is an example of a NP with a verb case; we shall refer to this type of verb case as <u>verb locative</u>--the verb locative tells where the event occurs. In (2) the underlined NP is an example of a noun case, <u>noun locative</u>, since it specifies where the noun <u>bata</u> is when the event occurred.[2]

    (1) Nahiga <u>sa parke</u> ang bata.
           lay   park   boy
           down
           'The boy lay down in the park'.

    (2) Ang bata <u>sa parke</u> ay nahiga.
           'The boy in the park lay down'.

---

[2]A noun locative, derivationally speaking, may be regarded to have started out as a predicate phrase of an ordinary locational sentence, from which as a relative clause, constructions like <u>sa parke</u> of (2) are derived.

This paper deals with some of the syntactic properties of verb and noun cases.

Some surface NPs accommodate two or more deep case interpretations. If a NP can be interpreted in any of two or more verb cases, then the NP exhibits a <u>verb case-verb case opposition</u> (VV). A <u>verb case-noun case</u> opposition (VN) involves the choice of either a verb case or a noun case; and a <u>noun case-noun case opposition</u> (NN), a choice between two noun cases. To illustrate, the NP <u>sa duyan</u> in (3), a verb case since it relates semantically with the verb, may take any of four deep case interpretations: <u>source</u> as in (3a), <u>path</u> (3b), <u>goal</u> (3c), and <u>verb locative</u> (3d).

(3). Lumundag <u>sa duyan</u> ang bata.
jumped   hammock   boy

    a. The boy jumped <u>from off the hammock</u>.

    b. The boy jumped <u>over the hammock</u>.

    c. The boy jumped <u>onto the hammock</u>.

    d. The boy jumped <u>on the hammock</u>.

Hence, <u>sa duyan</u> in (3) exhibits a four-way VV. In (4) the NP <u>ng bata</u> can be either a verb case or a noun case, an example of VN.

(4) Inihampas ang sinturon <u>ng bata</u>.
hit   belt   boy

    a. The boy hit the belt (against X).

    b. (X) hit the belt of the boy (against Y).

In (4a) the NP <u>ng bata</u> is in the agentive case, and in (4b), in the genitive case.

    Sentence (5) illustrates a NN case opposition.

(5) Ang sinturon sa mesa <u>ng bata</u> ay inihampas.
belt   table   boy   hit

    a. (X) hit the belt on the table of the boy (against Y).

    b. (X) hit the belt of the boy, which (belt) was on the table, (against Y).

where NP <u>ng bata</u> is in the genitive case in both readings, but in each instance differs as to the head noun it modifies, i.e., <u>mesa</u> in (5a) and <u>sinturon</u> in (5b).

    Four other case oppositions are illustrated below.

Noun Locative-Dative Case Opposition

(6) Ipinangsira ni Zeny ang martilyo <u>sa kahon</u>.[3]
destroy   Zeny   hammer   box

(6) a. Zeny used the hammer in the box to destroy (X).

      b. Zeny used the hammer to destroy the box.

---

[3]Fe Otanes called my attention to the fact that if the N involved, instead of kahon 'box', is kusina 'kitchen', a third reading arises: a noun locative case which takes the N 'Renato' as the target node:

Renato (while he was) in the kitchen used the hammer to destroy (X).

This opposition is accounted for and in fact is a good illustration of the 'blocking effect' discussed in Part 4. The point of the suggestion of course is that case opposition may well be a function not only of the limitations of linear surface structure ordering but also of the semantic properties of some nouns. For another example of a semantically determined opposition, see Footnote 10.

Genitive-Dative Case Opposition

(7) Pinagkainan niya ang plato ng prutas.
      ate   he/she   plate

      a. He/she ate (something) from off the plate of the fruit [fruitplate].

      b. He/she ate fruit from off the plate.

Benefactive-Dative Case Opposition

(8) Inihampas nila si Myrna.
      hit   they   Myrna

      a. They hit (something) for Myrna.

      b. They hit Myrna (against X).

Agentive-Commitative Case Opposition

(9) Sinipa kami ni Rey.
      kicked us   Rey

      a. Rey kicked us.

      b. (X) kicked us (Rey and me).

In this paper, only the case oppositions found in two ambiguous sentences will be discussed. The sentences are:

(10) Nahulog ang bata sa duyan.
      fell   boy   hammock

(11) Inihampas ang sinturon ng bata sa mesa.
      hit   belt   boy   table

where (10) has three readings (10a, 10b, 10c), and (11), four readings
(11a, 11b, 11c, 11d).[4]

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[4]There is a fifth reading, the benefactive reading. See foot-
note 10.

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(10) a. The boy fell onto the hammock.

      b. The boy fell from off the hammock.

      c. The boy on the hammock fell.

(11) a. The boy hit the belt against the table.

      b. The boy on the table hit the belt against (X).

      c. (X) hit the belt of the boy against the table.

      d. (X) hit the belt of the boy, which (belt) was
          on the table, (against Y).

Part 2

Expressed in Tagalog in unambiguous ways, the three readings of
(10) may be written as follows:

(10) d. Nahulog ang bata patungo sa duyan.
                           going
                           to

      e. Nahulog ang bata magmula sa duyan.
                           coming
                           from

      f. Nahulog ang bata na nasa duyan.[5]

---

[5]It seems that the locative element in the construction na nasa
duyan is the second na. It occurs in other locative constructions,

such as: <u>nasaan</u> (na + saan) 'where', <u>narito</u> (na + dito) 'here', <u>nariyan</u> (na + diyan) 'there', <u>na kay</u> 'in the person or possession of'. However, this analysis has some difficulties. While <u>na</u> occurs in NL phrases, it does not occur in VL phrases. It seems attractive to hypothesize that the feature Locative is a property of nouns instead of events (i.e., the person, or object, rather than the event, is what is located), considering that in most occurrences of the <u>sa</u>-phrase as a verb case the phrase can be classified as either source, goal, or path, depending on the verb. Yet <u>sa</u>-phrase, in a few instances, may be used to clearly locate an event. To illustrate:

   (i) Binuntal sa ilong si Renato.   (goal)
        punched   nose   Renato
        Renato was punched in the nose.

   (ii) Binuntal sa parke si Renato.   (verb
        Renato was punched (while he was) in   locative)
              the park.

<u>Patungo</u> and <u>magmula</u> are motion verbs[6] functioning as directional

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[6]For a discussion of prepositions as motion verbs, see Becker and Arms (1969).

---

prepositions, and <u>na</u> in (10f) is the relativization marker.

We may now analyze the source of ambiguity of constructions like (10). In all three unambiguous sentences each corresponding to a reading of (10), involved is the recovery of deleted elements, <u>patungo</u>, <u>magmula</u>, <u>na na-</u> in (10d), (10e), and (10f), respectively. Thus, we may say that the ambiguity of (10) is caused by the deletion of three different elements, where such a deletion results in the uncertainty of the underlying structure of the truncated constituent. In (10) deletion of the motion verbs occurred after extraposition of the verb complements <u>patungo</u> <u>sa</u> <u>duyan</u> and <u>magmula</u> <u>sa</u> <u>duyan</u>. Extraposition alone, however, does not produce ambiguity, but extraposition and deletion, in our examples, increases the number of cases in opposition from two to three. This point will be made clear. Consider these sentences:

   (12) Nahulog <u>patungo</u> <u>sa</u> <u>duyan</u> ang bata.

   (13) Nahulog <u>sa</u> <u>duyan</u> ang bata.

   (14) Nahulog <u>magmula</u> <u>sa</u> <u>duyan</u> ang bata.

   (15) Nahulog <u>sa</u> <u>duyan</u> ang bata.

Notice that the verb complements have not been extraposed, and that
deletion of the motion verbs resulted in the same surface structure
(13 and 15). The truncated constituent, sa duyan, now exhibits a
two-way ambiguity between the source and goal cases. In (19), however,
where both extraposition and deletion occur, a third case, the noun
locative, figures in the opposition.

(16) Nahulog ang bata patungo sa duyan.

(17) Nahulog ang bata magmula sa duyan.

(18) Nahulog ang bata na nasa duyan.

(19) Nahulog ang bata sa duyan.

Other than the recovery of deleted elements, another way to make
clear the case function of a particular NP is by precise ordering of
constituents. We shall call this process reordering. Consider this
sequence of sentences:

(20) Nahulog ang bata sa duyan.

(21) Ang bata na nasa duyan ay nahulog.

(22) Ang bata sa duyan ay nanulog.

where in (22), despite the deletion of the elements na na-, the noun
locative function of the NP sa duyan is not ambiguous. Notice that
in (21) and (22) the subject NP ang bata, together with its complement,
has been moved to a pre-predicate position (ay is inserted as a
boundary marker between the subject phrase and the predicate phrase).
The ordering that resolves the ambiguity is of course not simply the
inversion of the predicate-subject order, but the ordering which leaves
no doubt that the sa-phrase is a modifier of the subject noun and not
of the verb; in other words, that the sa-phrase functions unequivocally
as a noun case. It is of course possible to move only the subject NP,
leaving behind sa duyan as in (23),

(23) Ang bata ay najulog sa duyan.

and this as well resolves an ambiguity of sa duyan. The possibility
of sa duyan functioning as a noun locative modifying ang bata is
eliminated; now sa duyan clearly serves as a complement only of the
verb. But, as noted elsewhere in this paper, sa duyan in (23) is still
ambiguous as to whether it is source or goal, a VV ambiguity which is
by no means resolved by reordering. A third possibility is to move
simply the phrase sa duyan to a pre-verbal position in a predicate-
subject ordered sentence, as in (24).

(24) Sa duyan nahulog ang bata.

in which the VN case opposition is also resolved. But like (23), this

reordering does not disambiguate the VV case conflict.

The fact that in (23) and (24) sa duyan is still ambiguous, despite the fact that it is clear that the sa-phrase is associated with the verb and not with the noun bata, is a limitation of reordering as a method of disambiguating case oppositions. Reordering does not disambiguate a VV case opposition. This limitation is further illustrated in sentences (12) to (15). In (15) the truncated verb complement, unextraposed to show the node to which it belongs, is still an ambiguous construction.

This shows a major difference between a VV case opposition and a VN case opposition. The ambiguity resulting from the opposition of two verb cases can only be resolved by the recovery of the deleted elements, whenever such a deletion has been made,[7] but not by reordering.

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[7]When no such deletion has occurred, disambiguation requires major syntactic change, which may take the form of a change of focus, or even extensive rewording of the sentence.

This should be evident as a VV ambiguity is brought about not by a question of the proper node with which the NP is to be associated; the ambiguity lies buried deep in the semantic structure of the language. A VN case opposition, however, may be resolved either by element restoration or by reordering, as will be seen.

The VN case opposition in (4) is resolved as a genitive case through restoration of the deleted elements na ari '(which is) owned' as in (25).

(25) Inihampas ang sinturon na ari ng bata.

or by reordering as in (26)

(26) Inihampas ng bata ang sinturon.

which unambiguously makes ng bata in the agentive case. A NN case opposition, on the other hand, may be resolved only by reordering. To illustrate: (27), which restores the deleted elements na ari, is still ambiguous, but (28), which adjoins ng bata to the noun sinturon, although no restoration of deleted elements has been made, is unambiguous.

(27) Ang sinturon sa mesa na ari ng bata ay inihampas.

(28) Ang sinturon ng bata sa mesa ay inihampas.

To summarize the points discussed in this section: If we regard a verb case conflict as resolvable only by restoration and a noun case conflict only be reordering, then we may state as follows the different capacities of noun and verb case oppositions to be disambiguated:

Case Opposition	Disambiguation Potential:	
	Rest.	Reord.
VV	+	−
VN	+	+
NN	−	+

Part 3

Constituent reordering as a method of disambiguating case conflicts, as has been noted, is of limited application, but its nature explained a lot about case opposition processes. Hence, we shall have more to say about it. First, we shall look into the extent of constituent ordering in Tagalog. The sentence

(28) <u>Inihampas</u> <u>ang sinturon</u> <u>ng bata</u> <u>sa mesa</u>.
      1   2   3   4

has four constituents. The left to right ordering of these constituents in sentence construction is very flexible. With four elements, the number of possible arrangements is 24, but 6 of these are ungrammatical since they start with the word <u>ng</u>, a restriction in Tagalog sentence formation. Of the 18 grammatical sentences, 9 are in the inverted order (subject-predicate), hence, the sentence inversion marker <u>ay</u> is inserted between the subject and the predicate.[8,9]

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[8] The currently accepted analysis of <u>ay</u> is that it is the subject-predicate boundary marker. This analysis is not accurate, as these sentences show:

(i) Sa mesa <u>ay</u> inihampas / ang sinturon ng bata.
            predicate   /   subject

(ii) Sa mesa ng bata <u>ay</u> inihampas / ang sinturon.
               predicate   /   subject

where <u>ay</u> does not separate the subject and the predicate. Rather, it separates two constituents of the predicate phrase. This point does not run counter to the idea of the statement to which this footnote refers, since the terms 'inversion' is redefined in this paper (see

Footnote 12). This analysis of the _ay_ particle is somehow related
to Anderson's (1967) view that _ay_ is a minor focusing device.

_____

[9]With _ay_ as the fifth constituent, the number of possible
orderings from a permutation of 5 elements is increased to 120. Quite
a number of these sentences, however, are ungrammatical. For example,
sentences beginning with _ay_ and _ng_, because of sentence formation
constraints in Tagalog, are ungrammatical, and so are sentences
ending in _ay_, and sentences with the _ay_ _ng_-phrase sequence.

_____

Thirteen of these sentences have ambiguous case relationships.
The first of these ambiguous sentences (29) exhibits a four-way
ambiguity, i.e., two instances of case oppositions (genitive-agentive
and noun locative-goal). The accompanying diagram, called a case
association diagram, shows graphically the case association pattern of
an ambiguous sentence.

     (29) Inihampas ang sinturon ng bata sa mesa.
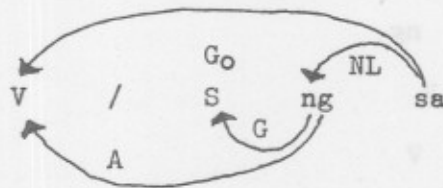
In the above diagram, V is verb, S is subject, _ng_ refers to a _ng_-
phrase, _sa_ to a _sa_-phrase. The cases are Agentive, Genitive, Goal,
and Noun Locative.   S of course is also a NP, and it does figure in
another instance of case opposition, but the reading that this
opposition gives, although syntactically well-formed, is semantically
unacceptable and therefore will not be discussed here.[10] V and S are

_____

[10]The case conflict is between the benefactive and the dative
cases. Thus, if we enter this opposition into the discussion, (i)
may have the benefactive readings glossed as (ii) and (iii),

    (i) Inihampas ng bata ang sinturon sa mesa.

    (ii) The boy hit the table for the belt.

    (iii) The boy hit (X) for the belt on the table.

and two dative readings. Of course the absurdity of the benefactive
readings vanishes if the head noun of the _ang_-phrase in (i) is a noun
that can semantically be the benefactor of the action or event, as in
(iv).

    (iv) Inihampas ng bata ang matanda sa mesa.
                             old man

where the benefactive-dative opposition is clear. The semantic
element involved here may simply be the feature [+animate]; that is,
if the N is animate the benefactive reading is recognized.

in the upper case, signifying that they are major nodes. The slanting
line is a major node boundary. The head of an arrow points to the
node to which the node where the arrow originates is associated; the
former is called the target node, and the latter the associating node.
Two arrows emanating from a node mean a case conflict. Thus, in (29)
the sa-phrase is ambiguous as to whether it is a noun locative or a
goal case, and the ng-phrase may be either in the agentive case or
genitive case. Notice that association with the major node V, a verb
case relationship, is preserved irrespective of the number of nodes
that intervene between the target node and the associating node. This
is not true in a noun case relationship, as we shall see. But first,
notice that the genitive meaning of ng associates with S, and that
the noun locative meaning of sa associates with ng, i.e., schematically,

$$(30) \quad ng_G \rightarrow S$$

$$(31) \quad sa_{nl} \rightarrow ng$$

$$(32) \quad ng_A \rightarrow V$$

$$(33) \quad sa_{Go} \rightarrow V$$

where the general form of a level of case association pattern is
$x_i \rightarrow y$ (read x with the function, or meaning, i associates with y,
and x and y are nodes).[11] (32) and (33) complete the case association

[11]As the context of the paper suggests, the symbol ' $\rightarrow$ ' does
not refer to the replacement symbol conventional in TG. It is intended
to be read as 'associates with'. It will be noted that a case
association pattern is a level by level schematization of a corresponding
case association diagram. The introduction of CAP is necessary to
allow reference in the text to a particular level of case association.

pattern of (29). We shall compare this pattern with that of (34).

(34) Inihampas ang sinturon sa mesa ng bata.
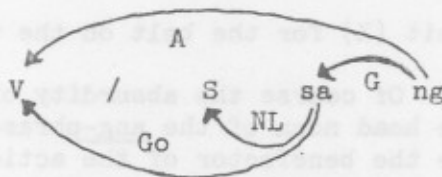
In (34), the same agentive-genitive and noun locative-goal case oppositions are involved. But a change of the order of the sa- and ng-phrases changes the case association pattern with respect to the noun cases but not with respect to the verb cases. The case association pattern of (34) is :

$$ng_G \rightarrow sa$$

$$ng_A \rightarrow V$$

$$sa_{NL} \rightarrow S$$

$$sa_{Go} \rightarrow V$$

This observation complements the conclusion reached in the discussion in Part 2 of ways of disambiguating case oppositions. A verb case relationship is not affected by constituent reordering, the case relationship is preserved no matter where the associating nodes are positioned; hence, a verb case opposition cannot be resolved by constituent reordering. On the other hand, a noun case relationship is dependent on the position of the nodes involved, and a change in the order of constituents signals a change of the target node.

Suppose, now, we wish to make clear the noun case function of a particular NP. Constituent reordering requires that the NP be adjoined to the node with which it is to be associated. To illustrate, let us attempt to disambiguate the sa-phrase in (29). First, we move the phrase one node to the left--the result is (34). And in (34), as noted, sa still exhibits the goal-NL opposition, although this time the target node for the NL function is not any more the ng-phrase but S. Next, we move sa another node to the left, and we get (35).

(35) Inihampas sa mesa ang sinturon ng bata.
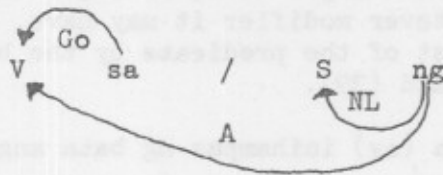
This time sa is fully disambiguated and it carries the goal case function. It should be clear how this method of disambiguation works. The adjunction eliminates all but one node to the left of the phrase being disambiguated, and hence, leaves no doubt as to the node to which it is to be associated with, in this case, the node V. However, note that ng in (35) is still ambiguous. Suppose we wish to disambiguate the whole sentence. We might proceed next as follows. To eliminate $ng_G \rightarrow S$ in (35), we move the phrase from the subject side to the predicate sice, and we get (36).

(36) Inihampas sa mesa ng bata ang sinturon.

Go
V sa ng / S
G
A
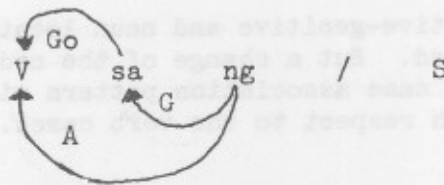
But ng in (36) is still ambiguous, exhibiting the same case conflict
as in (35), although this time the head noun of the genitive function
is sa. Now we move ng one node to the left, and we get (37). In
(37), ng is fully disambiguated and is in the agentive.

(37) Inihampas ng bata sa mesa ang sinturon.

A
V ng sa / S
NL
Go
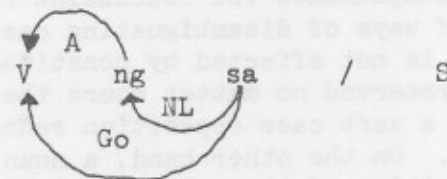
This is fine, but moving ng immediately to the right of V pushes
sa one node to the right--the result is that sa becomes ambiguous
once again. Thus, the whole sentence has not been disambiguated.
     It seems that herein lies a real dilemma. Because of the natural
limitation imposed by a linear ordering of surface constituents, there
can only be one node <u>immediately</u> to the right, or left, of a particular
node. How then is the ambiguity of a V NP NP structure resolved?
A solution is to move one of the NPs to the <u>left</u> of the V node. And
this is precisely what happens in Tagalog. One of the NPs, the sa-
phrase, is 'promoted' as a major node, is adjoined to the left of V,
and, together with whatever modifier it may have, is optionally
marked off from the rest of the predicate by the boundary marker <u>ay</u>.
This is shown in (38) and (39).

(38) sa mesa (ay) inihampas ng bata ang sinturon.

Go
SA V ng / S
A
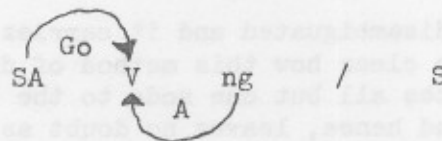
(39) Sa mesa ng bata (ay) inihampas ang sinturon.

Go
SA ng V / S
NL
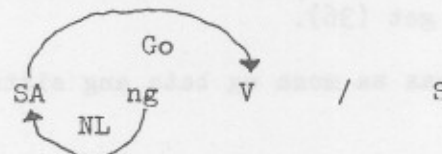
The promotion potentiality of a NP seems to be a function of
its marker. A sa-phrase may be promoted, but not a ng-phrase.
Other NPs may be treated similarly. This property of a NP marker we
shall call directionality. Thus, sa is an ambi-directional marker
since it can make a left connection or a right connection, or both
at the same time. Ng is a left-directional marker. What is inter-
esting to note is that a promoted NP loses its capacity for multiple
case functioning. Like the NP promoted as the subject of the
sentence, sa when promoted can only make a case connection with the
verb of the sentence. In (38) and (39) sa lost its potentiality to
be interpreted as a noun case. Since this is so, it follows that a
VV case opposition involving the sa-phrase marker cannot be resolved
by moving the sa-phrase to a pre-verbal position, as (40) shows

(40) Sa duyan nahulog ang bata.

Where sa duyan is still either goal or source.

Part 4

In any discussion of opposition, the matter of blocking and,
complementarily, of attraction normally becomes a part. Indeed, in
case opposition, we can profitably discuss the concepts of case
blocking and case attraction. In fact, the postulation of such
concepts is necessary to answer a number of questions dealing mainly
on the matter of the choice of target nodes. We might ask the very
general question, why does node X associate with node Y and not with
node Z?

To answer this question, we shall first state concisely the
case association rule, as follows: In a normally ordered string of
constituents, the constituent to the right associates primarily but
not solely with the constituent immediately to its left, the extent
and strength of connection(s) subject to the forces of attraction
and blocking.[12] Attraction and blocking are governed by two rules:

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[12]This is a very tentative rule, as it does not cover the
right-directing property of certain NP markers. The reason for this
non-inclusion is obvious: the rule has the restriction that the
strings be normally ordered. A sentence with a right-directing NP
has the inversion marker ay inserted, and we define inversion to
operate not only on major nodes but also on nodes within a node.

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the rule of proximity and the rule of node hierarchy. That is, (i)
the closer the associating nodes are to one another, the stronger
the connection is likely to be, and (ii) the higher the position of
a node in the node hierarchy, the stronger is its attraction power
on an associating node. In the node hierarchy, V occupies the

highest position, followed by S and any other node that may be promoted, then the other noun phrase nodes.

In (29) sa associates with ng because of the rule of proximity and with V because V is in the highest rung of the hierarchy. The NP sa does not make a connection with the NP S because it is blocked by the NP ng and attracted by the node V. The NP S, although a major node, does not exert as much force as the other major node V, since S in itself is an NP. In (41), notice that sa makes a connection with the NP S.

(41) Ang sinturon ng bata sa mesa ay inihampas.
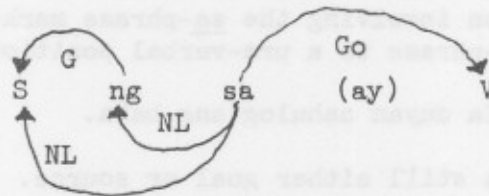
The NP ng exerts blocking effects, but the NP S, being a major node, exerts a pull strong enough--but not as strong a pull as V exerts-- to create only a minor ambiguity. Sa, an ambi-directional marker, makes a right connection with the node V, but because of a major node boundary, ay, the ambiguity is minor. Between the two minor ambiguities in (41), i.e., $sa_{NL} \rightarrow S$ and $sa_{Go} \rightarrow V$, the latter is more likely to be seen, an indication that a verb node has more attraction power than a NP node. In (42)

(42) Ang sinturon sa mesa ng bata ay inihampas.
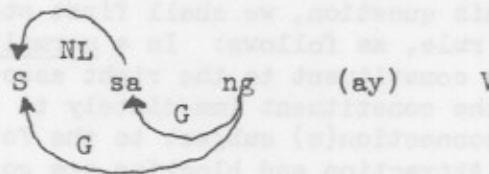
ng does not make a connection with V because ng is a left-directional marker. In (43) ng does not connect with sa because S and V block it, and sa, blocked by V, does not connect with S.
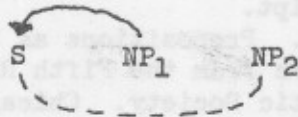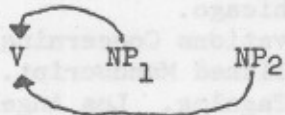
(43) Sa mesa inihampas ang sinturon ng bata.
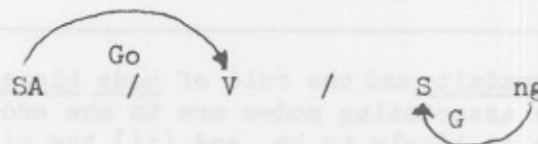
This is an example of complete blocking. Blocking behavior may be
schematically illustrated as follows:
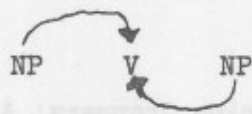
NP   V   NP   (complete blocking: the NPs do not
                        connect with each other.)

S NP_1 NP_2 (partial blocking: NP_2 somehow
                        succeeds in connecting with S)

V NP_1 NP_2 (ineffective blocking: NP_2 makes a
                        full connection with V)

It follows that the degree of ambiguity of a construction
depends on the type of blocking involved. In a complete blocking,
no ambiguity occurs. Partial blocking results in a type of ambiguity
that may be hard to discern and may not even be regarded as ambiguous
by some speakers. When blocking is ineffective, ambiguities are
clear cut.

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The Case Against Stative
(The Stative The Art)

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In A Linguistic Study of the English Verb, Palmer (1965)
observes that "there are some verbs that are commonly not used in
the progressive form at all, even where they seem to indicate
duration". Whilst claiming that for these verbs the non-progressive
form is "the norm", he recognises that in certain circumstances the
progressive forms can be used. Palmer subdivides this class of
verbs into "private" verbs and verbs "of state". In claiming that
"The reason why these do not normally occur with the progressive
is different for each sub-class", Palmer is saying that the reasons
are semantic ones. The classes that he is setting up are, in fact,
semantic classes.

In Stative Verbs and Adjectives, however, Lakoff (1966) took a
very different approach. In his analysis there is a syntactic
feature [[±stative] which verbs and adjectives have in common,
verbs being mostly [-stative], and adjectives being mostly [+stative].
While considering stativity a syntactic phenomenon, Lakoff recognises
that "The grammatical distinction...partially reflects a semantic
distinction".

In this paper, I shall argue that it is wrong to have a stative/
non-stative distinction in the syntax, that such a distinction should
be confined to the semantics, and that at least part of its syntactic
function can be adequately handled in terms of case grammar.

It seems to me wrong to label a verb as [±stative] and then say
that because it is labelled in a certain way it cannot occur in
certain constructions. (Incidentally, it seems somewhat circular
to argue that a verb has a certain feature because it cannot occur
in certain constructions, and then to explain such non-occurrences
by the presence of this feature.) Firstly, we are left in a quandary
when a verb that is marked [+stative] does appear in the progressive,
imperative, etc.: how do we explain such an occurrence in a theory
that claims that the verb is inherently syntactically stative?
Secondly, we fail to explain why a verb may occur in certain con-
structions when it has one meaning, but not when it has a different,
but related meaning. Thirdly, Lakoff himself admitted that there
are exceptions to the semantically active/syntactically non-stative
correspondence: he points out that all of the exceptions are
semantically non-active and syntactically non-stative. There are
two classes of exceptions: (a) remain, stay, keep, (b) sit,
stand, huddle, squat.

Lakoff's first test for a stative verb is that it should reject the command imperative. It is obvious that a verb that cannot have an Agentive in its case frame cannot take the command imperative construction. Let us consider the verb smell--in Lakoff's analysis [+stative]. I would claim that smell has (at least) two case frames: +[__E O] and +[__A O]. These different case frames account for the difference between (1) and (2):

      (1) I smelled onions, but I couldn't think where the
            smell was coming from.

      (2) I smelled the rose and nearly pricked my nose in
            the process.

Only in (2) has an action been performed. It is only when smell has the case frame +[__A O] that it can take a command imperative. Thus:

      (3) *Smell onions!

      (4) Smell the rose!

In Lakoff's theory, smell would be marked as [+stative] and (4) would have to be marked as some kind of exceptional usage. In the case grammar analysis suggested above, however, no such problems arise, and we have explained why it is that when smell means one thing it can take the command imperative but in its other meaning it cannot.

Just as the command imperative requires the presence of an Agentive, so do Lakoff's constructions with persuade/remind, for someone's sake and manner adverbials like carefully, reluctantly, masterfully and enthusiastically. We may note in passing that the Agentive NP need only be Animate and need not be Human.

      (5) I persuaded the frightened dog to come out of its
            hiding place.

      (6) The monkey enthusiastically ate the expensive orchid.

Other tests that Lakoff uses are What I did was..., ...do so..., and ...instead of.... The first of these tests whether a verb is semantically active, do so is now accepted as generally problematic, and I fail to find any regularity using instead of as a test. That the tests do not do what Lakoff claims that they do is shown by (7)-(9):

      (7) What Spiro did was imply that students are trouble-
            makers.

      (8) I doubt John's word, and Peter does so too.

      (9) The article presupposed his guilt, instead of
            reserving judgment until all the evidence
            had come to light.

Perhaps the most problematic test of all is the progressive. There is, apart from any other difficulties, great dialectal differentiation as to which verbs can take the progressive. My Border Scots dialect, for instance, permits (10) and (11):

(10) I'm needing a new pair of shoes.

(11) I'm thinking that I'll go tomorrow.

both of which are impossible for a speaker of Southern English. Given the difficulties, is there anything we can meaningfully say about the occurrence and non-occurrence of the present progressive form in English preferably obviating the need for a syntactic feature stative?

Of those verbs which Lakoff classes as stative, the following can never in my dialect occur in the progressive form: know, desire, doubt, understand, perceive, believe, comprehend, preclude and seem. Of these verbs, the first seven take a subject NP in the Experiencer case, preclude takes an Instrumental as subject, and seem takes as subject either a pronominal copy of a sentence dominated by an Objective node or else an NP which has been raised out of the lower sentence. It seems to me significant that in none of these cases can the verb take an Agentive.

There are some cases where, as with the command imperative, we can explain the occurrence or non-occurrence of the progressive with the same verb by its case frame. The verb smell, to use it once again as an example, can occur in the progressive when there is an Agentive NP present, but not when there is an Experiencer NP present (we may note in passing that it is not possible to have both an Agentive and an Experiencer in the same sentence with smell.) Thus:

(12) *I am smelling something delicious.

(13) I am smelling my uncle's prize tea rose.

The verb taste occurs with the same cases as smell. We may note that the pairs hear/listen to, see/look at and (more problematically) feel/touch may be considered as, in a sense, the same verb, the two different forms of each directly paralleling the two different usages of taste and smell. In each case the first of the pair has the frame +[__ E 0] and the second +[__ A 0]. Boyd and Thorne (1969) suggest that with verbs like see and hear, can acts as the marker of progressive aspect. Thus:

(14) I can see the blackboard.

Quirk (1970) found a tendency on the part of people repeating sentences containing these verbs to insert can where it had not in fact appeared originally. Quirk's explanation is that "the modality in I can smell it seems to be a way of enabling the speaker to disclaim that he is choosing to smell it". Yet it seems to me

doubtful that it is modality that is here involved. Why it is the
form <u>can</u> that is thus used I do not know, but it does seem as if we
feel some need to express the idea of the progressive without
confusion with sentences like (13). Perhaps this need is felt
because we tend to use <u>see</u> and <u>hear</u> in the simple present with
frequentative meaning:

> (15) I see the castle every day on my way to the bus stop.

> (16) I often hear the National Anthem before turning off
>   the T.V. set.

I would claim that in both of the above the subject NP is still in
Experiencer.

The verb <u>imply</u> also has the possibility of occurring with or
without an Agentive. Once again, it is when <u>imply</u> does not have an
Agentive present that it rejects the progressive form, and when there
is an Agentive that it can take the progressive. Thus:

> (17) This evidence implies that he is guilty.

> (18) *This evidence is implying that he is guilty.

> (19) The prosecutor is implying that he is guilty.

<u>Appear</u> has many problems which I cannot go into here, but it too
gives some support to a theory connecting the occurrence of the
progressive with the Agentive case. It can take an Objective case
dominating a sentence (which would ultimately give (20)) or an
Agentive, with a Locative etc. (as in (21)).

> (20) John appears rich.

> (21) John is appearing in the play tonight.

Again, note the ungrammaticality of (22) where there is no Agentive
present.

> (22) *John is appearing rich.

We find that exactly the same thing happens with <u>sound</u>. In
(23) there is an Agentive and an Objective, and in (24) there is an
Objective dominating a sentence:

> (23) The doctor is sounding Fred's chest.

> (24) Paris sounds a lovely city.

> (25) *Paris is sounding a lovely city.

Commenting on a paper given at the LSA summer meeting 1970, Greg
Lee suggested that while it might be the case that absence of the

of the progressive construction implied absence of an Agentive, it was not the case that absence of an Agentive implied absence of the progressive. He then cited weather expressions like:

(26) It is raining.

(27) It is snowing.

and has since in conversation mentioned (28) as another example in support of his claim:

(28) He is sleeping.

At first glance, the evidence of the weather expressions appears strong: one would not expect there to be an Agentive present. On the other hand, let us consider (29) and (30):

(29) The petunias were destroyed by rain.

(30) The petunias were destroyed with rain.

In a lecture to his syntax seminar at Ohio State University on June 30, 1970, Fillmore suggested that (29) has the Objective and Instrumental cases present, and that (30) has an Agentive, Objective and Instrumental. This analysis is suggested by the prepositions: by marking an NP which has been downgraded by the passive transformation, and with marking an Instrumental NP which has not been so downgraded. There is obvious difficulty in finding an active sentence corresponding to (30). See, for example, the ungrammaticality of (31):

(31) *John destroyed the petunias with rain.

The only possibility would seem to be something like (32):

(32) God destroyed the petunias with rain.

There is other evidence that suggests that there is an Agentive somewhere in sentences with weather verbs. Firstly, we have sentences like (33):

(33) It's getting ready to rain.

Secondly, we find the pragmatic modal will with weather verbs:

(34) It just will not stop raining.

Thirdly, it is possible to find imperatives:

(35) Stop raining, won't you!

Weather verbs are undeniably a problem, and I do not feel competent to give a fuller analysis of them, but it does seem as if there is

an Agentive somewhere in their structure.

It seems that frequently, instead of considering a sentence as ungrammatical, we assign an extraordinary reading or analysis to some part of it. Let us take (36) as an example:

> (36) Last night I began to know the answer to that problem.

We would not normally expect a semantically non-active verb to follow begin. In (36), however, it is not as a semantically non-active verb that we interpret know: rather we reanalyse it as a 'developmental' verb, more or less equivalent, I think, to learn. Thus in (36) know takes an Agentive subject. I would suggest in passing that when we do want to express the onset of a state, we do it as in (37):

> (37) Last night I first knew the answer to that problem.

Of those verbs that Lakoff classes as stative, I can use the following with developmental meaning as in (38): like, appreciate, think, doubt, want, hate, love, hope and suspect.

> (38) I'm liking it here more and more.

I do not think that it is necessarily the case that for these verbs to be used with this developmental meaning there must be an Agentive present.

That we cannot say that a progressive always requires the presence of an Agentive is shown too by the other example that Greg Lee gave: the verb sleep. We may note the difference between the verbs sleep and wake, as in the following:

> (39) John is asleep.

> (40) John is sleeping.

> (41) John is awake.

> (42) John is waking.

I assume that the subject NPs in (39)-(41) are Experiencers: I am not sure about (42)--possibly it is Agentive. We may note that while wake indicates a change of state, sleep does not.

In none of sentences (43)-(45) is the subject NP Agentive:

> (43) The lorry is standing by the parking lot.

> (44) John is sitting on the chaise-longue.

> (45) The saw is lying on the woodpile.

All of them, however, have a verb which is semantically non-active, i.e. expresses a state, and express that this state is temporary. This is in contrast to (46)-(48):

(46) Nelson's statue stands in Trafalgar Square.

(47) The Queen sits on the throne.

(48) Shetland lies to the north of Orkney.

where the state is considered as either continuous and permanent (as in (46) and (48)) or permanently habitual (as in (47)).

Perhaps this use of the progressive form is tied up with the fact that in English the simple present form (other than performatives) denotes frequentative action if the verb is semantically active (this meaning often, but not necessarily, being reinforced by an adverbial). Since the simple form has come to have this function, it is not surprising that the progressive is used to denote one single action in the present. It appears that we cannot, in English, express the repetition of a state.

(49) John hits his son every day.

(50) *Peter resembles his father every day.

Thus for semantically non-active verbs, the simple form expresses one occurrence of the state, which may have considerable duration, and the progressive indicates that the state is temporary.

In this paper I have tried to show that it is wrong to consider verbs as syntactically [±stative] since this commits us to marking many usages as exceptions, and fails to account for why verbs take different constructions in different meanings. Lakoff's tests for stative were examined and it was seen that those which were at all regular could be accounted for by equating [-stative] with the presence of an Agentive subject NP, with the exception of the test of whether or not a verb could occur in the progressive form. It was found that those verbs which sometimes take an Agentive can occur in the progressive when an Agentive is present, but may not occur when it is not. I have also suggested that when a semantically non-active verb is understood 'developmentally' it may be used in the progressive form. It also seems that when we wish to express the temporariness of a state expressed by a semantically non-active verb we use the progressive form.

This paper is, of course, far from being a full study of the occurrence and non-occurrence of the progressive in English. It says nothing, for instance, about the use of the progressive with habitual meaning, nor does it consider the problem of how we are in fact to generate the be + ing form, whether as a higher verb, as in Ross (1967), or as a locative, as in Anderson (1968), or by some other means, We may rest assured, I feel sure, however, that in a fuller explanation of the progressive a syntactic feature stative will play no part.

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Some Psychological Verbs in Dutch

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In this brief paper I propose to isolate different types of
psychological verbs in Standard Dutch. The verbs chosen will be
described in terms of their case frame and the transformations they
must undergo. We want to find out how case grammar can explain the
uses of these verbs, and whether it can do so within the limits
outlined for it during the course. Ultimately I will compare the
results with those attained for English and perhaps draw a conclusion
about the nature of case grammar.

Psych-movement Verbs

Psych-movement verbs are verbs in which an Experiencer is part
of the case frame, and in which this Experiencer may not become the
surface subject of the sentence. The Psych-movement transformation
applies only when no Agent is present. Consider, by way of illustration,
sentence (1) and its case-grammar analysis, given as (2).

(1) Leeuwen verbazen mij.
    'Lions astonish me.'

(2)   Sent
         _____|_____
        | | |
        V   E   I
     verbazen mij   leeuwen
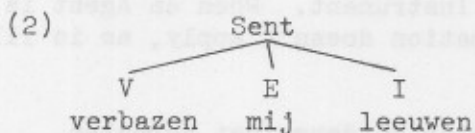
"Mij" names the experiencer of the psychological effect described by
the verb. "Leeuwen" names the instrument whereby this effect is
elicited in the Experiencer. As things stand now the Experiencer
will be selected by the Nominative-marking rule because of the place
it occupies in the deep order of cases with the absence of an Agent.
We therefore consider the verb as marked to undergo the Psych-
movement transformation, so that from (2) we get (3).

(3)   Sent
         _____|_____
        | | |
        V   I   E
     verbazen leeuwen mij
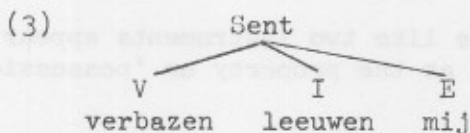
The Accusative-marking rule will label the Experiencer as [+Acc],
and it will ultimately become the surface direct object of the sentence,
while the Instrument will be marked as [+Nom] and will become the
surface subject.

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Two additional features isolate psychological verbs of the
type of "verbazen." First, they can become reflexive verbs with
the Experiencer in the surface subject position and the Instrument
in an oblique object position. Dutch is slightly different from
English in the sense that there is an alternative to Psych-
movement. Verbs of the type of "verbazen" also have individual
prepositions associated with them. Consider the following examples:

(4)　De mensen verblijden zich over het bezoek.
　　　vs.　Het bezoek verblijdt de mensen.
　　　'The visit makes the people happy.'

(5)　De president verwondert zich over de manifestatie.
　　　vs.　De manifestatie verwondert de president.
　　　'The president is surprised at the demonstration.'

(6)　De student interesseert zich in taalkunde.
　　　vs.　Taalkunde interesseert de student.
　　　'The student is interested in linguistics.'

It can thus be seen that Psych-movement is an optional transformation
for verbs of the type "verbazen" and "verwonderen." Alternatively
they undergo a copying transformation which Chomsky-adjoins the
Experiencer to the basic sentence, followed by a reflexivization
rule which produces the reflexive pronoun. The Experiencer becomes
the subject of the sentence and the Instrument surfaces as the head
noun-phrase in a prepositional phrase.

We note that for all the psychological verbs an animate Agent
is not incompatible with an Instrument. When an Agent is present
the Psych-movement transformation doesn't apply, as is illustrated
by the sentences.

(7)　Jan amuseerde de kinderen met verhalen.
　　　'John amused the children with stories.'

(8)　De president verheugde de studenten met zijn resignatie.
　　　'The students were delighted with the president's
　　　　resignation.'

(9)　De Keiser verlustigde het volk met brood en spelen.
　　　'The Emperor diverted the people with bread and games.'

When what superficially looks like two instruments appear, one of
them can always be described as the property or 'possession' of the
other:

(10)　Het licht verheugde mij met zijn glans.
　　　'The light gladdened me with its glimmer.'

(11)　De boom verwonderde mij met zijn fruit.
　　　'The tree amazed me with its fruit.'

However, the requirement suggested in "The case for case", namely that a "trace" should be left behind in the Instrument phrase, does not always apply to Dutch:

> (12) Met geblaf verschrikte de hond de vogel.
> 'The dog scared the bird with his barking.'

It is true, however, that with "property" nouns the reflexive pronoun is required:

> (13) *De boom verwonderde mij met fruit.

> (14) *Het licht verheugde mij met glans.

The verbs "verrassen" (to surprise) and "verschrikken" (to scare (away)) differ from the psychological verbs discussed so far. These verbs can't be reflexive and have a surface oblique object at the same time:[1]

> (15) *De dieven verrasten zich voor Jan.
>   'John surprised the thieves.'

> (16) *De vogel verschrikte zich voor de hond.
>   'The dog scared the bird.'

---

[1]Note that in my dialect of Limburgian Flemish these sentences are grammatical and quite acceptable.

When reflexive they can be called true reflexives in the sense that their Agent and Experiencer happen to be identical in the deep structure of the sentence. Compare this to the Psych-movement verbs of the "verwonderen" type where a reflexive element results from copying the Experiencer element and by adjoining the copy to the sentence. "Verrassen" and "verschrikken" can have an Instrument:

> (17) Met zijn binnenkomst verraste Jan de dieven.
>   'John's entrance surprised the thieves.'

but they must have an Agent in the surface subject position; the Instrument cannot fill this spot.

> (18) *Met zijn binnenkomst verraste de dieven.

They thus undergo neither Psych-movement, Copying nor Experiencer-shunting.

Experiencer-shunting

Among the verbs that undergo Experiencer-shunting we can distinguish several types. "Schijnen" (to seem) and "lijken"

(to seem) are verbs that may or may not manifest the Experiencer in the surface structure:

    (19) Het schijnt dat Piet ziek is.
             'It seems that Peter is sick.'

    (20) Het schijnt mij dat Piet ziek is.

    (21) Het lijkt (mij) dat taalkunde een vreemd vak is.
             'It seems (to me) that linguistics is a strange
                occupation.'

When the Experiencer is present it must be shunted because it can never appear as subject. The above sentences illustrate that an extraposition rule has applied. Instead of this the sentences could undergo Subject-raising only, and in that case the subject NP of the embedded sentence becomes the subject of the higher sentence:

    (22) Piet schijnt ziek te zijn.

    (23) Taalkunde lijkt een vreemd vak te zijn.

"Spijten" (to be sorry), in contrast to the above verbs, has the requirement that the Experiencer be manifested in the surface:

    (24) Het spijt mij dat de oorlog doorgaat.
             'I'm sorry that the war is continuing.'

    (25) *Het spijt dat de oorlog doorgaat.

Verbs that are marked to undergo Experiencer-shunting and not to undergo Extraposition are "herinneren (aan)" (to remind) and "lijken (op)" (to resemble).

    (26) Die schrijver herinnert (mij) aan Couperus.
             'That author reminds me of Couperus.'

    (27) Magda lijkt op Jan.
             'Magda resembles John.'

Note that "lijken" may not have a manifest Experiencer.

Verbs such as "denken" (to think) and "geloven" (to believe), as well as "vrezen" (to fear) and "genieten (van)" (to enjoy) undergo neither Experiencer-shunting nor Extraposition.

To sum up the classification of psychological verbs in Dutch I have drawn up the forcibly incomplete chart given on page

Case grammar is an effective framework for the description of the verbs we have chosen. The verbs seem to function in basically

the same way as do psychological verbs in English, with the exception
of their reflexive properties. The basic notions of case grammar
help us to distinguish clearly and in a believable way the super-
ficial and the "true" reflexive constructions. This study reveals
little that is unexpected, but perhaps the study of more "exotic"
languages will be a more difficult test for the case grammar model.

	Psych-move	E cop	E shunt	Extrap	Subj rais
amuseren (met)	α	$-\alpha$	−	±	
verbazen (over)	α	$-\alpha$	−	±	
verwonderen (over)	α	$-\alpha$	−	±	
verblijden (over)	α	$-\alpha$	−	±	
verheugen (over)	α	$-\alpha$	−	±	
verlustigen (in)	α	$-\alpha$	−	±	
verplichten (tot)	α	$-\alpha$	−	±	
interesseren (bij, in)	α	$-\alpha$	−	±	
verrassen	−	−	−	±	
verschrikken	−	−	−	±	
schijnen	−	−	+	β	$-\beta$
lijken	−	−	+	β	$-\beta$
herinneren (aan)	−	−	+	−	
(ge)lijken (op)	−	−	+	−	
denken	−	−	−	−	
geloven	−	−	−	−	
spijten	−	−	+	−	−
vrezen	−	−	−	−	−
genieten (van)	−	−	−	−	−

the same way as do psychological verbs in English, with the exception
of their reflexive properties. The basic notions of case grammar
help us to distinguish clearly and in a believable way the super-
ficial and the "true" reflexive constructions. This study reveals
little that is unexpected, but perhaps the study of more "exotic"
languages will be a more difficult test for the case grammar model.

	Psych-move	E cop	E shunt	Extra	Dahl rule
annaseren (aan)	n	n-	-	n	
verbazen (over)	n	n-	-	n	
verwonderen (over)	n	n-	-	n	
verblijden (over)	n	n-	-	n	
verheugen (over)	n	n-	-	n	
verlustigen (in)	n	n-	-	n	
vergenoegen (met)	n	n-	-	n	
interesseren (bij, in)	n	n-	-	n	
vertrouwen	-	-	-	n	
verschrikken	-	-	-	n	
schijnen	-	-	+	n	n-
lijken	-	-	+	n	n-
bevinden (aan)	-	-	+	-	
bevallen (aan)	-	-	+	-	
denken	-	-	-	-	
geloven	-	-	-	-	
spijten	-	-	+	-	-
vrezen	-	-	-	-	-
gevelen (van)	-	-	-	-	-

Omissible Experiencers in Norwegian

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In a series of lectures on "case grammar" presented at the 1970 Linguistic Institute in Columbus, Charles Fillmore suggested that verbs like (be) obvious, seem or resemble have associated with them an argument in what he calls the Experiencer case, abbreviated E (see Fillmore 1968b, 1970; and Postal 1970). The E can be expressed phonetically in sentences containing these verbs, but it does not have to be.

(1) a. It is obvious to me that Henry is a hypoctite.
    b. It is obvious that Henry is a hypocrite.

(2) a. Sheila seems to me to resent Paul's remark.
    b. Sheila seems to resent Paul's remark.

(3) a. To me Jerry resembles Mike.
    b. Jerry resembles Mike.

The same applies to a "relative" adjective like (be) tall; cf. the appropriateness of To me she is rather tall and the oddity of #To me she is exactly four feet tall.

Fillmore tried to account for these omitted Experiencers by postulating a transformational rule of Experiencer Shunting which he soon discarded and replaced by a more general Shunting rule. This rule says that if the case frame feature of a given verb tells us that a given case is omissible in sentences containing that verb, the case is shunted, that is, moved to the right outside the sentence boundary, where it is out of reach of the subject and object selection rules. An indefinite NP that has been shunted can undergo deletion. With the verb steal, for instance, the case that Fillmore has termed Source (see Fillmore 1970), is omissible. We can say Harry stole a watch or Harry stole a watch from his girl friend, where the "loser" or "victim" occupying the underlying Source role has been shunted and, in the former sentence, deleted, in the latter sentence, furnished with the preposition from. Although there are certain presuppositions that the two verbs do not share, rob enters into the same case frame as steal except that for it, the underlying Object NP is omissible while the Source is obligatorily expressed, e.g. Harry robbed his girl friend of a watch, Harry robbed his girl friend.

Whatever semantic difference there may be between (a) and (b) in the pairs (1)-(3) above does not concern us in this paper. I am

following Fillmore in his belief that the (b) sentences are like
the (a) sentences except that overt mention of the E has been
omitted in them. But whereas Fillmore's deletion of shunted
Experiencers applies only to indefinite NPs, I find that we also
need a rule in Norwegian that optionally deletes Experiencer NPs
referring to the speaker, i.e. occurrences of the 1st person
pronoun jeg ('I').

I shall argue in this paper that Experiencers in Norwegian
have a tendency to appear in surface structure as the subject of
a verb, SYNES, whose only function is that of supporting the
Experiencer NP syntactically. SYNES will have as its direct object
the sentence one of whose arguments was the E that was raised to
a new main clause by the SYNES Formation rule. If the Experiencer
NP refers to the speaker himself, we can either introduce the proper
prepositions to go with the E, or delete it, or apply SYNES Formation.
I assume that deleted Experiencers and Experiencers that have become
the subject of the "surface verb" SYNES have previously undergone
Shunting.

I find it convenient for my purpose first to consider the two
English verbs remind and resemble and compare their syntactic
behavior with that of their respective Norwegian equivalents, MINNE
(OM) and LIGNE.

Both Postal (1970) and Fillmore have dealt with these verbs
and the kinds of relationships that might be said to exist between
them. I shall summarize first Postal's position and then Fillmore's.

Postal associates the verb remind conceptually with somebody's
perceiving a similarity between two entities, that is, A perceives
that B is similar to C. Beside being similar to he speaks alterna-
tively of being like or resembling. To him, remind is a "surface
verb", a lexical item inserted after the operation of certain trans-
formations. Rather than perceive he needs an underlying predicate
with the properties of strike in his analysis of remind. Unlike
perceive, strike participates in the two transformational processes
of Subject Raising (optionally) and Psych Movement (obligatorily).
The latter rule is called Psych Movement by Postal because it applies
exclusively to psychological verbs, verbs that express an inner,
subjective experience. The underlying representation I strike that
Jerry resembles Mike can be transformed into That Jerry resembles
Mike strikes me by Psych Movement (the two arguments of strike
are interchanged) and then into It strikes me that Jerry resembles
Mike by Extraposition. Alternatively we can apply Subject Raising
first, to get I strike Jerry to resemble Mike (the subject of the
complement S is raised, to become object of the matrix S), and then
Psych Movement, yielding Jerry strikes me to resemble Mike, and
ultimately, by obligatory operations, Jerry strikes me as resembling
Mike. Another possibility is to let McCawley's prelexical rule of
Predicate Raising apply between Subject Raising and Psych Movement.
This creates a derived complex predicate strike-resemble which is
replaced by the lexical form remind. Then the argument that ends up
neither as subject nor as object in the surface structure will have
the preposition of put in front of it, and the result is Jerry

reminds me of Mike. Remind, which superficially seems to behave
in a unique way among English verbs, becomes quite "normal" if it
is analyzed deep-structurally as the Psych Movement predicate
strike plus a complement containing a "similarity predicate" like
similar, resemble or like. Postal points to a number of syntactic
properties that strike as being similar to and remind share.

Fillmore thinks that resemble and remind both have associated
with them the same three roles or cases, the Instrument (not in the
'implement' sense), the Object and the Experiencer. In the sentence
Jerry resembles Mike, the NP Jerry is the I, Mike is the O, and the
third, phonetically absent, argument is the E, which is understood
to be identified with the speaker of the sentence. According to
Fillmore, this sentence means roughly that Jerry as stimulus evokes
in the speaker memories of Mike. He argues that resemble belongs
to the class of verbs that obligatorily undergo Shunting. Eventually
the E will either appear as to me--To me, Jerry resembles Mike--or
the shunted case will be deleted. Remind does not undergo Shunting
but it has to undergo Psych Movement,[1] which in Fillmore's framework

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[1] There is, of course, another verb remind which involves an
Agent and is non-Psych Movement, as illustrated by Jerry reminded
me of the meeting at three o'clock.

---

means that the positions of the case destined to become subject of
the sentence and the one destined to become object are interchanged.
Since the deep case E of remind does not participate in the shunting
process, there is no such sentence as *To me, Jerry reminds of Mike,
or *Jerry reminds to me of Mike, or *Jerry reminds of Mike. The E
must be present as direct object even if its representative is
impersonal one, as in Jerry reminds one of Mike. Fillmore would say
that the former of the two sentences It seems to be a good idea,
It seems to me that it is a good idea has undergone Subject Raising
(of it), and that the E is (shunted and) omitted, the O case
anaphoric it now being the only candidate for the subject position,
while in the latter sentence, the that-clause O becomes subject and
is then obligatorily extraposed. Postal's claim is that these
sentences undergo Psych Movement, and that, in sentences with remind,
it is not remind that undergoes Psych Movement but the prelexical
predicate whose syntactic properties are those of the verb strike
in It strikes me that Jerry resembles Mike or Jerry strikes me as
resembling Mike.

Let us look at the following well-formed and ill-formed
Norwegian sentences:

(4) a. JERRY LIGNER MIKE   (lit.: Jerry resembles
                                      Mike)

     b. JEG SYNES JERRY LIGNER   (lit.: I think Jerry
         MIKE   resembles Mike)

(5) a. JERRY MINNER OM MIKE   (lit.: Jerry reminds of Mike)

   b. JERRY MINNER MEG OM MIKE   (lit.: Jerry reminds me of Mike)

   c. JEG SYNES JERRY MINNER   (lit.: I think Jerry
      OM MIKE   reminds of Mike)

   d. *JEG SYNES JERRY MINNER   (lit.: I think Jerry
      MEG OM MIKE   reminds me of Mike)

(5a) shows that unlike English <u>remind</u>, the Norwegian Psych Movement verb MINNE does not require its E argument to be mentioned. It seems that the Experiencer has been shunted and subsequently deleted in (5a) as well as in (4a). The difference between (4a) and (4b), and between (5a) and (5c) is that whereas Deletion of the E applies in the (a) sentences, it is SYNES Formation that applies after Shunting in (4b) and (5c). All the sentences (4a) - (5c) have the same meaning. (5d) is ungrammatical because the E appears twice, both as the subject of SYNES and as the derived object of MINNE.

At this point I think it may be a good idea to show which part of the meaning of <u>think</u> the verb SYNES covers. The sentence <u>I think Ed is easy to co-operate with</u> is ambiguous. It could mean that the speaker <u>believes</u> Ed is easy to co-operate with (he probably knows people who have co-operated with him) or it may be a personal judgment based on the speaker's own experience with Ed. Accentuation could be a disambiguating factor in this case. Relatively more stress on <u>think</u> favors the 'belief' interpretation.

In Norwegian the two interpretations require different verbs, TRO ('believe') and SYNES. It is easy to find environments in which only one of them makes sense.

(6) $\begin{Bmatrix} ??\text{TROR} \\ \text{SYNES} \end{Bmatrix}$ DU DET FOTOGRAFIET DU NETTOPP SÅ LIGNER MEG?

('Do you think the photo you saw right now resembles me?')

(7) $\begin{Bmatrix} \text{TROR} \\ *\text{SYNES} \end{Bmatrix}$ DU DU KOMMER TILBAKE I MORGEN?

('Do you think you'll come back tomorrow?')

Semantically the verb SYNES appears to be a chameleon. Consider the sentences (8) - (12).

(8) a. JEG SYNES BERGLJOT ER SVAERT PEN
       (lit.: I think B. is very pretty)

    b. TORGEIR SYNTES IKKE NOEN AV KANDIDATENE VAR AKSEPTABLE
       (lit.: T. thought not any of the candidates were acceptable)

(9) a. JEG SYNES JEG HØRTE SKRITT
       (lit.: I think I heard footsteps)

(9) b. JAN SYNTES HAN SÅ NOE SOM BEVEGET SEG I BUSKENE
(lit.: J. thought he saw something that moved
(itself) in the bushes)

(10) JEG SYNES DU SER BLEK UT
(lit.: I think you look pale (out))

(11) a. JEG SYNES DET SER UT SOM VI FÅR REGN
(lit.: I think it looks (out) if we get rain)
b. ARNLJOT SYNTES DET VIRKET SOM OM ELVIRA VAR BEDRØVET
(lit.: A. thought it seems as if E. was sad)

(12) a. BILLIE SYNES DET ER IRRITERENDE AT ALLE TAR HENNE
FOR EN MANN
(lit.: B. thinks it is irritating that everybody
takes her for a man)
b. JEG SYNES DET ER INTERESSANT Å PRØVE EKSOTISK MAT
(lit.: I think it is interesting to try exotic
food)

(8a) expresses the speaker's personal judgment or opinion, and
(8b) reports the opinion of some other person. Paraphrases of these
sentences might start with a phrase like ETTER MIN/TORGEIRS OPPFATNING
(lit.: according to my/Torgeir's conception) instead of JEG SYNES/
TORGEIR SYNTES.

In (9a) and (9b) we find the perception verbs 'hear' and 'see',
respectively. There is subject-subject coreference in both sentences.
Subjects of perception verbs are definitely Experiencers. But if
the subjects of HØRTE in (9a) and SÅ in (9b) are Experiencers, we
would not expect there to be any SYNES part (henceforth called the
Experience Preface) in these sentences, as we cannot both raise the
E by the SYNES Formation rule and keep it as the subject of HØRTE or
SÅ. The double occurrence of E in (9) is, I believe, explained by
the fact that in this (and only this) kind of sentence, SYNES and TRO
are virtually synonymous. The main clause of these sentences is not
really the derived Experience Preface. (9a) means 'I heard something
that I believe to be footsteps'. (9b) is ambiguous in that it can
be a report either of Jan's stating his belief that there was some-
thing which was moving in the bushes, or a report of his stating that
he saw something moving there (in which case the speaker of (9b)
assumes the right to consider the possibility that one cannot be
absolutely sure that there was anything there).

The verb SE UT ('look') in (10) never has an E subject. This
sentence means exactly the same as DU SER BLEK UT. The additional
Preface is merely an overt indication that the perceiving person is
the speaker. Whereas the E argument in (10) could have been deleted,
it is absolutely necessary to retain the E of a sentence like BIRGER
SYNES JEG SER BLEK UT (lit.: Birger thinks I look pale (out)).
Only JEG (Experiencer) SYNES JEG (Object) SER BLEK UT is reducible
to JEG SER BLEK UT.

SE UT in (10) and SE UT in (11a) are different lexical verbs.
The former verb does not take a complement; the latter is a Psych
Movement verb in the Postalian sense but not in the Fillmorean
sense. If the E undergoes Shunting but not SYNES Formation, the
final result will be DET SER UT FOR MEG (lit.: for me) SOM (OM)
VI FÅR REGN. If SYNES Formation applies in addition to Shunting,
the result is (11a). Since the E is the speaker, omission of this
role would be a third possible realization. VIRKE in (11b) means
approximately the same as SE UT, but it is more common than SE UT
when there is no reference to the outer appearance of things. One
paraphrase of (11b) is DET VIRKET PÅ ARNLJOT (lit.: on A.) SOM OM
ELVIRA VAR BEDRØVET.

The adjectival predicates IRRITERENDE and INTERESSANT of the
two sentences (12) take an E and a sentence complement as arguments.
(12a) has the paraphrase DET IRRITERER BILLIE AT ALLE TAR HENNE FOR
EN MANN (lit.: It irritates B. that everybody takes her for a man).
IRRITERE is a Psych Movement verb, like English irritate. Because
there is coreference between the Experiencer NP of INTERESSANT and
the Agent NP of PRØVE in the complement sentence, (12b) has undergone
the cyclic rule of Equi-NP deletion.[2] If the Experience Preface were

---

[2]Notice that if the deep structure of (12b) is something like

$$[\text{I interest } [\text{I try } [\text{I eat exotic food}]]]_S$$

then it is Equi that has applied here, not Super Equi (see Grinder
1970, Neubauer 1970, for a discussion of the Super Equi-NP deletion).

---

omitted, the E could also be interpreted as an indefinite NP.

Except in the two sentences (9), in which SYNES is equivalent
to TRO, SYNES has no kind of independent meaning in (8) - (12).
The subjective judgment which it seems to convey in (8) can be
attributed to the fact that the statement in (8a) and Torgeir's
statement referred to in (8b) are both evaluative, even without the
Experiencer Preface. JEG SYNES adds nothing semantically in (8a).
In (8b), TORGEIR SA ('said') could replace TORGEIR SYNTES without
affecting the meaning.

The Experience Preface is simply the overt sign that what is
expressed in the complement of this derived main clause is somebody's--
i.e. the Experiencer's--subjective opinion or somebody's sensation.

For most Norwegian Psych Movement verbs, there appears to be a
non-Psych Movement adjectival counterpart that tolerates the Experiencer
Preface or, if the E is the speaker or if it is indefinite, deletion.
If neither of those two rules operates, the Preposition Selection
rule will have to apply. Consider (13) - (18).

(13) (JEG SYNES) DET ER ERGERLIG = DET ERGRER MEG =
           DET ER ERGERLIG FOR MEG
      (lit.: (I think) it is annoying = It annoys me =
          It is annoying for me)

(14) (JEG SYNES) DET ER FRISTENDE = DET FRISTER MEG = DET
       ER FRISTENDE FOR MEG
       (lit.: (I think) it is tempting = It tempts me = It
       is tempting for me)

(15) (JEG SYNES) DET ER OVERRASKENDE = DET OVERRASKER MEG
       = DET ER OVERRASKENDE FOR MEG
       (lit.: (I think) it is surprising = It surprises me
       = It is surprising for me)

(16) (JEG SYNES) DET ER SKUFFENDE = DET SKUFFER MEG = DET
       ER SKUFFENDE FOR MEG
       (lit.: (I think) it is disappointing = It disappoints
       me = It is disappointing for me)

(17) (JEG SYNES) DET ER SKREMMENDE = DET SKREMMER MEG =
       DET VIRKER SKREMMENDE PÅ MEG
       (lit.: (I think) it is frightening = It frighten me
       = It appears frightening on me)

(18) (JEG SYNES) DET ER FORUNDERLIG = DET FORUNDRER MEG =
       DET VIRKER FORUNDERLIG PÅ MEG
       (lit.: (I think) it is amazing = It amazes me = It
       appears amazing on me)

These data seem to suggest that Psych Movement could be a rule which
is postlexical rather than prelexical as argued by Postal. The general
rule is that Psych Movement and Shunting are mutually exclusive and
that SYNES Formation can apply just in case Shunting has already
applied.

    There is unfortunately one exception to this rule, namely MINNE.
Consider again the sentences (4) and (5)

(4) a. JERRY LIGNER MIKE   (lit.: Jerry resembles
                                       Mike)
     b. JEG SYNES JERRY LIGNER   (lit.: I think Jerry
         MIKE   resembles Mike)

(5) a. JERRY MINNER OM MIKE   (lit.: Jerry reminds
                                       of Mike)
     b. JERRY MINNER MEG OM MIKE   (lit.: Jerry reminds
                                       me of Mike)
     c. JEG SYNES JERRY MINNER   (lit.: I think Jerry
         OM MIKE   reminds me of Mike)
     d. *JEG SYNES JERRY MINNER   (lit.: I think Jerry
         MEG OM MIKE   reminds me of Mike)

(5a) shows that MINNE undergoes Psych Movement as opposed to LIGNE.
However, if MINNE were a Psych Movement verb, we would have expected
the non-existence of (5a) and (5c), but those sentences are perfectly
grammatical. Perhaps this problem is solved if we allow there to be

two lexical verbs MINNE in Norwegian, one that undergoes Psych
Movement and one that undergoes Shunting and SYNES Formation.[3]

---

[3]MINNE would not be the only example of a pair of this kind
in Modern Norwegian. The lexical item SE UT in sentence (11a),
whose E case NP was shunted there, has a Psych Movement counterpart
that is used mostly facetiously or ironically. Whereas (JEG SYNES)
DET SER UT SOM OM DU HAR FEBER = DET SER UT FOR MEG SOM OM DU HAR
FEBER really means what it says, namely 'It looks as if you have
fever', the sentence DU SER MEG UT TIL Å HA FEBER (lit.: You look
me out to to have fever) might be said to somebody who looks very
fit. Here Subject Raising applied prior to Psych Movement.

Postal's strike-resemble analysis does not seem to work for
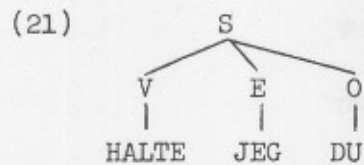Norwegian. (19) is grammatical (and guaranteed natural).

> (19) DET SLÅR MEG AT JERRY MINNER OM MIKE
>   (lit.: It strikes me that J. reminds of M.)

Even though the question remains to be answered why Psych Movement
MINNE is the only Norwegian Psych Movement verb that is associated
with as many as three arguments, I think it would be preposterous to
argue that a more "remote" representation of (19) should be something
like this: DET SLÅR MEG AT JERRY SLÅR MEG Å LIGNE MIKE. SLÅ corresponds
to English strike because it means the same and shares with it the
sense illustrated by TOM SLÅR ALLTID BARE EN GANG ('Tom always strikes
only once'), but the English and the Norwegian verb differ in their
syntactic behavior since SLÅ is non-Subject Raising, and there is no
other Psych Movement verb in Norwegian that can be said to play the
role that Postal assigns to strike. Since strike and SLÅ do not
share the syntactic properties that were crucial for Postal, I am
not happy with an analysis that derives occurrences of the Norwegian
verb MINNE by the strike-resemble analysis.

If Psych Movement is a postlexical rule, how are we to analyze
English remind sentences? Most people seem to agree that x reminds me
of y means x makes me think of y, so I suggest the adoption of a
modified version of Fillmore's case analysis mentioned at the beginning
of this paper: x is the Instrument which brings it about that I, the
Experiencer, am thinking of the Object y.

My claim then is that the underlying structures of an evaluative
statement like BERGLJOT ER PEN (lit.: B is pretty) and an exclamation
like JEG SYNES DU HALTER (lit.: I think you limp) are roughly like
(20) and (21), respectively.

(20)
```
            S
       ┌────┼────┐
       V    E    O
       │    │    │
      PEN  JEG  BERGLJOT
```

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(21)

```
              S
        ┌─────┼─────┐
        V     E     O
        │     │     │
      HALTE  JEG    DU
```
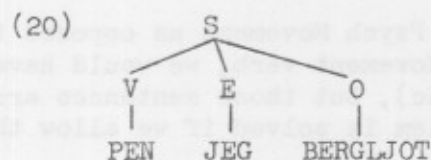
The E of (20) undergoes the Shunting rule, which means that this NP
is Chomsky-adjoined to the rest of the sentence, and as it refers to
the speaker of the sentence, it is subsequently deleted. After the
E of (21) has been shunted, the SYNES Formation rule (22) creates a
new main clause.

$$(22) \quad [\ [\ \underline{X} \ ] \ \underline{E} \ ] \implies [\quad \text{SYNES} \ 2[\ [\ 1 \ ] \ ]$$
$$\quad\quad S' \ S \ 1 \ 2 \quad\quad\quad\quad\quad\quad S' \ S$$

The other transformations intimately connected with the derivation
of Norwegian sentences whose surface main verb is SYNES are Shunting
and Shunted NP Deletion, or more precisely, the optional part of
Shunted NP Deletion, which concerns Experiencer NPs referring to the
speaker;[4] the deletion of indefinite NPs is obligatory, as it is in

---

[4]It is possible that this sub-type of Shunted NP Deletion
should be considered a separate rule, different from the rule of
Shunted Indefinite Deletion that Fillmore postulated for English.

English. These three rules all abhor the Psych Movement transformation.

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The Case for Cash

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Introduction

In his paper "On the Semantic Analysis of Verbs of Exchange,"
Richard DeArmond claims that certain verbs form 'co-occurrence
relationships' with each other, i.e. they have "a common underlying
base form, since they include the same semantic selectional
restrictions." (p. 2). Such a relationship holds, he claims, between
such verbs of exchange as buy and sell, as well as among other
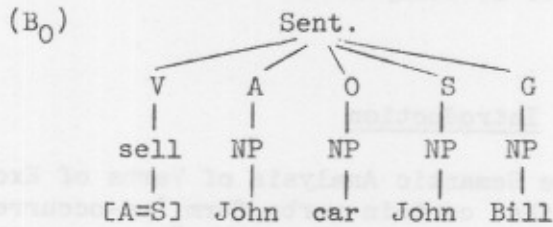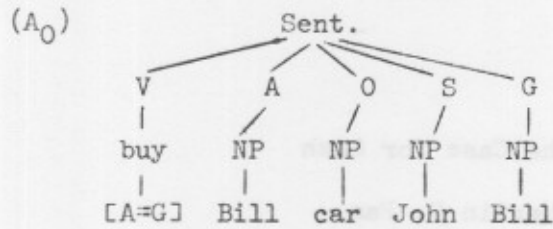similar pairs.

The only way to support this claim is to show that the two
members of such an exchange-verb pair are completely symmetrical;
otherwise, each verb would have to be treated as a separate lexical
entry with its own description. This, in fact, is the crucial
distinction between DeArmond's generative semantic approach and
Fillmore's case grammar. Fillmore currently believes that verbs like
buy and sell cannot be reduced to a common set of semantic primes
which would predict their various syntactic peculiarities.

In this paper I will explore some of the syntactic peculiarities
of exchange verbs from the case grammar point of view. After deriving
the sentences which case grammar handles easily (e.g., John sold a
car to Bill), I will discuss indirect object constructions in relation
to equivalent sentences without the preposition to (e.g., John sold
Bill a car), and show how "benefactives" might be handled. More
important, however, will be the discussion of Exchange NP's (Bill
bought the car for $100), for these NP's test the very validity of the
case grammar framework. Finally, I will make some tentative proposals
about the relationship of exchange verbs in general to the theory of
case grammar.

As now conceived by Fillmore, verbs like buy and sell are verbs
of motion in which there are at least four underlying variables:
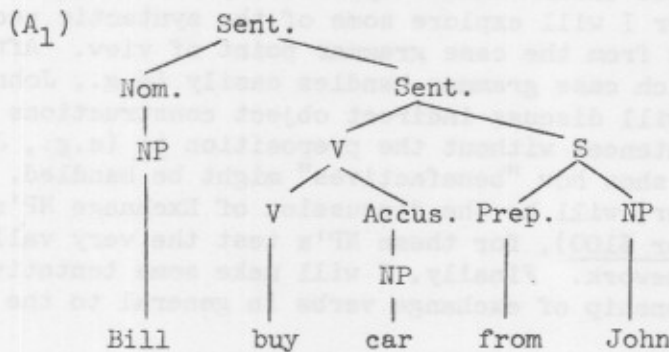
> Agent--someone who is responsible for the motion
> Object--the thing which moves
> Source--where the Object starts out from
> Goal--where the Object ends up

These "cases" are concatenated with the verb as follows:

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(A₀)

```
                    Sent.
        ┌──────┬──────┼──────┬──────┐
        V      A      O      S      G
        │      │      │      │      │
       buy    NP     NP     NP     NP
        │      │      │      │      │
      [A=G]  Bill   car   John   Bill
```

(B₀)

```
                    Sent.
        ┌──────┬──────┼──────┬──────┐
        V      A      O      S      G
        │      │      │      │      │
      sell    NP     NP     NP     NP
        │      │      │      │      │
      [A=S]  John   car   John   Bill
```
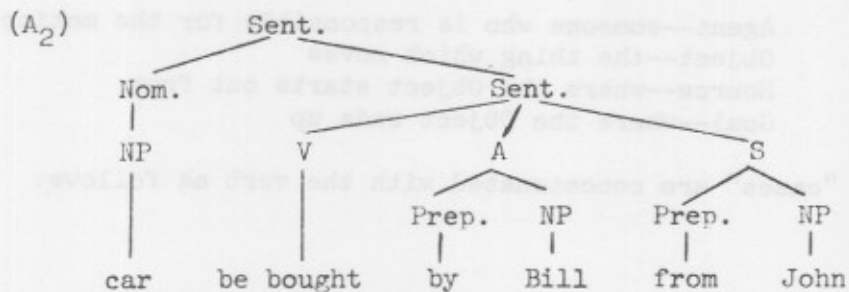
The set of ordered rules 1.-7. will yield the surface structures in
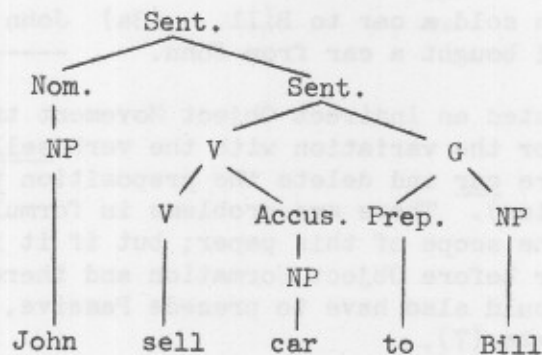(A₁ and (A₂) and (B₁) and (B₂).

    1. Required coreference deletion
    2. Accusative marking
    3. Passive (optional)
    4. Nominative marking
    5. Subject formation
    6. Object formation (if the Passive is not applied)
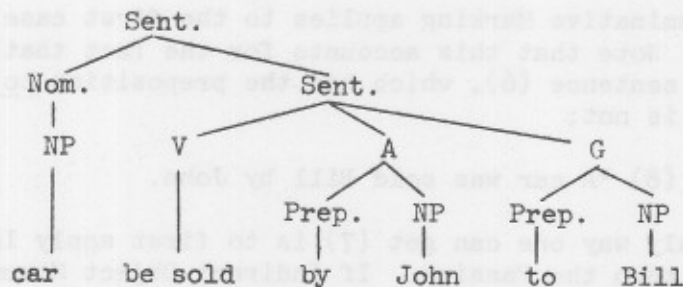   7. Preposition selection

(A₁)

```
                    Sent.
        ┌────────────┴────────────┐
       Nom.                      Sent.
        │              ┌──────────┼──────────┐
       NP              V        Accus.      Prep.      NP
        │              │          │           │        │
        │              V          NP          │        │
        │              │          │           │        │
       Bill          buy        car         from     John
```

(1) Bill bought a car from John.

(A₂)

```
                        Sent.
        ┌────────────────┴────────────────┐
       Nom.                              Sent.
        │              ┌──────────┬────────┴──────────┐
       NP              V          A                   S
        │              │      ┌───┴───┐           ┌───┴───┐
        │              │    Prep.    NP          Prep.    NP
        │              │      │       │           │       │
       car         be bought  by    Bill        from    John
```

(2) A car was bought by Bill from John.

```
         (B₁)            Sent.
                   ┌───────┴───────┐
                 Nom.            Sent.
                   │        ┌──────┼──────┐
                  NP        V      │       G
                   │     ┌──┴──┐   │    ┌──┴──┐
                   │     V   Accus. Prep.    NP
                   │     │     │     │       │
                   │     │    NP     │       │
                   │     │     │     │       │
                 John   sell  car   to     Bill
```

$$(3)\quad \text{John sold a car to Bill.}$$

```
         (B₂)            Sent.
                   ┌───────┴───────┐
                 Nom.            Sent.
                   │        ┌──────┼──────────┐
                  NP        V      A           G
                   │        │   ┌──┴──┐     ┌──┴──┐
                   │        │ Prep.  NP   Prep.   NP
                   │        │   │     │     │      │
                  car    be sold by  John  to    Bill
```

$$(4)\quad \text{A car was sold by John to Bill.}$$

(Note that it is not clear where the Passive downgrades the Agent to,
so that for (2) and (4) we could also get:

     (5)   A car was bought from John by Bill.
     (6)   A car was sold to Bill by John.   )

At this point we can establish the following case frames for <u>buy</u>
and <u>sell</u>:

       Buy ≠ (__ A O S G)   Sell ≠ (__ A O S G)
         (A=G)   (A=S)
         (S=omissible)   (G=omissible)

(The omissibility feature, which is noted by both Fillmore and DeArmond,
means that with these verbs the Agent and Direct Object must be
specified, though any other term may be absent: <u>Bill bought a car</u>.
<u>John sold a car</u>. So, disregarding certain aspectual features, the
following sentences are no good: <u>Bill bought from John</u>. <u>John sold
to Bill</u>. And, noun phrases which appear as the result of Indirect
Object Movement (see below) can only be interpreted as Direct Objects:
<u>Bill bought Alice</u> (<u>for</u> Alice). <u>John sold Bill</u> (<u>to</u>).)

    One of the things which DeArmond notes about <u>buy</u> and <u>sell</u> is that
you get an optional indirect object construction with the latter, but
not with the former:

(3) John sold a car to Bill.   (3a) John sold Bill a car.
(1) Bill bought a car from John.   ----------------------

Fillmore has suggested an Indirect Object Movement transformation in order to account for the variation with the verb <u>sell</u>. This would place <u>to Bill</u> before <u>car</u> and delete the preposition <u>to</u> (or simply block Preposition Selection). There are problems in formulating this rule which are beyond the scope of this paper; but if it is workable, it would have to occur before Object Formation and thereby block its application. It would also have to precede Passive, or there would be no way to generate (7),

(7) Bill was sold a car by John.

because Nominative Marking applies to the first case element following the verb. Note that this accounts for the fact that (in my dialect, at least) sentence (6), which has the preposition <u>to</u>, is grammatical, while (8) is not;

(8) *A car was sold Bill by John.

for the only way one can get (7) is to first apply Indirect Object Movement, then the Passive. If Indirect Object Movement does not occur, then the Passive will yield (6).

Theoretically, Indirect Object Movement is also possible with <u>buy</u>; but since Required Coreference Deletion gets rid of the indirect object, the former transformation may apply vacuously unless the sentence contains a Benefactive:

(9) Bill bought a car for Alice.
(10) Bill bought Alice a car.

Let us suppose that there is an independent case, B. Then these two sentences may be derived as follows:

(A_3)

```
                     Sent.
        ┌───────┬───────┬───────┬───────┐
        V       A       O       G       B
        │       │       │       │       │
       buy      NP      NP      NP      NP
      [A=G]     │       │       │       │
              Bill     car     Bill   Alice
```
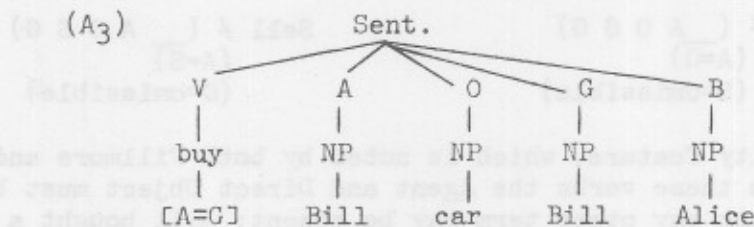
1. Required coreference deletion
2. Accusative marking
3. Indirect object movement (optional)
4. Passive (optional)
5. Nominative marking
6. Subject formation
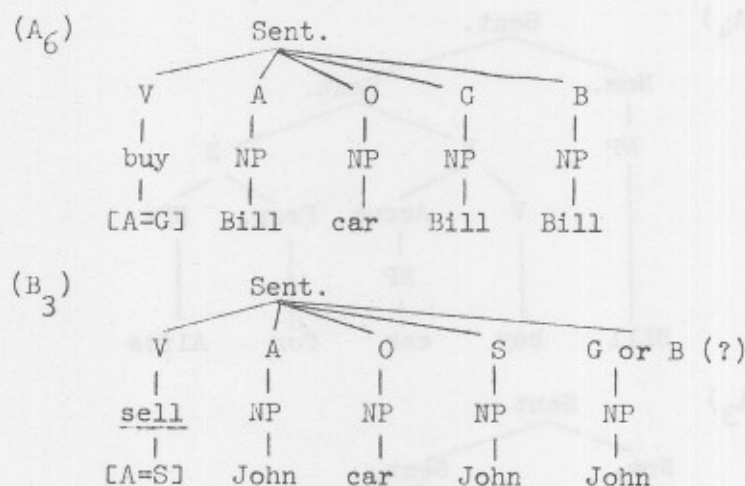7. Object formation
8. Preposition selection

(A_4)

```
                        Sent.
              ┌───────────┴───────────┐
            Nom.                    Sent.
             │            ┌───────────┼───────────┐
            NP           V                         B
             │      ┌─────┴─────┐           ┌──────┴──────┐
             │      V         Accus.       Prep.         NP
             │      │           │            │            │
             │      │          NP            │            │
           Bill    buy         car          for         Alice
```

(A_3)

```
                     Sent.
           ┌───────────┴───────────┐
         Nom.                    Sent.
          │            ┌───────────┼───────────┐
         NP           V            B          Accus.
          │           │            │            │
          │           │           NP           NP
          │           │            │            │
        Bill         buy         Alice         car
```
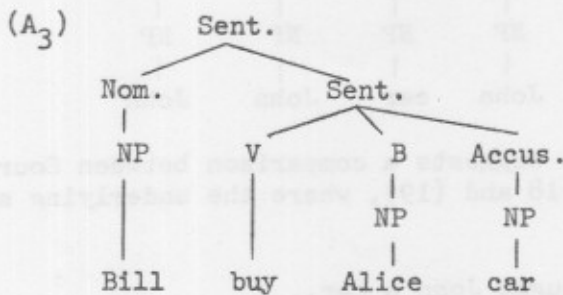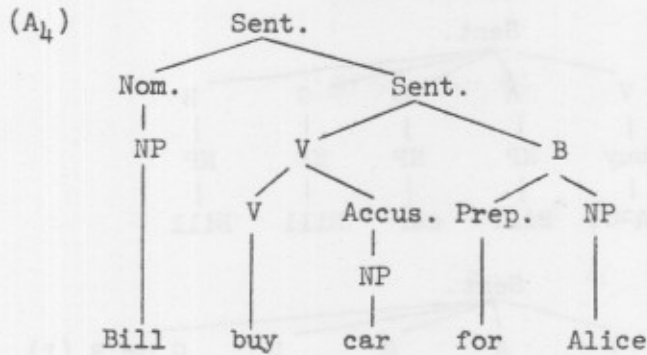
Note that the same constraint on the occurrence of the preposition to is valid for the preposition for. Thus, Indirect Object Movement is an argument for Benefactive being a Goal case of some type.

Some additional facts about the relation of Benefactive to Goal can be deduced from the following sentences:

(11) John sold $\begin{Bmatrix} \text{a car to Bill} \\ \text{Bill a car} \end{Bmatrix}$ for Alice.

(12) *John sold a car for Alice (on one reading)
(13) John sold Bill a car for Alice.
(14) *John sold Alice a car to Bill.
(15) Alice was bought a car by Bill.

(16) *Alice was sold $\begin{Bmatrix} \text{a car to Bill} \\ \text{Bill a car} \end{Bmatrix}$ by John.

(17) *Bill bought himself a car for Alice.

Benefactive must co-occur with Goal (which normally remains in the surface structure of sell, but is obligatorily deleted in the surface structure of buy) (sentences (11) and (12)). Goal must occur first in the underlying structure, and it is the case which may undergo Indirect Object Movement (sentences (13) and (14)). Consequently, you do not get Benefactive as the subject of the Passive if a Goal is present (sentences (15) and (16)). Only when the Benefactive is coreferential with the Goal do you get a reflexive (sentence (17)).

(A note on reflexives. Cf., Bill bought a car for himself. Bill bought himself a car. Bill bought Bill a car. The reflexive transformation precedes subject formation; this preserves the well-known constraint on its application: John sold a car to himself. John sold himself a car.
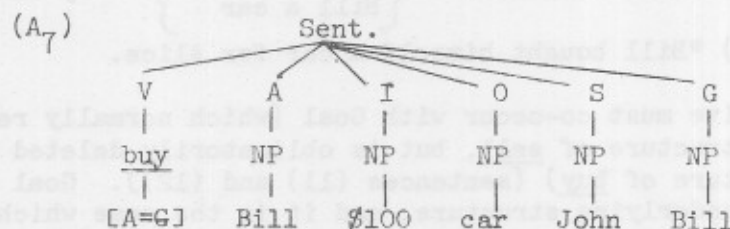
```
(A₆)                    Sent.
          _____|_____
          |       |       |      |      |
          V       A       O      G      B
          |       |       |      |      |
         buy      NP      NP     NP     NP
          |       |       |      |      |
        [A=G]    Bill    car    Bill   Bill
```

```
(B₃)                    Sent.
          _____|_____
          |       |       |      |           |
          V       A       O      S      G or B (?)
          |       |       |      |           |
        sell      NP      NP     NP          NP
          |       |       |      |           |
        [A=S]    John    car    John        John          )
```

The foregoing also suggests a comparison between Source and
Benefactive. Compare (18 and (19), where the underlying sentence
is (20)

      (18) *Bill bought John a car.
      (19) *John was bought a car by Bill.
      (20) Bill bought a car from John.

The sentences with John in subject or direct object position must
be construed as deriving from (21), which again suggests that
Benefactives are like Goals and as such are available for Indirect
Object Movement if the Goal is not expressed.

      (21) Bill bought a car for John.

The foregoing analysis poses no insurmountable problems to the
theory of case grammar. However, the structures underlying the two
verbs in question have to be expanded in order to include another
term, which expresses that, in exchange for which the Object was
transferred. So we might now want to represent the verb buy, for
example, as follows:

```
(A₇)                         Sent.
          _____|_____
          |      |      |       |       |        |
          V      A      I       O       S        G
          |      |      |       |       |        |
         buy     NP     NP      NP      NP       NP
          |      |      |       |       |        |
        [A=G]   Bill   $100    car     John     Bill
```

Possible justifications for considering the NP $100 as an Instrument
are:
1. You can get the instrumental preposition with in a sentence like
(22).

      (22) Bill bought a car with $100.

Some people might consider this sentence ungrammatical, or, at best, "funny". It may be that there is some sort of complementary distribution here; <u>for</u> generally occurs when we state the amount involved in a transaction; <u>with</u> is necessary when we are pointing out the medium of exchange, as in the following examples:

(23) I bought it $\begin{Bmatrix} \text{*for} \\ \text{with} \end{Bmatrix}$ a check (not cash).

(24) I bought it $\begin{Bmatrix} \text{*for} \\ \text{with} \end{Bmatrix}$ the $100 I earned last year.

(Compare the following distinction between <u>for</u> and <u>with</u>:

(25) She bought his loyalty with a kiss.
(26) She bought his loyalty for a kiss.

(25) suggests that SHE OFFERED to kiss him if we would be loyal to her, and HE ACCEPTED. ("kiss" used as an instrument). (26) suggests that HE DEMANDED a kiss from her in return for his loyalty, and SHE ACCEPTED. ("kiss" used as the amount of payment). The same distinction obtains in the following sentences:

(27) He sold his loyalty with a kiss.
(28) He sold his loyalty for a kiss.

There seems to be some sort of directionality which is independent of the verbs <u>buy</u> and <u>sell</u>, but which is associated with the prepositions <u>for</u> and <u>with</u>.)

2. You can paraphrase with the instrumental verb <u>use</u>:

(29) Bill used a check (and not cash) to buy the car (with).

Note that the sentence (30) implies that he had more than $100, but that $100 was the amount that he allotted for the purchase of the car.

(30) Bill used $100 to buy the car (with).

3. If the Agent is omitted, the NP $100 can become the subject of the sentence (as is normal in sentences containing an Instrument):

(A_8) Sent.

```
              Sent.
         ┌──────┼──────┐
         V      I      O
         │      │      │
         │      NP     NP
         │      │      │
        buy   $100    car
```
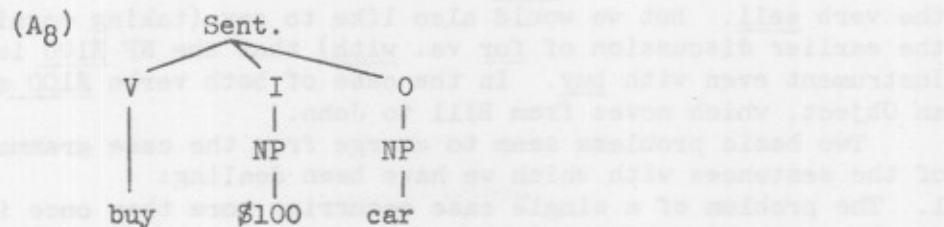
1. Accusative marking
2. Nominative marking

3. Subject formation
4. Object formation

(A₉)

$$(A_9)$$

```
                    Sent.
              ┌───────┴───────┐
            Nom.              V
              │         ┌──────┴──────┐
             NP         V          Accus.
              │         │             │
            $100       buy          car
```
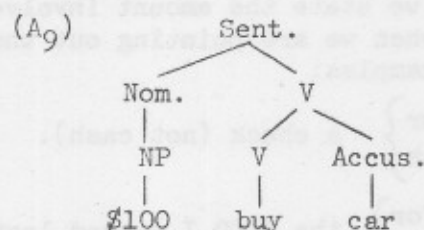
And you also get the Benefactive here:

(31) $100 bought us this car.

But once again certain problems arise. If, in (A₇), the Agent
is downgraded by the Passive, then you get (32), but what you want to
get is (33).

(32) *$100 was bought $\left\{\begin{array}{l}\text{by Bill a car from John}\\\text{a car by Bill from John}\\\text{a car from John by Bill}\end{array}\right\}$.

(33) A car was bought by Bill from John for $100.

Note that this seems to be a general fact about instruments:

(34) Bill felled the tree with an axe.
(35) *An axe was felled by Bill the tree.

It seems that you need some sort of "Instrument Shunting" rule, in
order to prevent the Instrument from becoming the subject of a Passive
sentence.
    If the verb buy appears to involve a certain amount of complication,
the verb sell seems to present an insurmountable difficulty. Here the
NP $100 certainly cannot be taken as an Instrument:

(36) *John sold Bill a car with $100.
(37) *John used $100 to sell Bill a car (with).
(38) *$100 sold Bill a car.

These prove that the NP $100 is not an Instrument when associated with
the verb sell. But we would also like to say (taking cognizance of
the earlier discussion of for vs. with) that the NP $100 is not an
Instrument even with buy. In the case of both verbs $100 seems to be
an Object, which moves from Bill to John.
    Two basic problems seem to emerge from the case grammar analysis
of the sentences with which we have been dealing:
1. The problem of a single case occurring more than once in the same
simple sentence. We would like to say that
    a. Both NP's in a verb of exchange (e.g., car and $100 in the
data presented in this paper) are Objects, for the reasons given in

the preceding paragraph.

    b. Both Goal and Benefactive are instances of the same role notion, that of recipient of an Object.

2. The problem of multi-directionality in a single (simple) sentences.

    a. In sentences where you have a monetary amount and an exchange object, the Source of the money is the same as the Goal of the Object; and the Goal of the money is the same as the Source of the Object.

    b. In sentences with a Benefactive, there is the more complicated problem that the Goal of the Object with respect to the Source is also the Source of the Object with respect to the Benefactive, which is the ultimate Goal of the Object (but not the Source of anything).

    I would like to suggest a tentative explanation for these problems. (The Benefactive and the monetary term both originate in a higher or at least a coordinate, sentence, and appear as Residual Terms in the underlying structures we have posited so far. (Perhaps it would be better not to specify which of the Objects is a Residual Term. See below.) In the following diagrams, the verbs buy & sell and pay & receive have been grouped together, because they have the same Focus of Direction and thus require the same Residual Terms.

(C)   (Residual O) for $100
                (Residual G) for Alice

(D)   (Residual O) for car
                (Residual G) *for Alice
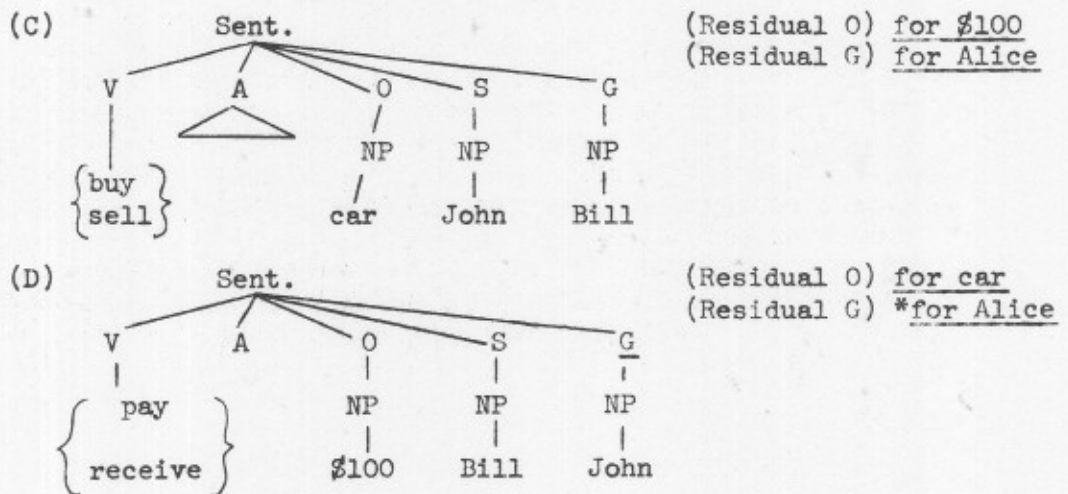
(I have no satisfactory explanation for the problem of the Residual Goal on (D).)

    What I mean by Focus of Direction is that with the pair buy & sell, the Source and the Goal remain the same; whereas with pay & receive the NP's governed by these roles is reversed. What differentiates the first member of each pair from the second member is the choice of Agent. Buy and receive select the Goal as Agent, while sell and pay select the Source as Agent. This suggests that we might want to have a dummy Agent with a copying rule, as has been suggested to account for Spanish intransitive reflexives such as JUAN SE MURIO 'John died'. Both the copying rule and the reflexive precede subject-formation, so there would seem to be no problem with this analysis.

The solutions discussed (rather sketchily) here are admittedly somewhat vague. This is perhaps due to the complexity of the material. There are many verbs of exchange, such as <u>lend</u>, <u>borrow</u>, <u>pawn</u>, <u>redeem</u>, <u>rent</u>, <u>lease</u>, <u>disburse</u>, <u>reimburse</u>, <u>purchase</u>, <u>cash</u> (a check), <u>fine</u>, <u>earn</u>, <u>forfeit</u>, <u>extort</u>, <u>blackmail</u>, etc. The semantic and syntactic relations among all these verbs requires much more study before any comprehensive solution to their problems can be properly expressed and properly defended.

Portuguese Reflexivization and Some Related Problems*

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The purpose of this paper is to present a few suggestions for the analysis of Portuguese reflexives from the viewpoint of 'case grammar'.[1]

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[1]As developed by Fillmore in a number of publications. See especially Fillmore (1966, 1967, 1968a, 1968b, 1970).

I will take as point of departure the proposals concerning the analysis of Spanish reflexives made by Ronald Langacker (1970) in his review of Mark Goldin's Spanish Case and Function and introduce some ideas of my own.

In the review, Langacker points out that in Goldin's analysis the se in sentences (1) through (3) are introduced by three different rules.

(1)	se mató	'he killed himself'
(2)	se quejó	'he complained'
(3)	se trabajó	'one worked'

Thus, Langacker observes, sentence (1) is analysed by Goldin as an instance of 'true reflexive' which is inserted by the following rule:

(4)   True reflexives
When there are identical noun phrases within a Sentence, one of which is the subject, the one which is not the subject takes the form of a reflexive pronoun.

                (Goldin's rule 69)

Sentence (2) is said to contain an 'automatic reflexive' which is inserted by

> (5) Automatic reflexive
> If a verb is present which requires a reflexive pronoun, one is inserted.
> (Goldin's rule 81)

Finally, sentence (3) is analysed as an instance of 'impersonal' sentences and the _se_ is inserted by the following rule:

> (6) Reflexive pronoun insertion
> If an Agent is not present but potentially could be, and if 7b[2] did not apply, OR if an Agent is not potentially present but a Dative is potentially present with a verb that permits Dative subjects, then a reflexive pronoun is inserted.
> (Goldin's rule 22)

---

[2]This rule states: "If no Agent is present but an Instrumental is, the Instrumental becomes the Subject if there is a direct object..."

Langacker claims that the rules in (5) and (6) are superfluous and offers an alternative analysis in which all the three sentences receive a 'unified treatment',[3] His proposal consists of:

---

[3]Goldin's book came to my hands only recently. Since I could not yet dedicate the attention that the book actually deserves, I will not enter into the details of the argument.

> (7) a. a rule for Subject Choice in which the choice is based on a 'case hierarchy' as proposed by Fillmore. The rule is described as involving two operations:
>   (i) copying
>   (ii) deletion:
> b. a rule of Object Substitution which states that 'a copy of an inanimate Objective may be substituted for an unspecified Agent or Dative in subject position';
> c. a Passive rule described as 'something similar to the rule in Chomsky (1957)';
> d. a Reflexive rule identical to the one mentioned in (4);

In addition, there is a derivational constraint:
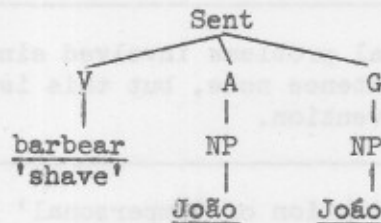
e. 'Constraint on derivations
   If a deep structure contains an unspecified
   Agent or Dative, then any surface structure
   derived from it must differ in some way from
   the surface structure that would be derived
   from the corresponding deep structure lacking
   the unspecified element' (p. 178-9)

Let us now pass to the examination of the effect of these rules
to the case of Portuguese.

The derivation of 'true reflexives' such as (8) from the deep
structure (9) is straightforward.

(8) João se barbeou   'John shaved himself'

(9)

```
                    Sent
          ┌──────────┼──────────┐
          V          A          G
          │          │          │
       barbear      NP         NP
       'shave'       │          │
                    João       João
```
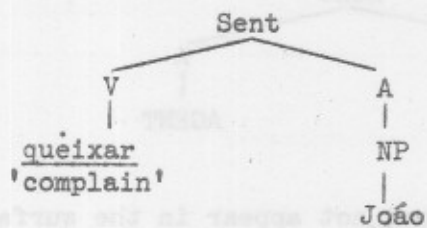
The <u>Reflexivization</u> rule (7d) would apply to (9) and derive (8).
Consider now the treatment of 'automatic reflexives' as in (10).

(10) João se queixou   'John complained <u>se</u>'
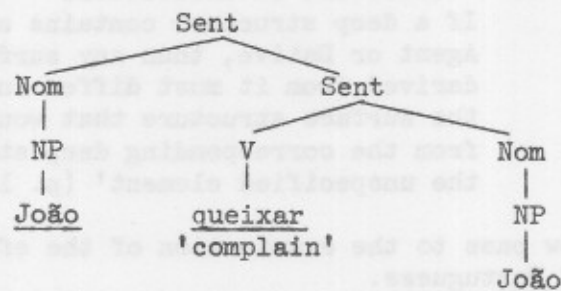
Its deep structure is something like (11).

(11)

```
                 Sent
          ┌────────┼────────┐
          V                 A
          │                 │
       queixar              NP
      'complain'            │
                          João
```

Since <u>João</u> is the only case to appear in (11), after <u>Nominative
Marking</u> has applied, Subject Formation (= Longacker's <u>Subject Choice</u>)
applies next. As described in (7a), this rule involves two steps:
(i) <u>copying</u> and (ii) <u>deletion</u>. Application of the first step of the
rule would yield the intermediary structure (12).[4]

---

[4] I am assuming with Fillmore that a copy of the <u>Nominative</u>
case is Chomsky-adjoined to the Sentence node.

(12)

```
                    Sent
           ┌─────────┴─────────┐
          Nom                 Sent
           │            ┌──────┴──────┐
          NP            V            Nom
           │            │             │
         João        queixar         NP
                     'complain'       │
                                    João
```

Now, verbs such as <u>queixar</u> would be specified as undergoing just the first step of the rule (copying) but not the second (deletion). Since there are two coreferential NP's, the structural description for Reflexivization to apply is met and (10) is derived.[5]
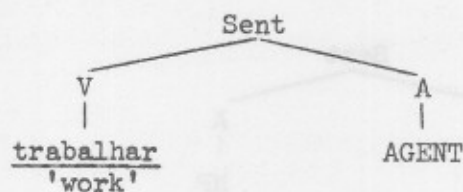
---

[5]There are some formal problems involved since the two NP's are not under the same Sentence node, but this is a matter that can easily be overcome by convention.

Consider now the derivation of 'impersonal' sentences such as (13).

(13) **trabalha-se**   'one works'

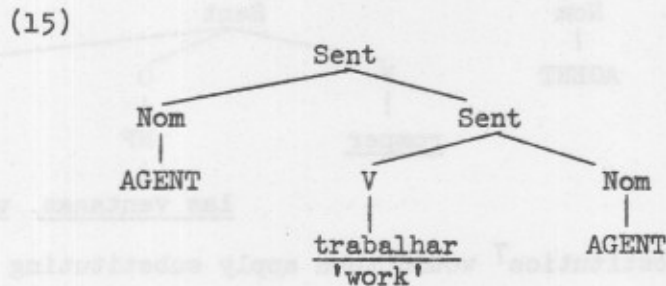Its underlying structure can be represented as (14), where 'AGENT' stands for an 'unspecified Agent'.

(14)

```
                    Sent
           ┌─────────┴─────────┐
           V                   A
           │                   │
       trabalhar             AGENT
        'work'
```

The 'unspecified Agent' does not appear in the surface but the derivational constraint (7e)[6] states that it must leave a 'trace' in

---

[6]The derivational constraint was set up in order to account for the differences between sentences derived from deep structures such as (14) which contain an 'unspecified AGENT' and must therefore undergo only the first step of the Subject Formation rule from those which derive from deep structures which have a normal Agent which gets deleted by a later rule. In other words, the constraint would explain the difference in surface between:

(i)	Sp. se trabajó	'AGENT worked'
(ii)	Sp. trabajó	'(he) worked'

---

the surface just in case the first step of the <u>Subject Formation</u>
rule applies (but not the second). After the copying part of the
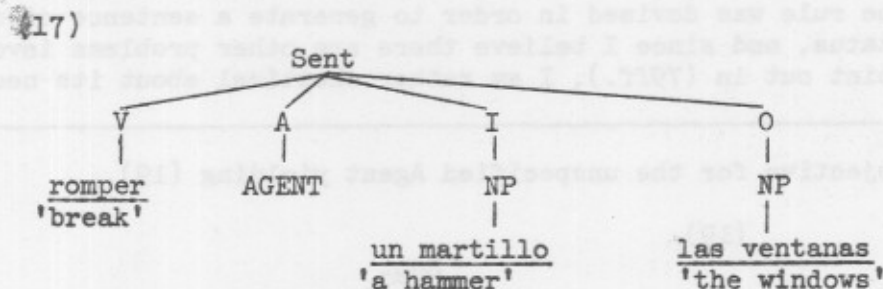rule has applied, the result is (15).

(15)

```
                      Sent
              _____|_____
             |                 |
            Nom               Sent
             |             _____|_____
           AGENT          |           |
                          V          Nom
                          |           |
                       trabalhar    AGENT
                        'work'
```

<u>Reflexivization</u> and the deletion of the unspecified elements then
take place and (13) is derived.

Let us consider now the arguments in support of the <u>Object</u>
Substitution rule. This rule was proposed in order to account for
Spanish sentences like (16).

(16) "Se rompió las ventanas con un martillo"
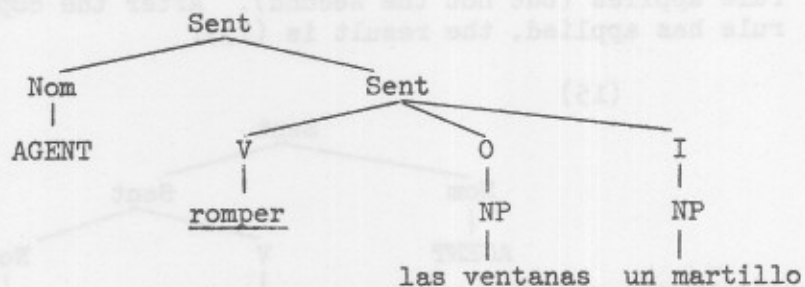'The windows were broken with a hammer'

The problem presented by this sentence, as Langacker points out,
is that they 'seem to violate the normal subject choice hierarchy
since the <u>Objective</u> (<u>ventanas</u>) has been chosen as subject despite the
presence of an <u>Instrumental</u> (<u>martillo</u>)' (p. 183). Let us see how this
difficulty is overcome by the <u>Object Substitution</u> rule.

Following the line of Langacker's analysis, the structure under-
lying (16) would be something like (17).

(17)

```
                  Sent
        _____|_____
       |        |          |           |
       V        A          I           O
       |        |          |           |
     romper   AGENT       NP          NP
     'break'               |           |
                       un martillo   las ventanas
                       'a hammer'    'the windows'
```

Given the case hierarchy, only the AGENT can be chosen as
subject in this case. Thus after <u>Nominative Marking</u>, <u>Subject
Formation</u>--which applies fully this time--and <u>Object Formation</u> would
yield the intermediary structure (18).

(18)

```
                    Sent
           ┌─────────┴──────────┐
          Nom                  Sent
           │          ┌─────────┼──────────┐
        AGENT         V         O           I
                      │         │           │
                    romper     NP          NP
                                │           │
                          las ventanas  un martillo
```

Object Substitution[7] would then apply substituting the inanimate

---

[7]Notice that the motivation for the rule of Object Copying is based on (16) and on (i) below, both given by Goldin and discussed by Langacker (p. 183):

(i) Sp. Se rompieron las ventanas con un martillo.
'The windows were broken with a hammer'

As I argue later in this paper (78), the translation into Portuguese results in an ungrammatical sentence. I have approached some native speakers of Spanish and they claim that (i) is ungrammatical also in Spanish and I believe they are right. They volunteered:

(ii) se rompieron las ventanas de un martillazo.
'The windows got broken with the blow of a hammer'.

which reflects precisely the situation found in Portuguese. Since the rule was devised in order to generate a sentence of dubious status, and since I believe there are other problems involved, as I point out in (79ff.), I am rather skeptical about its necessity.

Objective for the unspecified Agent yielding (19).

(19)

```
                    Sent
           ┌─────────┴──────────┐
          Nom                  Sent
           │          ┌─────────┼──────────┐
          NP          V         O           I
           │          │         │           │
      las ventanas  romper     NP          NP
                                │           │
                          las ventanas  un martillo
```
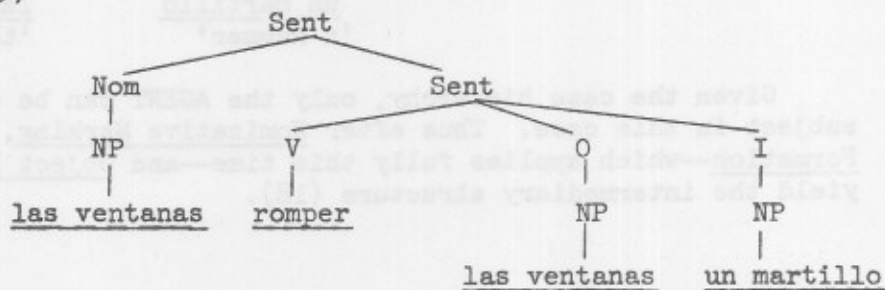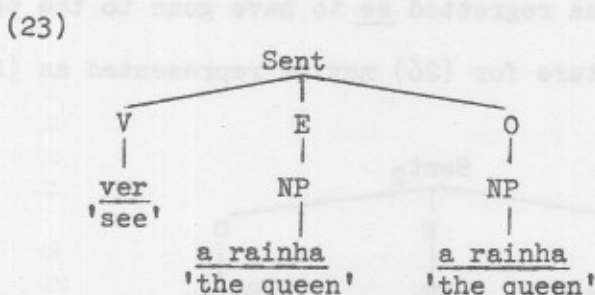
Reflexivization can now apply and derive (16) from (19).
    Given this general framework, I will limit myself to the discussion of some implications of Langacker's analysis and present some alternative views.
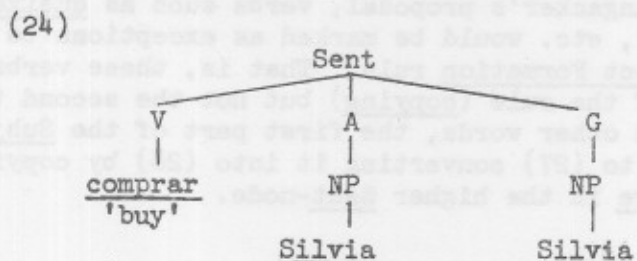
Let us point out initially some distinctions that must be made with respect to the so-called 'true reflexives' (for whatever that means). Compare initially the following sentences:

(20) A rainha se viu no espelho mágico.
      'The queen saw herself in the magic mirror'

(21) Silvia se comprou um carro bacana.
      'Silvia bought herself a terrific car'

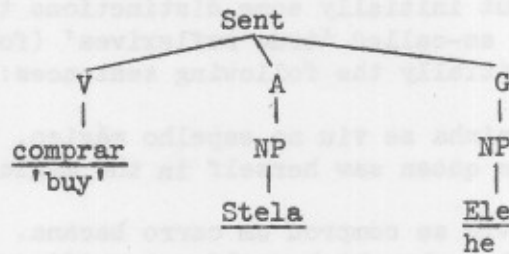(22) Stela comprou-lhe um piano.
      'Stela bought him a piano'

In a 'case grammar' the semantic distinctions involving these sentences can be described very accurately. Thus in sentence (20) we have an Experiencer which perceives an Object. Since the two NP's dominated by these two cases are coreferential, Reflexivization applies. The deep structure for (20) can be represented as (23).

(23)

```
                         Sent
          ┌───────────────┼───────────────┐
          V               E               O
          │               │               │
         ver             NP              NP
        'see'             │               │
                      a rainha        a rainha
                     'the queen'     'the queen'
```

In sentence (21) there is an Agent and a Goal and the two NP's dominated by both cases are coreferential, whereas in (22) there is also an Agent and a Goal but the NP's dominated by these two cases are non-coreferential. This explains why Reflexivization takes place in (21) but not in (22). These distinctions are expressed in structures (24) and (25) which underlie (21) and (22), respectively.

(24)

```
                       Sent
          ┌──────────────┼──────────────┐
          V              A              G
          │              │              │
       comprar          NP             NP
        'buy'            │              │
                       Silvia         Silvia
```

(25)

```
                    Sent
         ┌───────────┼───────────┐
         V           A           G
         │           │           │
      comprar       NP          NP
       'buy'         │           │
                   Stela        Ele
                                 he
```
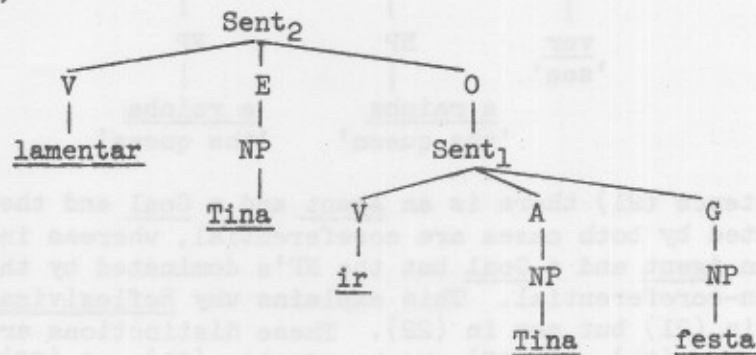
We have just seen that what is involved in <u>Reflexivization</u>
seems to be 'coreferentiality', or identity of some sort, between
NP's. Since the rule is to apply whenever its structural description
is met, the notion 'true reflexives' is empty. The term will there-
fore be used in this paper in a very loose sense.

Let us examine now Langacker's analysis of 'automatic reflexives'.
Consider the following:

(26) Tina se lamentou de ter ido a festa.
      'Tina regretted <u>se</u> to have gone to the party'

The deep structure for (26) may be represented as (27).

(27)

```
                       Sent₂
           ┌─────────────┼─────────────┐
           V             E             O
           │             │             │
        lamentar        NP           Sent₁
                         │        ┌─────┼─────┐
                       Tina       V     A     G
                                  │     │     │
                                  ir    NP    NP
                                        │     │
                                      Tina   festa
```

Following Langacker's proposal, verbs such as <u>queixar</u> 'complain',
<u>lamentar</u> 'regret', etc. would be marked as exceptions to the second
part of the <u>Subject Formation</u> rule. That is, these verbs undergo
the first part of the rule (<u>copying</u>) but not the second (<u>deletion</u>)
(Cf. p. 182). In other words, the first part of the <u>Subject Formation</u>
rule would apply to (27) converting it into (28) by copying the
circled <u>Nominative</u> in the higher <u>Sent</u>-node.

(28)

```
                    Sent
           ┌─────────┴──────────┐
         Nom◄─────────        Sent
          │          ┌────────┼──────────────────┐
          NP         V       Nom                  O
          │          │        │                   │
        Tina     lamentar    NP                  Sent
                              │            ┌───────┼────────┐
                            Tina          Nom             Sent
                                           │        ┌───────┼────┐
                                           NP       V          G
                                           │        │          │
                                         Tina       ir         NP
                                                               │
                                                             festa
```
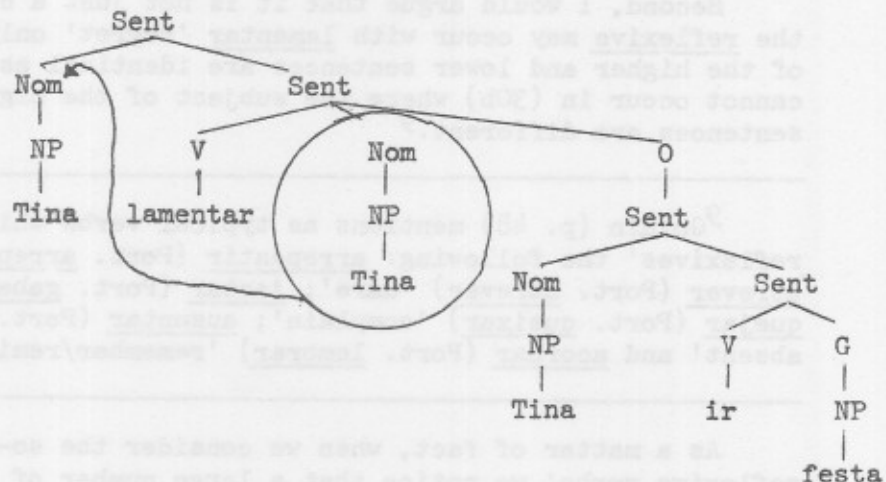
Now, since verbs like <u>lamentar</u> 'regret' are marked as exceptions
to the second part of the <u>Subject Formation</u> rule, the NP within the
circled <u>Nominative</u> in (28) is not deleted. The condition for
Reflexivization to apply would be met and (26) is derived.
There are however some difficulties with this analysis. First
it is not the case that verbs like <u>lamentar</u> must always take a
reflexive, for there are sentences like (29) in the language.

(29) Tina lamentou ter ido à festa
      'Tine regretted to have gone to the party'

As a matter of fact there are cases in which the presence of the
reflexive renders the sentence ungrammatical.

(30) a. Tina lamentou que João tivesse morrido
          'Tina regretted that João had died (subj.)'

      b. *Tina <u>se</u> lamentou que João tivesse morrido.
          'Tina regretted (herself) that João had died
           (subj.)'

Thus, if we mark <u>lamentar</u> 'regret' as an exception to the
deletion part of the Subject Formation rule the grammar would not
only incorrectly rule out (30a) but also produce the ungrammatical
(30b).[8] This seems to constitute a serious problems for the analysis

---

[8]One may argue on the basis of the syntactic evidence provided
by (29), (30a-b) that <u>lamentar</u> 'regret' and other verbs which present
the same syntactic behavior are not 'genuine automatic reflexive
verbs'. But this would considerably drain the list of the so-called
'automatic reflexive verbs' thus ultimately supporting the hypothesis
that I am trying to defend, namely, that there are no 'automatic
reflexive verbs'.

suggested by Langacker.

Second, I would argue that it is not just a coincidence that the <u>reflexive</u> may occur with <u>lamentar</u> 'regret' only when the subject of the higher and lower sentences are identical as in (26), but cannot occur in (30b) where the subject of the higher and lower sentences are different.[9]

---

[9]Goldin (p. 48) mentions as typical verbs which take 'automatic reflexives' the following: <u>arrepentir</u> (Port. <u>arrepender</u>) 'repent'; <u>atrever</u> (Port. <u>atrever</u>) 'dare'; <u>jactar</u> (Port. <u>gabar</u>) 'boast'; <u>quejar</u> (Port. <u>queixar</u>) 'complain'; <u>ausentar</u> (Port. <u>ausentar</u>) 'be absent' and <u>acordar</u> (Port. <u>lembrar</u>) 'remember/remind'.

As a matter of fact, when we consider the so-called 'automatic reflexive verbs' we notice that a large number of them require that the subjects of the higher and lower sentences be identical.

> (31) a. Beto se arrependeu de ter seduzido a sogra.
> 'Bob repented (himself) of having seduced his mother-in-law'
> b. *Beto se arrependeu de João ter seduzido a sogra.
> 'Bob repented (himself) of John having seduced his mother-in-law'

> (32) a. Chico se streveu a fumar maconha em frente do delegado.
> 'Chico dared (himself) to smoke pot in front of the sheriff.
> b. *Chico se atreveu à João fumar maconha em frente do delegado
> 'Chicao dared (himself) for John to smoke pot in front of the sheriff.

With <u>queixar</u> 'complain' the same observation seems to hold. Only the presence of sentences like (33d) seem to suggest that there areoother problems involved.

> (33) a. João se queixou de ter sido insultado pelo barbeiro.
> 'John complained (himself) of having been insulted by the barber'
> ??b. João se queixou do barbeiro tê-lo insultado.
> 'John compalined (himself) of the barber having insulted him'
> c. *João se queixou que a mulher de Pedro foi insultada pelo barbeiro
> 'John complained (himself) that Peter's wife was insulted by the barber.
> d. Joao se queixou que a sua mulher foi insultada pelo barbeiro.

'John$_i$ complained (himself) that his$_i$ wife
was insulted by the barber'

The facts listed in (26), (29), (30) and in (31) through (32)
seem to suggest that the presence of the reflexives may be accounted
for by a rule of <u>Subject Raising</u> rather than by marking these verbs
as undergoing just one step of the <u>Subject Formation</u> rule. I will
tentatively adopt the former view here, although the problems
presented by sentences (33b) and (33d) show that we must know much
more about these cases before we can choose one analysis over the
other.

Under this new analysis, <u>Subject Raising</u> would first apply to
deep structure (27), repeated below and produce (27') as an output.

(27)

```
                          Sent
            ┌──────────────┼───────────────────┐
            V              E                    O
            │              │                    │
        lamentar          NP                  Sent
                           │            ┌───────┼───────┐
                          Tina          V       A       G
                                        │       │       │
                                       ir      NP      NP
                                                │       │
                                              Tina    festa
```

(27')

```
                       Sent
         ┌──────────┬────┴────┬──────────────────┐
         V          E         O                 Sent
         │          │         │            ┌──────┴──────┐
     lamentar      NP        NP            V             G
                    │         │            │             │
                  Tina      Tina          ir            NP
                                                         │
                                                       festa
```
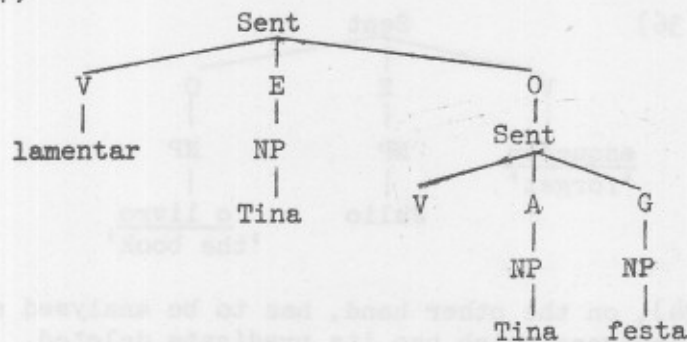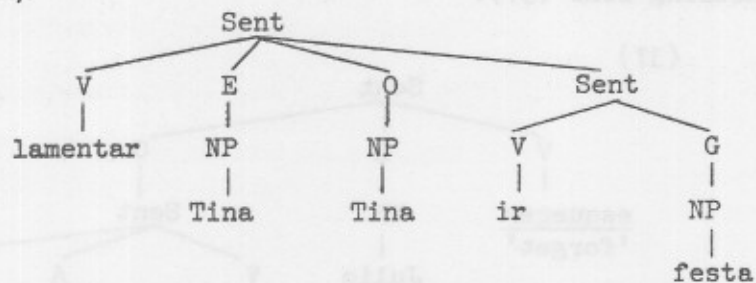
<u>Reflexivization</u> would then apply in the usual manner and (26)
is derived. If, on the other hand, <u>Subject Raising</u> which is optional
does not apply then <u>Required Coreference Deletion</u> applies to (27)
and (29) is derived.

If the analysis that I have suggested above is correct then it
would follow that the so-called 'automatic reflexive verbs' are
simply verbs which allow <u>Subject Raising</u> to apply, and <u>Reflexivization</u>
applies normally if the raised NP is coreferential to another NP
under the same <u>Sent-node</u>. Notice furthermore that there seems to be
no reason why the grammar should generate sentences like (2) and (10)
directly, for the predicates involved are always understood as having
an underlying complement. I suspect that most of the difficulty in
the analysis of these verbs comes from the insistence of treating
them as 'intransitives'.

Let us turn now to the observation of some other cases. Consider the following:

(34) Júilo se esqueceu do livro
'Julio forgot (himself) of the book'

(35) Júlio esqueceu o livro
'Julio forgot (=left) the book'

Sentence (34) would seem to constitute a counter-example to the analysis I have just suggested since there is a reflexive pronoun and no obvious complement sentence. <u>Subject Raising</u> therefore could never have applied. But a closer analysis of the two sentences shows that their underlying structures are quite distinct. In fact, only (35) can have (36) as its underlying structure.

(36)

```
                    Sent
        ┌────────────┼────────────┐
        V            E            O
        │            │            │
    esquecer        NP           NP
    'forget'         │            │
                   Julio      o livro
                             'the book'
```
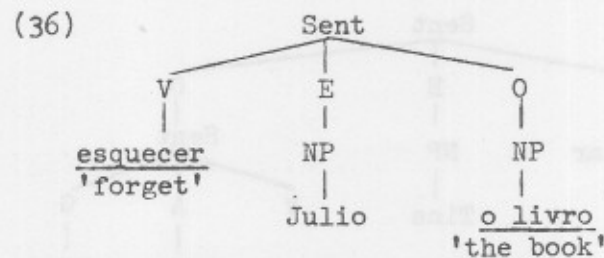
Sentence (34), on the other hand, has to be analysed as having a complement sentence which has its predicate deleted. Its deep structure is something like (37).

(37)

```
                        Sent
        ┌────────────────┼────────────────┐
        V                E                 O
        │                │                 │
    esquecer            NP               Sent
    'forget'             │        ┌────────┼────────┐
                       Julio      V        A        O
                               ┌──────┐    │        │
                               │trazer│   NP       NP
                               │'bring'│   │        │
                               │  ∞   │  Julio   o livro
                               └──────┘          'the book'
```
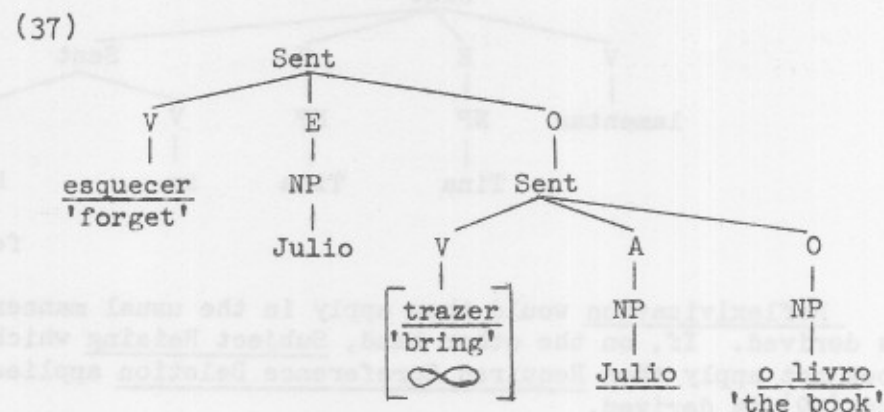
Observe that this analysis besides being intuitively correct provides not only an explanation for the presence of the reflexive in the surface structure of (34) but also accounts for the fact that sentence (34) is structurally ambiguous in n-ways.

It is the existence of facts like the ones we have discussed that support our alternative analysis of 'reflexive verbs' as a non-trivial hypothesis. The relative complexity of the examples discussed also suggests that this hypothesis should not be discarded by a superficial analysis of sentences like (38) and (39).

(38) Tina se queixou de Maria ter ido a festa
'Tina complained herself of Maria have gone to the
party'

(39) Julio se queixou do delegado
'Julio complained himself of the sheriff'

These I will leave as a problem here, but it is not unlikely that
an explanation can be found in a much deeper level.

Let us examine now the problem of the so-called 'impersonal
sentences'. Langacker's formal account of the problem seems to work
without difficulties and perhaps should be accepted until the issue
is further clarified. But it is clear that a more satisfactory
explanation has to be found and it is with this in mind that I will
offer a few suggestions.

Compare for instance sentences (40) and (41):

(40) Vendemos casas.
'(we) sell houses'

(41) Vende-se casas.
'Sell se casas'

Sentence (41) may be regarded as ambiguous between the readings
(42) and (43).

(42) (AGENT ?:) vende casas.
'AGENT ?' sells houses.

(43) Casas são vendidas.
'Houses are sold'

Sentence (40) clearly has an underlying subject which is deleted
by a transformation. But it is not at all obvious that this is the
case with (41) in the reading (43). One thing is certain in the
latter case: the se is not the subject of the sentence. The presence
of an unspecified AGENT in (42) is also probably wrong. What motivates
it is simply the surface phenomenon that the verb is in the third
person singular. The postulation of a 'dummy' symbol AGENT in the
underlying structure becomes still more implausible when we analyse
sentences like (44).

(44) Vendem-se casas.
'Sell (se) casas'

in which the verb agrees in number with casas 'houses'.

The same apparent ambiguity noticed in (41) is present in all
cases of 'impersonal sentences' as exemplified by (45) and (46).

(45) Conserta-se sapatos.
a. '(AGENT ?) repairs shoes'
b. 'Shoes are repaired'

(46)   Se pagará ao portador
    a.   '(AGENT ?) will pay to the holder'
    b.   'The holder will be paid'

I am rather tempted to make a generalization at this stage: it seems that in all cases of 'impersonal sentences' there appears to be a 'change of state' involved, or something of that sort. This would account for the 'passive meaning' of these sentences and also for the difficulty of 'discovering' an Agent for them. I will return to this later in connection with the so-called 'passive use of the reflexive', which will be discussed directly.

    There are certain sentences in the language which are referred to by traditional grammarians as having a passive meaning, and the se is said to constitute a 'passivizer particle'. This becomes clear when we examine sentences like (47).

(47)   Feriu-se o soldado no campo de batalha
    'Hurt se the soldier in the battlefield'

This sentence is in two ways ambiguous. Its two different readings can be paraphrased as

(48)   O soldado se feriu no campo de batalha
    'The soldier wounded himself in the battlefield'

(49)   O soldado foi ferido no campo de batalha.
    'The soldier was (=got) wounded in the battlefield'

Reading (48) of (47) is an instance of 'true reflexive', whereas reading (49) of (48) is an instance of the so-called 'passive use of the se'. Since the sentence is ambiguous, the grammar has to assign two different structures for it. Following Langacker's proposal we would have as possible deep structures (50) and (51) which would correspond to the readings (48) (49), respectively.

(50)

(51)

```
                              Sent
              ┌───────────┬───────────┬───────────────┐
              V           A           G               P
              │           │           │               │
            ferir      AGENT         NP              NP
            wound                     │               ┌──────────┐
                               o soldado        o campo-de batalha
                               the soldier        the battlefield
```
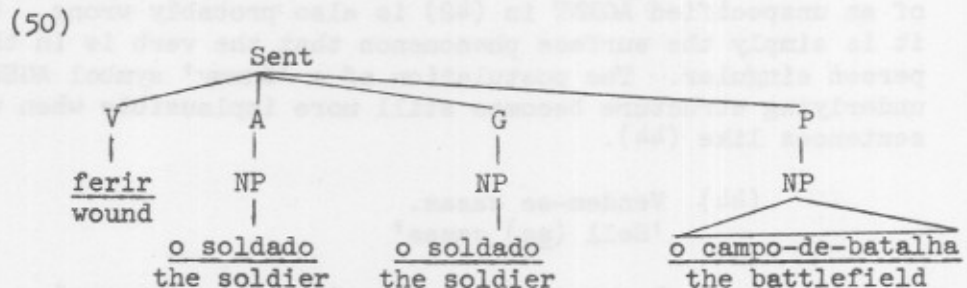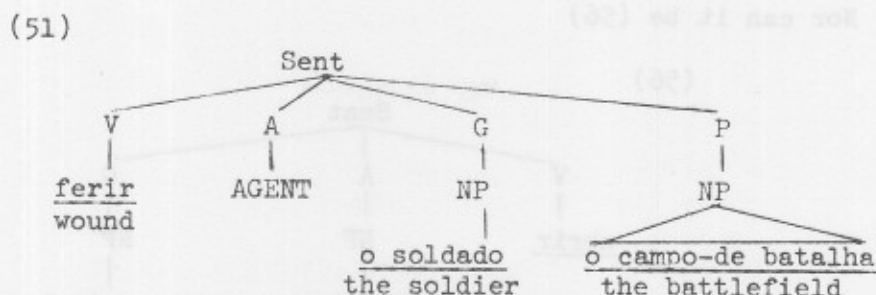
Consider now sentence (52).

> (52) Abriram-se as castanhas.
>   'Opened <u>se</u> the nuts'

This sentence is unambiguous. It can be paraphrased as (53).

> (53) As castanhas se tornaram abertas
>   'The nuts turned (themselves) open'

Reading (54) is impossible:

> (54) *As castanhas foram abertas (≠52)
>   'The nuts were open'

Observe that the structure underlying (52) cannot be (55) for it does not match native speaker's judgments that no Agent is involved.[10]

---

[10]The distinction made by Langacker (p. 177) between sentences with <u>no agentive constituent</u> as opposed to sentences with an unspecified Agent is quite pertinent here. (I am indebted to Charles Fillmore for having called my attention to this important question). Thus sentence (52) would be quite different from the Spanish sentence discussed by Langacker:

> (i) Se rompió las ventanas con un martillo

If the Spanish sentence is grammatical it would in fact match native speakers' judgment that there is in fact someone who, using the hammer broke the windows. But see fn. 7 with respect to the status of the Spanish sentence.

---

(55)

```
                         Sent
              ┌───────────┬───────────┐
              V           A           O
              │           │           │
            abrir       AGENT        NP
            'open'                     │
                                  as castanhas
                                   the nuts
```

Nor can it be (56)

(56)

```
                        Sent
         ┌───────────────┼───────────────┐
         V               A               G
         │               │               │
       abrir            NP              NP
                         │               │
                    as castanhas    as castanhas
```
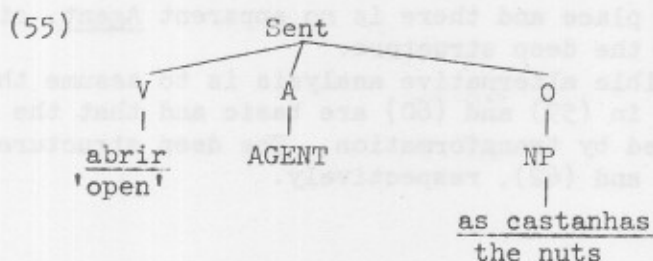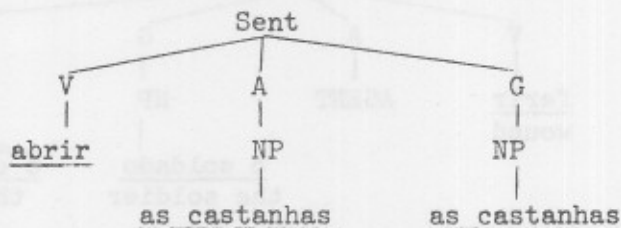
That (56) is incorrect is clearly seen if we compare sentences like:

(57) O homem se barbeou com uma navalha
      'The man shaved himself with a razor'

(58) *A castanha se abriu com um martelo
      'The nut opened (itself) with a hammer'

It is clear from these examples that only (57) can have an Agent and is to be regarded as a normal 'reflexive sentence'. This opens the possibility that the presence of the reflexive pronoun in (52)--assuming that it is indeed the reflexive pronoun--must come from a structure quite distinct from (55) and (56), which neverthe-less provides the correct structural description for Reflexivization to apply in a certain stage in the derivation.

Consider now the following sentences:

(59) a. O papel se tornou enrugado
          'The paper turned (itself) wrinkled'

      b. O papel se enrugou.
          'The paper wrinkled (itself)'

(60) a. O navio está se tornando enferrujado.
          'The ship is turning itself rusty'

      b. O navio está se enferrujando
          'The ship is 'rustying'' (lit. itself)

The sentences (a) and (b) seem to be related and there is no obvious semantic distinction between them. Notice again that there is a common property shared by both these two pairs of sentences and sentence (52). In both cases there is a 'change of state' taking place and there is no apparent Agent, either in the surface or in the deep structure.

One possible alternative analysis is to assume that the sentences (a) in (59) and (60) are basic and that the sentences (b) are derived by transformation. The deep structure for them would be (61) and (62), respectively.

(61)

```
                            Sent
             ┌───────────────┼───────────────┐
             V               O               G
             │               │               │
          nornar         ┌───┴───┐         Sent
        'come to be'     NP    ...      ┌────┴────┐
                         │              V         G
                      o papel           │         │
                     'the paper'     enrugado    NP
                                     'wrinkled'   │
                                               o papel
                                              'the paper'
```

(62)

```
                            Sent
             ┌───────────────┼───────────────┐
             V               O               G
             │               │               │
          tornar            NP             Sent
        'come to be'        │         ┌──────┴──────┐
                         o papel      V             G
                        'the paper'   │             │
                                  enferrujado       NP
                                    'rusty'         │
                                                 o navio
                                                'the ship'
```
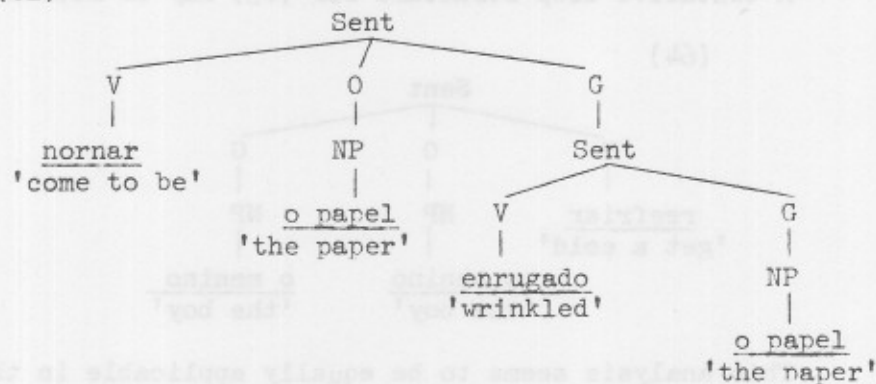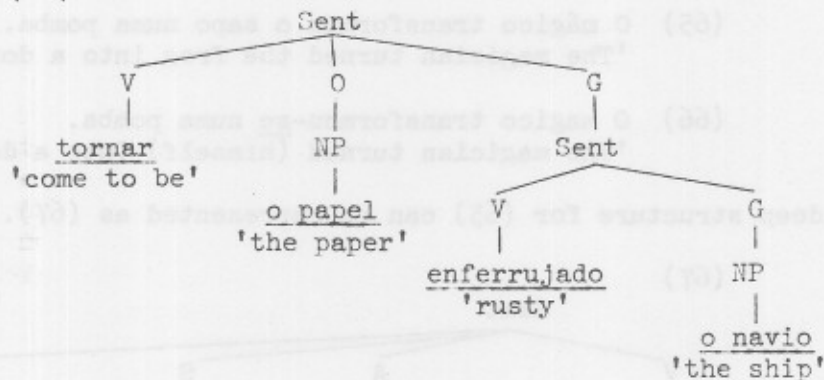
The derivation of (59a) and (60a) involves simply rules which
are already in the grammar: Nominative Marking, Subject Raising,
and Reflexivization. The lower predicates which are non-verbs
assume the surface form of Adjectives. The derivation of (59b) and
(60b) involves an extra-rule which substitutes the lower predicate
for the higher. Notice also that this proposal does not involve
the postulation of any 'abstract' verb. It is simply based on the
hypothesis that the sentences in (59) and (60), respectively, come
from a common source.

A second alternative analysis is suggested by sentences such
as

(63) O menino se resfriou
    'The boy got a cold'

Sentences of this type contain what we have been calling 'verbs
of change of state', or, perhaps more properly, 'modification of
state'. We may analyse these verbs as adding a new property to the
Object. By adopting the notion of Goal, we may say that these
verbs are to be treated as two-place predicates involving an
Object and a Goal, such as that an Object x by having a new property
added to it results into the Goal x'. Notice that the presupposition

underlying (63) is that 'the boy did not have a cold before'.
A tentative deep structure for (63) may be represented as (64).

(64)

```
                     Sent
         ┌────────────┼────────────┐
         V            O            G
         │            │            │
     resfriar        NP           NP
    'get a cold'      │            │
                  o menino     o menino
                  'the boy'    'the boy'
```
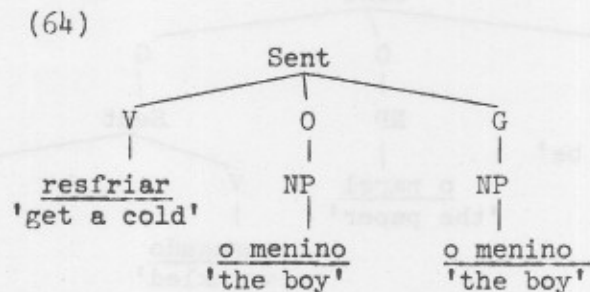
This analysis seems to be equally applicable in the case of
'verbs of transformation' which require understanding of Source and
Goal. Consider:

(65) O mágico transformou o sapo numa pomba.
      'The magician turned the frog into a dove'

(66) O magico transformou-se numa pomba.
      'The magician turned (himself) into a dove'

The deep structure for (65) can be represented as (67).

(67)

```
                    Sent
       ┌──────────┬────────┬──────────┐
       V          A        S          G
       │          │        │          │
   transformar   NP       NP         NP
   'turn into'    │        │          │
              o magico   o sapo    a pomba
            the magician the frog  the dove
```
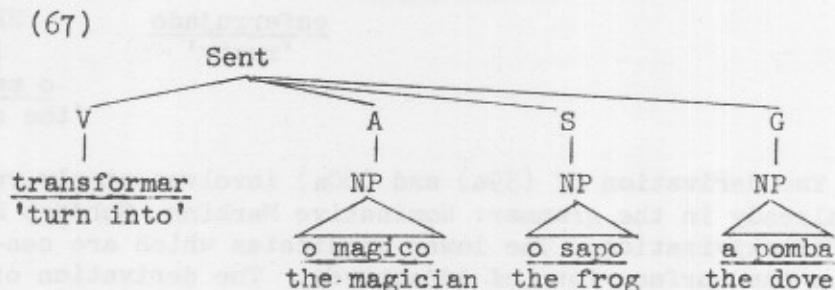
The deep structure of sentence (66) differs from (67) only in that
we have to substitute o magico 'the magician' for o sapo 'the frog'.
Observe also that strict coreferentiality does not seem to be
the case but rather some kind of identification between NP's[11] as
shown by:

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[11] In Aspects (p. 179ff.) Chomsky discusses a parallel
situation, only the problem involved there is one of deletion.

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(68) A semente se transformou numa árvore
      'The seed transformed (itself) into a tree'

(69) A semente se tornou uma arvore
      'The seed 'turned/became' (itself) a tree'

If either of these two analysis is correct, it is possible to explain not only that the alleged ambiguity of 'impersonal' sentences such as:

> (70) Conserta-se sapatos (=45)
>   a. (AGENT ?) repairs shoes
>   b. Shoes are repaired.

is, in fact, a pseudo-problem, but also that they are strikingly similar to the so-called 'passive with the _se_' sentences like:

> (71) Feriu-se o soldado no campo de batalha (=47)
>   'The soldier was (=got) wounded in the battle-
>   field' (=49)

What really seems to be involved in both cases is precisely the absence of an Agent of any kind, or at least the 'presence' in a very abstract level of an Agent of a very special type. The 'pseudo-ambiguity' of (70) shows up only if we insist on looking at the problem in terms of strict notions of 'active' and 'passive'. Notice further that these sentences do not allow the presence of an Agent in the surface as evidenced by:

> (72) *Feriu-se o soldado no campo de batalha por João
>   'The soldier got hurt in the battlefield by Joao'

> (73) *Conserta-se sapatos por mim
>   'Shoes are repaired (=get) repaired by me'

> (74) *A janela se abriu pelo criado
>   'The window got (=came) open by the butler'

> (75) *A castanha se abriu por Judite
>   'The nut opened by Judith'

We have to discuss still another problem presented by sentences such as (76) discussed by Langacker:

> (76) Sp. "Se rompieron las ventanas con un martillo"
>   'The windows were broken with a hammer'

Langacker has pointed out that there seems to be an apparent anomaly in the choice of the subject for the Objective is chosen as subject despite the fact that there is an Instrumental present.

Notice, however, that there is a restriction with respect to the kind of _Instrumental_ that can appear in sentences of the type exemplified by (76). The translation of the Spanish sentence (76) results always in an ungrammatical sentence in Portuguese:[12]

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[12]See footnote 7.

(77) a. *Partiram-se as janelas com um martelo
     b. *Se partiram as janelas com um martelo
     c. *As janelas se partiram com um martelo
        'The windows were broken (=got broken) with a hammer

Sentences (78) and (79), on the other hand, are grammatical.

(78) Partiram-se as vidraças com as marteladas.
     'The windows got broken with the hammering' (=blow
     of the hammer)

(79) Partiram-se as vidraças com as pedradas
     'The windows got broken with the stoning' (=blow of
     the stones)

As sentences (78) and (79) illustrate, the problem is not as
simple as it might seem at first sight. One may propose a rule of
Object copying to explain how the Objective has been chosen as the
superficial subject despite the presence of an Instrumental, or devise
a rule of 'Instrumental Shunting', to overcome the difficulty. But I
believe that none of these procedures is correct.
     Observe further that the Instrumentals allowed in (78) and (79)
are all instances of 'efficient cause' which are analysed by Fillmore[13]

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[13]Lectures at the 1970 Linguistic Institute of the Linguistic
Society of America at The Ohio State University, Columbus, Ohio.

---

as Sentences embedded in the Instrumental case. But it is not unlikely
that we may have to postulate a much more abstract structure for these
sentences. One in which the whole 'efficient-cause' Sentence is the
subject of a sentence with a 'verb of causation' such as fazer 'make,
do', and partiram-se as vidraças is a Sentence embedded in its Object.
In other words, the deep structure of (78) may be something like (80).

(80)
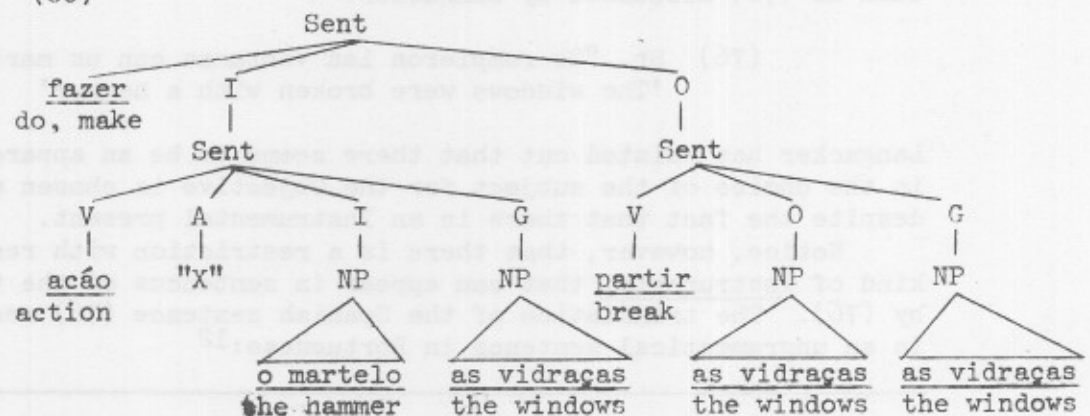
Notice that there is even surface structure sentences to substantiate it:

(81) A acáo
O golpe ⎰ de Pedro com um martelo contra as

vidraças fez as vidraças se partirem.

'The action ⎱
'The hitting ⎰ of Peter with a hammer against the

windows made the windoes break'

(82) As vidraças se fizeram em pedaços com as marteladas de Pedro contra elas.
'The windows came to pieces with the hammering of Peter against them'

(83) As marteladas fizeram as vidraças se partirem
'The hammering made the windows get broken'

(84) As marteladas de Pedro fizeram as vidraças se partirem
'The hammering of Peter's made the windows get broken'

Whether the analysis presented in (80) is true or not, I do not know. But I believe that sentences (81) through (84) serve to illustrate the complexities involved in the subject choice of apparently simple cases like (76). It shows also that we have to know much more about these sentences before we can ascertain whether the 'case hierarchy' has been violated or not.

Let us summarize briefly the main points discussed in this paper. First I have considered Langacker's proposal that the presence of the reflexive in sentences containing the so-called 'automatic reflexive verbs' is to be accounted for by marking the verb as undergoing only the first part of the Subject Formation rule (Copying) but not the second part (Deletion). I have argued first that this proposal as formulated would in the case of lamentar 'regret' not only rule out good sentences as (29) and (30a) but also produce ungrammatical sentences like (30b); and second, I have pointed out that when sentences containing these verbs have a complement sentence embedded in them Reflexivization is sensitive to the presence of an identical NP in the lower sentence. I have then proposed the alternative view that the so-called 'automatic reflexive verbs' are to be treated as always taking an underlying complement and that the presence of the reflexive is to be explained in terms of the normal application of Subject Raising and Reflexivization. I have also pointed out that there is not yet sufficient evidence for choosing one alternative over the other.

Second, I have suggested that the so-called 'impersonal' sentences and the sentences containing the so-called 'passive se' be merged together for their main syntactic characteristic is that they do not allow the presence of an Agent in the surface structure, and, semantically, it seems that they exhibit a certain 'vagueness' rather than strict 'ambiguity'. I have advanced two tentative hypotheses in

order to account for the presence of the reflexive in them. In the
first I have suggested that verbs such as <u>enferrujar</u> 'to rust' (60),
<u>enrugar</u> 'to wrinkle' (59) are 'Adjectives', that is, 'non-verbs',
embedded in the <u>Goal</u> case of a Sentence which contains a verb of
'change or modification of state' such as <u>tornar</u> 'come to be'. In
this case both the 'verb of modification of state' and the Adjective
are one-place predicates in the deep structure. <u>Reflexivization</u> takes
place when the NP's which constitute their arguments are coreferential.
In the second I have presented the alternative view that perhaps
there is no need for having a 'true' verb such as <u>tornar</u> 'come to
be' in the deep structure and that all of them are 'true' verbs. Verbs
of modification of state would then be analysed as requiring under-
standing of the <u>Object</u> before it undergoes the modification and of
the <u>Goal</u>, that is, the Object with the modifying property added to it.
<u>Reflexivization</u> would then place if the NP's dominated by the <u>Objective</u>
and <u>Goal</u> cases are coreferential. Finally, I have argued that sen-
tences containing the reflexive pronoun and which are said to have a
'passive' or 'impersonal' meaning allow the presence only of 'efficient-
cause' Instrumentals. This opens the possibility that these sentences
may have a 'causative Agent' and that they are, in a much abstracter
level, sentences embedded as <u>Objects</u> of a sentence containing a 'verb
of causation', which has as its subject the whole 'efficient-cause'
Instrumental sentence.

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Pseudoreflexives in Slovak

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In Slovak the reflexive particle <u>sa</u> has a variety of uses.
In this paper I will discuss some problems with transitive and
intransitive verbs having reflexive forms and passive meaning
(pseudo-reflexives).

In traditional Slovak grammars, verbs are divided into personal
and impersonal, e.g. <u>Ja čítam</u> 'I read', <u>Prší</u> 'It rains'. The
impersonal verbs are characterized mostly negatively. Compared to
personal verbs they have an incomplete inventory of grammatical
forms. They have only a subjectless form, which is homonymous with
the 3rd person singular neuter form of personal verbs.

Further, according to the description of traditional grammars,
a personal verb occurs in a two-member sentence, i.e. in a sentence
having a subject and a predicate, whereas an impersonal verb occurs
in a one-member sentence, i.e. a sentence having only a predicate.
Grammarians state that there was a tension created between one-
member sentence constructions and personal verbs. A relatively
young form of Slavic personal verbs--a reflexive form with a passive
meaning--emerged to remove this tension. Thus in modern Slovak
personal verbs can be used as the predicate of both a one-member
sentence and two-member sentence. For example, personal, nonreflexive
verbs <u>ísť</u> 'to go', <u>robiť</u> 'to work' have impersonal reflexive forms:
<u>Ide sa</u> 'The walking goes on'; <u>Robí sa</u> 'The work goes on'.

The purpose of this paper is to point out some problems with
the description of Slovak pseudo-reflexives. The framework used
here is the Fillmorean case grammar.

The difference between personal non-reflexive versus personal
reflexive verbs can be illustrated by the following examples:

(1) Ja čítam báseň dobre.
    "I read the poem well."

(2) Báseň sa mi číta dobre.
    "To me the poem reads well." (Literally: The poem
        itself to me reads well.)

In both sentences <u>ja</u>, 'I' is the agent. (1) is a more objective
statement of somebody's action, which may but need not be modified
by manner adverbial. In (2), the agent is at the same time the
experiencer, who subjectively 'feels through' his own action,
always evaluating it. The different attitude of the agent towards

the action can be seen in (3), (5), and (4), (6).

(3) Učiteľka mi gratulovala, lebo som báseň čítala dobre.
"The teacher congratulated me, because I read the poem well."

(4) *Učiteľka mi gratulovala, lebo báseň sa mi čítala dobre.
"The teacher congratulated me, because to me the poem read well."

(5) Pohanili Petra, že tak zle spieval.
"They reproached Peter, because he sang so badly."

(6) *Pohanili Petra, že sa mu tak zle spievalo.
"They reproached Peter, because his singing went on so badly."

In sentences (3) and (5), it can be the observer who evaluates the reading or singing of the agent, but in (4) and (6) it must be the agent himself who does so. In constructions like (2) there must be a coreferentiality between the agent and the experiencer.

Another peculiarity of construction (2) is that it must obligatorily contain an adverbial of evaluation, such as well, badly, pleasantly, etc. This is a subgroup of manner adverbials. On the other hand, any adverb can be used in personal, non-reflexive constructions like (1).

(7) Ján číta báseň v triede.
"John reads the poem in the classroom."

(8) *Báseň sa Jánovi číta v triede.
"To John the poem reads in the classroom." (meaning that John is the agent.)

(9) Eva neskoro napísala referát.
"Eva wrote the term paper too late.

(10) *Referát sa Eve napísal neskoro.
"To Eva, the term paper wrote too late."

To account for these differences between (1) and (2), the following deep structures are proposed:

(11) DS for (1)   Rules:

                                   Agent fronting

              S_1

   V   A   O   Mann

 číta ja báseň dobre
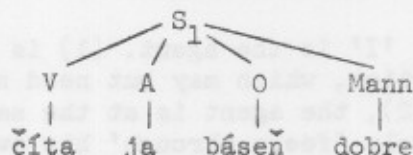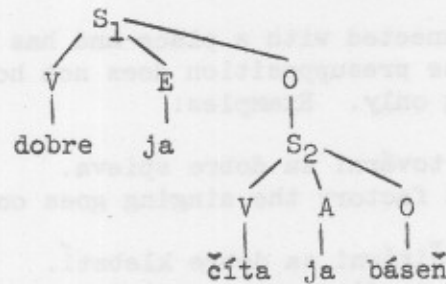
(12) DS for (2). Condition: E = A   a) Argument promotion
                                                b) Subject copying
                                                c) NP reduction
        S_1 d) Equi-NP-Deletion
                                            e) Subject Raising
  V   E   O   f) Predicate Raising

dobre ja S_2

             V   A   O

           číta ja báseň

In the first cycle the following rules apply to (12): (a)
Argument promotion is necessary because arguments are in hierarchical
order with respect to the predicate. By promotion an argument which
was chosen to become a subject is posited to the right of the verb.
(b) Subject copying applies to an argument chosen to become a
subject, and leaves a copy behind, when the subject is fronted (see R.
Channon (1969)). (c) NP-Reduction. If two NPs in a proposition
differ only by the fact that one of them lacks a case marker, the
other will be reduced to the reflexive particle (see R. Channon (1969)).
    In the second cycle, Equi-NP-Deletion, Subject Raising, and
Predicate Raising apply to yield the terminal string.

    An interesting problem arises if E = A = indefinite NP, as in
an often cited example:

      (13) V továrni sa dobre pracuje.
           "In this factory, the work goes on well."

The sentence (13) is ambiguous. The first reading is (13a) and
the second (13b)

      (13) a. People (in general) work in this factory, and
                 to them the work goes on well.

          b. People (in general) work, and the properties of
                the factory makes the work go on well.

The reading of (13a) is comparable to the reading of (2), as given
in the diagram (12). The reading of (13b) is impossible for (2),
since (13b) presupposes that the work goes on and the factory has
such properties as to make the action go well.
    There are certain places which have a natural association with
a certain action, such as opera house with singing, factory with
working, etc. Examples:

      (14) V tejto čitárni sa dobre číta.
           "In this reading-room, the reading goes on well."

      (15) Na universite sa dobre prednáša.
           "At this university the lecturing goes on well."

(16) V tejto opere sa dobre spieva.
      "In this opera house the singing goes on well."

If an action is connected with a place and has no natural
associations with it, the presupposition does not hold, and the
sentence has one reading only. Examples:

(17) V tejto továrni sa dobre spieva.
      "In this factory the singing goes on well."

(18) V tejto čitárni sa dobre klebetí.
      "In thie reading-room gossiping goes on well."

(19) V tejto opere sa dobre spí.
      "In this opera house the sleeping goes on well."

Sentences (17) - (19) have an underlying structure comparable
with that of (2). Locative appears in the lower sentence. Sentences
(14) - (16) which have two readings, have two different underlying
structures. With the reading of (13a), the locative is in the lower
sentence. With the reading of (13b) the locative is in the higher
sentence. This is the reading that requires a natural connection
between the locative and the action.

The deep structures corresponding to (13a) and (13b) are (20a)
and (20b).

(20a)

```
                    S₁
          ┌──────────┼──────────┐
          V          E          O
          │          │          │
        dobre      indef        S₂
                        ┌────────┼───────┬────────┐
                        V        A        O       Loc
                        │        │                 │
                       číta    indef           v knižnici
                      pracujú                  v továrni
```

(20b)

```
                    S₁
          ┌─────────┬──┴──┬──────────┐
          V         E     O          Loc
          │         │     │           │
        dobre     indef   S₂       v továrni
                      ┌────┼────┐
                      V    A    O
                      │         │
                   pracujú    indef
```
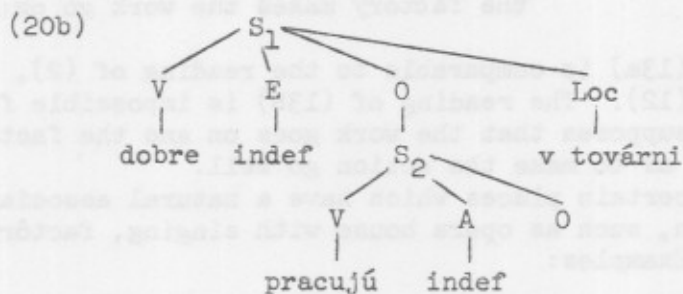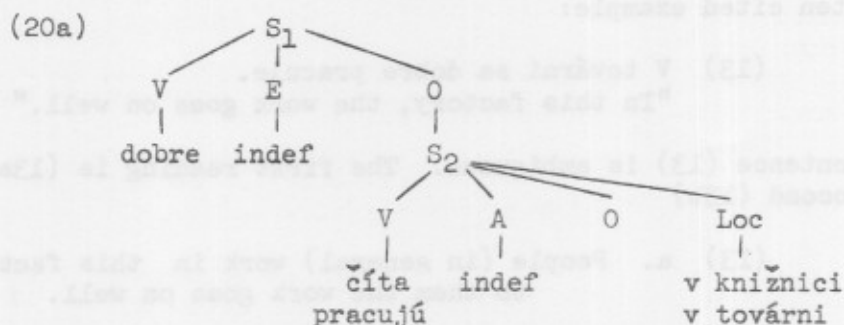
There are certain further restrictions on adverbs, as (21) and
(22) shows:

$$(21) \quad \text{V knižnici sa mi} \left\{ \begin{array}{l} \text{*pozorne} \\ \text{*usilovne} \\ \text{príjemne} \\ \text{dobre} \end{array} \right\} \text{číta.}$$

"In the library to me the reading goes *carefully
(*diligently, pleasantly, well)."

$$(22) \quad \text{V knižnici sa} \left\{ \begin{array}{l} \text{pozorne} \\ \text{usilovne} \\ \text{príjemne} \\ \text{dobre} \end{array} \right\} \text{číta.}$$

"In the library the reading goes carefully (diligently,
pleasantly, well)."

The choice of adverbs in (21) is restricted, since (21), like (13a)
has one interpretation only, while (22) has two interpretations,
analogous to (13a) and (13b). The deep structure shown in the
diagram (12) accounts for (21), but not for (22). The additional
restriction on acceptable adverbs in (21) is that the adverb must be
stative.

Sentence (22) is problematic. In one reading, which is analogous
to (13b), only stative adverbs (príjemne, dobre) are allowed.
These adverbs are obligatory. In deep structure they are posited
as higher predicates. In the other reading both stative and non-
stative adverbs are allowed. These adverbs are optional and are not
postulated as higher predicates. Non-stative adverbs occur in
imperatives, but stative adverbs can not. Imperatives also require
an agent.

(23) Čítaj knihu pozorne!
"Read the book carefully!"

(24) *Čítaj knihu dobre!
"Read the book well!"

It seems to be the case that Experiencer allows only stative adverbs,
which act as higher predicates.

(25) *V knižnici sa mi číta.
"In the library it reads to me."

(26) *Číta sa mi.
"It reads to me."

As was noted above, non-stative adverbs imply the presence of an
agent; these adverbs are not posited as higher predicates.

The same kind of problems arise with both transitive and
intransitive verbs, when they are used in pseudo-reflexive constructions.
Intransitive verbs show the same features as the transitive verbs

without an object. That is, they have the surface form of the 3rd
person singular neuter. At present I have no better account for
this fact than the following: Both have a dummy symbol in place
of Object, which is copied and reduced to a reflexive particle.
The deep structures are shown in (27) and (28).

(27)

```
              S₁
        ╱     │    ╲
       V      E     O
       │            │
     dobre          S₂
              ╱    │    ╲
             V     A     O
             │          ╱▵╲
           číta
           spí
```

(28)

```
              S
        ╱     │    ╲
       V      A     O
       │          ╱▵╲
      spí
      ide
```
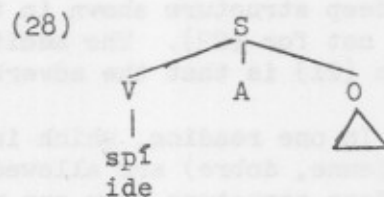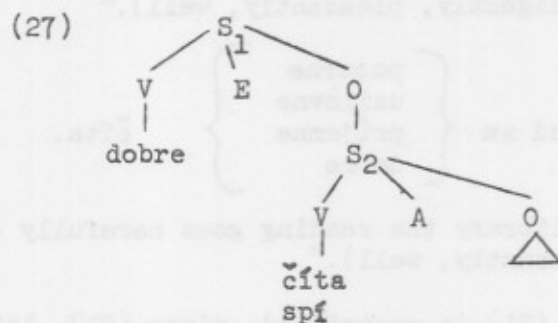
Examples: (deep structure like (27))

    (29) Spí sa mi dobre.
           'To me the sleeping goes well."

    (30) Ide sa mi príjemne.
           "To me the walking goes on well."

    (31) Stavia sa mi dobre.
           "To me building goes well."

Examples (deep structure like (28))

    (32) Spí sa/ ide sa / stavia sa (dobre).
           "The sleeping/walking" building goes on (well)."

To summarize, the deep structures (27) and (28) are meant to
account for the following facts: in (31) the adverb <u>dobre</u> describes
the feeling of the experiencer of his own action. In (32) the adverb
<u>dobre</u> refers to the quality of the result of the action.

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Tagalog, English, and Topicalization

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One of the most perplexing problems which case grammar faces is that of subject selection. As presently formulated, subject selection is based upon the concept of case hierarchy, or case ranking. Thus, the first case in the hierarchy is selected as subject; or, if it is not selected, it is "downgraded" or moved by a specific transformation, acquiring in the process a surface marking which shows that it is a downgraded subject. The problems which arise with this process of subject selection vary from the problem of choosing a Dative case subject in English to the problem of choosing a subject in those languages which display little evidence of case hierarchy. By examining a language which has no case hierarchy, though, we are able to gain insight into a possible theoretical framework for subject selection in all languages--a framework which is not based on the concept of case rankings. One of the languages which has no case ranking is Tagalog. A brief outline of the language will be presented below, and the implications of how Tagalog operates will be discussed in relation to English.

One of the most interesting facets of Tagalog, and the facet which concerns us here, is that the surface structure of a Tagalog sentence is very similar to the deep structure representation proposed for case grammars. That is, each sentence is composed of a verb followed by a series of noun phrases which stand in some case relationship to the verb.[1] With this type of linear ordering,

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[1] In Tagalog the subject of a sentence may occur in either of two positions. In one position, the subject precedes the verbal phrase. When the subject is in this position, it is always followed by the particle "ay" which indicates the following predicate. The most common syntactic pattern, however, consists of a verbal phrase followed by the subject, or more accurately, the topic of the sentence. Since this is the syntactic construction which conveys the most information about case relationships, I will concentrate here only on the second of the possible syntactic formations.

Tagalog obviously cannot indicate the subject of the sentence by placing the noun phrase before the verb, as does English. Instead, Tagalog "focuses" on one of the case forms as the topic of the sentence. As pointed out by Fillmore (1968), such "topicalization" is comparable to subject selection in English--an idea to which we shall

return later. The "topic" of a Tagalog sentence is the thing which the sentence is about, the most important thing in the speaker's mind. Since linear ordering is of little importance in Tagalog, a chosen noun phrase must be marked as "topic". In its surface realization, the element chosen as topic always follows _ang_, or _si_ if it is a proper noun, regardless of the position which the noun phrase occupies within the sentence as a whole.

Since the topic is marked by _ang_, it loses whatever case marking it would have carried had it not been chosen as topic. This loss of marking is compensated for, however, by the fact that the verb is then marked to show the case relationship between the verb and the noun phrase topic. The following sentences illustrate this point:

(1) Bumibili ng libro si Alex.
(2) Binibili ang libro ni Alex.

The first consonant and vowel are re-duplicated to show imperfect aspect, and the infix -_um_- in sentence (1) indicates that the verb _bili_ is in an agentive case relationship with the topic of the sentence. The prenominal marker _si_ identifies the agentive case noun phrase _Alex_. In sentence (2), the infix -_in_- indicates that the topic of the sentence is in an objective case relationship with the verb, and _ang_ marks the objective case noun phrase _libro_. Translations of the two sentences, with the topic placed in subject position, are as follows:

(3) Alex is buying the book.
(4) The book is being bought by Alex.

It should also be noted that

(5) Bumibili si Alex ng libro.
(6) Binibili ni Alex ang libro.

have the same meanings as (1) and (4), respectively. That is, linear ordering does not show the topic of the sentence, nor does it indicate a change of case relationship between verb and noun phrase.[2]

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[2]Ambiguities are introduced in some constructions when the surface case forms are re-ordered. These ambiguities will be discussed in more detail below.

Given below are example of five types of topicalization,[3] each

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[3]The charts of Tagalog topicalization, and the examples which follow, were taken from Bowen with some modification in manner of presentation. In order to simplify my presentation here, I chose

not to document each chart or example, but rather to refer the
reader to Bowen, especially pp. 183, 197-201, 218, 448, and 473.

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compared with agentive topic selection, and each followed by illustrations
of the constructions. These examples illustrate the process of topic
selection and show how topicalization affects prenominal markers. The
translations of the examples have the topic in initial position. The
ordering of cases in the charts has no special meaning.

PREDICATE		TOPIC
Verb affix		
mag-	ng-Objective	ang-Agentive
-in-	ng-Agentive	ang-Objective

AGENTIVE -- OBJECTIVE

Agentive topicalization:
  (7) Naghihintay siya ng bus.
       "He is waiting for the bus."
  (8) Nagsusulat si Juan ng liham.
       "Juan is writing a letter."

Objective topicalization:
  (9) Hinihintay niya ang bus.
       "The bus is being waited on by him."
  (10) Sinusulat ni Juan ang liham.
       "The letter is being written by Juan."

PREDICATE		TOPIC
Verb affix		
-um- mag- maka-	sa + Locative	ang + Agentive
-an	ng + Agentive	ang + Locative

AGENTIVE -- LOCATIVE

Agentive topicalization:
  (11) Humahalik sa kamay ng Ninong ang bagong-kasal.
       "The newlyweds kiss the hand of the godfather."
  (12) Bumbili si Ray ng kendi sa tindahan.
       "Ray buys candy at the store."

Locative topicalization:
  (13) Hinahalikan ng bagong-kasal ang kamay ng Ninong.
       "The hand of the godfather is kissed by the newlyweds."
  (14) Binibilhan ni Ray ng kendi ang tindahan.
       "The store is where Ray buys candy."

PREDICATE		TOPIC
Verb affix		
-um- mag- mang-	sa pamamagitan ng + Instrumental	ang + Agentive
ipang-	ng + Agentive	ang +Instrumental

AGENTIVE -- INSTRUMENTAL

Agentive topicalization:
(15) Gumuhit siya ng larawan sa pamamagitan ng lapis.
"He drew a picture with a pencil."
(16) Nagpasyal sila sa pamamagitan ng kotse.
"They went places in a car."

Instrumental topicalization:
(17) Ipinangguhit niya ng larawan ang lapis.
"A pencil was used in drawing a picture."
(18) Ipinamasyal nila ang kotse.
"A car was used by them in going places."

PREDICATE		TOPIC
Verb affix		
-um- mag- mang-	para sa + Benefactive	ang + Agentive
i- ipag- ipang-	ng + Agentive	ang + Benefactive

AGENTIVE -- BENEFACTIVE

Agentive topicalization:
(19) Nanggagapang para kay Ledesma si Kardo.
"Kardo campaigns secretly for Ledesma."

Benefactive topicalization:
(20) Ipinanggagapang ni Kardo si Ledesma.
"Ledesma is secretly campaigned for by Kardo."

PREDICATE		TOPIC
Verb affix		
-um- ma- mag- mang-	(dahil) sa + Causative	ang + Agentive
ika- ikapag- ikapang-	ng + Agentive ng + Agentive	ang + Causative

AGENTIVE -- CAUSATIVE

Agentive topicalization:
> (21) Yumaman siya dahil sa sweepstakes.
> "He become rich because of the sweepstakes."

Causative topicalization:
> (22) Ikinayaman niya ang sweepstakes.
> "The sweepstakes made him rich."

As illustration of Tagalog topicalization with several noun phrases, consider the following examples:

Agentive topicalization:
> (23) Bumibili ang lalaki ng libro sa tindahan para kay Rose.
> "The man bought the book at the store for Rose."

Objective topicalization:
> (24) Binibili ng lalaki ang libro sa tindahan para kay Rose.
> "The book was bought at the store by the man for Rose."

Locative topicalization:
> (25) Binibilhan ng lalaki ang tindahan ng libro para kay
>   Rose.
> "The store is where the book was bought by the man
>   for Rose."

Benefactive topicalization:
> (26) Ibinibili ng lalaki si Rose ng libro sa tindahan.
> "Rose was bought the book at the store by the man."

Once more, however, I feel it important to point out that the following sentences convey the same meaning as the Agentive topicalized sentence above:

> (27) Bumibili ng libro ang lalaki sa tindahan para kay Rose.
> (28) Bumibili sa tindahan ng libro ang lalaki para kay Rose.
> (29) Bumibili para kay Rose sa tindahan ng libro ang lalaki.
> (30) Bumibili para kay Rose ng libro sa tindahan ang lalaki.
>   etc.

In some instances, ambiguities are created by the linear ordering of the noun phrases--ambiguities which do not occur if the noun phrases are ordered in a different manner. However, the same phenomenon occurs in English (I saw the boy walking towards the railroad station. Walking towards the railroad station, I saw the boy.) and is not indication of case ordering at a deep level.

From this brief outline of the structure of Tagalog, perhaps the reader can see the following points: (a). There is no independent justification for proposing that the case forms are ordered at the deep level. Instead, surface representation seems to support the idea that the deep cases are unordered. (b). Topic selection must occur at the deep level, since the verb must also be marked for topic.

Since the points made above are important for the discussion of English which is to follow, they deserve some amplification. First, Tagalog is a language whose surface structure is unordered in respect to the surface case forms. With such an unordered surface representation, Tagalog offers little motivation for postulating an ordered deep structure. Since most English sentences have a rather definite surface order of cases, it is easy to see why an ordered deep structure was proposed. When there are examples of languages which lack surface ordering, however, the justification for formulating a deep hierarchy is weakened. There must be some independent motivation for a proposal of deep structure hierarchy, and I am unaware of any such motivation. A proposal which is stronger and probably more nearly universal would state that case selection is simultaneous and unordered. That is, instead of having a case hierarchy which would determine the subject of a sentence, there would be instead a simultaneous selection of case forms, one of which would be marked as topic of the sentence. It is, of course, possible that surface ordering would then be required for some languages, but this would primarily be a stylistic feature which would be language specific, and not at all connected with the universal statement of case selection and topic marking. In essence, then, the deep structure which I propose has a verb followed by a set of possible case selections. From the set of possible cases, a group of cases would be arbitrarily chosen at the same moment, with one of the cases arbitrarily being marked as topic. At the same time, the verb would be marked to show which case was being chosen as topic.

This brings us to the second of the points made above--topic selection must occur at the deep level. This point is based upon the idea that the verb must be marked at the deep level, according to which case has been chosen as topic. Such a marking must occur if the verb is to have the proper surface form. Moreover, it is possible that certain verbs cannot have specific cases as topic. If such a case were to be chosen as topic, then the derivation of the sentence would immediately be blocked. Since the verbs already must be marked as to which cases they can occur with, it seems little to add if we state that the cases would be marked plus or minus topic.

Using the theory outlined above, an example of a Tagalog sentence would be as follows:

(31)

```
                    S
        ┌───────┬────┴────┬─────────┬─────────┐
        V       A         O         L         B
        │       │         │         │         │
       bili     Ø       libro    tindahan     Ø
       (+O)              (+T)
        │                 │         │
     binibili         ang libro  sa tindahan
```
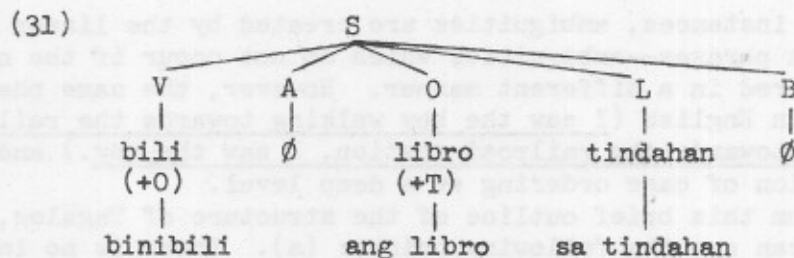
As an illustration of how this same procedure could be followed in English, consider the following derivation:

```
                    (32)              S
              ┌─────────┬────────────┼────────────┬──────────┐
              V         B            L            O          A
              │         │            │            │          │
             buy        ∅         Chicago        gun         ∅
            (+O)                                (+T)
              │                                  │
          was bought              in Chicago   the gun
```
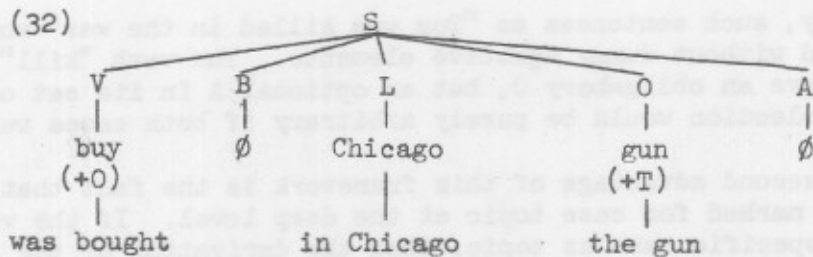
The verb "buy" has been marked as having an Objective topic; any
verb marked as having Objective topic must have a surface repre-
sentation of "be + past participle" (tense is ignored here). The
Locative case in this example has a surface realization of "in + Loc" and
the Objective case, when marked as topic, has either a definite
or indefinite article preceding it. It is quite obvious that a
stylistic rule would now be applied, moving the noun phrase marked
+T (+Topic) to sentence initial position. Following the application
of such a rule, the sentence "The gun was bought in Chicago."
would be realized on the surface level. Notice that the case
orderings at the deep level can be of little importance in English
as well as in Tagalog. If the Benefactive were realized as "for
Sam" and the Agentive as "by John" in the above sentence ("for"
and "by" being the surface markings of Benefactive and Agentive
cases respectively when they are marked -T), then the following
sentences could be produced, with the only stylistic change being
the positioning of the case marked as +T in sentence initial
position:

    (33) The gun was bought for Sam in Chicago by John.
    (34) The gun was bought for Sam by John in Chicago.
    (35) The gun was bought by John in Chicago for Sam.
    (36) The gun was bought by John for Sam in Chicago.
    (37) The gun was bought in Chicago for Sam by John.
    (38) The gun was bought in Chicago by John for Sam.

The only requirement for the production of the above sentences is
that the deep cases be unordered. Hence, the semantic interpretation
would be the same for the sentences since the case forms remain in
the same relationship to the verb--only the surface realization
would be altered. It is, of course, obvious that some of the
sentences contain ambiguities which are not present in other of the
sentences. This same phenomenon occurs in Tagalog, as has been
mentioned, and may be due to constructions similar to the equational
sentences to be discussed below. Nevertheless, all sentences have
one reading in which the meaning is the same.

The advantages of considering subject selection to be
topicalization as outlined above are obvious. First, "passive voice"
is actually a marker of topic selection. The verb is marked as it
is in Tagalog, the only difference being that English has fewer
verb markers. The "Passive Transformation" and all its accompanying
problems are eliminated. Any verb which is marked +O, +D, +B, and
possibly +L and +T would have surface realization with "be".

Secondly, such sentences as "Tom was killed in the war" would be produced without dummy Agentive elements. The verb "kill", then, would have an obligatory O, but an optional A in its set of cases. Topic selection would be purely arbitrary if both cases were present.

A second advantage of this framework is the fact that the verb is marked for case topic at the deep level. If the verb cannot take a specific case as topic, then the derivation of the sentence is blocked, as has been mentioned above. Thus, if the psych verbs were marked as not taking Experiencer as +T, then the Psych Movement Transformation would be useless (add to this the idea that the cases are unordered and the transformation becomes even more unnecessary). Such verbs as "resemble", "seem", and "obvious" could also be marked as not allowing E as +T, eliminating the "Experiencer Shunting Transformation". Examination of other advantages of the proposed grammar might lead to even greater simplification.

One possible simplification concerns "Equational Sentences", and once more we shall refer to Tagalog for a clue as to the nature of an English constructions. Consider the following:

(39) Maganda ang damit.   "The dress is beautiful."
     beautiful dress

(40) Titser ang babae.   "The woman is a teacher."
     teacher woman

(41) Babae ang titser.   "The teacher is a woman."
     woman   teacher

The Tagalog sentences should suggest to the reader that when an "adjective" is in a case relation with a noun phrase which has been marked +T, the English equivalent places "be" before the adjective and the topic is moved to sentence initial position. "Adjectives", therefore, can be considered as deep level predicates and can be subjected to the same constraints and methods of interpretation as other verbal elements.

The comments above regarding topicalization in English have been rather speculative. However, I feel that the concept of topicalization mentioned in "The Case for Case" is too important to be neglected. As the previous examples tend to indicate, topicalization might lead to a more nearly universal grammatical statement, and it might also greatly simplify the grammar. Obviously, more work needs to be done to ascertain the power and effectiveness of such a concept, but the implications as to power and effectiveness are already apparent.

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The Pathological Case

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The positing of <u>Path</u> as a conceptually required case for verbs
of motion is a fairly recent development in Case Grammar theory.
Fillmore in "The Case for Case"(1968a), proposed a single Locative
case with a locational interpretation (e.g., 'in Chicago') and a
directional interpretation (e.g., 'to Chicago') in complementary
distribution with eash other depending on the nature of the
associated verb (e.g., 'was' vs. 'went'). In a later article (1968b),
Fillmore expands the list of cases associated with verbs of motion
to include Source and Goal. Bennett argues in a recent paper (1970)
for the need to recognize four deep cases relating to the locative-
directional distinction associated with verbs of motion: Locative,
Source, Path, and Goal. Fillmore has suggested, following Bennett,
that <u>Path</u> ought to be included in the case frames for motional verbs.
In the present paper, I propose to look in some detail at the case
labeled <u>Path</u> and in particular at some of the ways in which it
differs significantly from other cases.

The Need for Path

In many English sentences containing verbs of motion, we can
be satisfied with a case frame analysis of the form: $[\_(A)O(So)(G)]$.[1]

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[1]I use 'So' rather than 'S' for Source to avoid confusion with
'S' for Sentence in rules and tree diagrams. This usage differs
from Fillmore's, who uses 'S' for Source and 'Sent' for Sentence.

The sentences in (1) can be analyzed in this fashion--as a first
approximation at any rate. This is to say, we can tolerate <u>to the
alley</u>, <u>through the squad car window</u>, and <u>over the fence</u> as manifesta-
tions of the Goal case, and <u>from the kitchen</u>, <u>from the hill</u>, and
an understood "from here" as the manifestations of Source.

(1) a. Sam(A) carried the garbage(O) from the kitchen(S)
     to the alley(G).
  b. The rock(O) moved from the hill(So) through the
     squad car window(G).
  c. Sam(A) threw the watermelon(O) over the fence(G).

(2) a. The rock(O) moved from the hill(So) through the
     squad car window(?) into the officer's lap(G).

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(2) b. Sam(A) threw the watermelon(O) over the fence(?)
to Jim(G).

But when these same phrases appear in other sentences, as in
(2), we can no longer be satisfied with a [_(A)O(So)(G)] case frame.
In these examples, we have no overt noun phrases for Source and/or
Goal, but at the same time we have something left over. This leftover
noun phrase seems to describe the space intervening between source and
goal or to describe some characteristics of that space. Let us call these
manifestations of an additional case Path; and let us insert Path
between Object and Source[2] in the case frame for verbs of motion:

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[2]I explain below why I choose to insert Path after Object
rather than between Source and Goal, where the sequence of real-
world events would suggest that it go.

[_(A)O(P)(So)(G)]. Such an analysis forces us to reinterpret the
sentences of (1) as follows:

(1) a'. Sam(A) carried the garbage(O) from the kitchen(So)
[via some unspecified route(P)] to the
alley(G).
b'. The rock(O) moved from the hill(So) through the
squad car window(P) [to some unspecified
point(G)].
d'. Sam(A) threw the watermelon(O) [from here(So)]
over the fence(P) [to some unspecified
point(G)].

The Prepositions of Path

It is usually the case that various cases have certain
prepositions characteristically associated with them (Bennett, 1968,
1970; Bugarski, 1969; Fillmore, 1968a). Thus, Agent typically takes
Ø or 'by'; Instrument 'with' or 'by'; Object Ø or 'with';
Experiencer and Goal 'to'; and Source 'from'. Path behaves much
like other cases in this respect. It has certain prepositions
associated with it, depending on the psychological dimensionality
with which the speaker perceives or regards the object manifesting
Path. This dimensionality (cf. Leech, 1969:161ff) forms a three-
valued system, the members of which we can call conveniently 1-
dimension, 2-dimension, and 3-dimension. It must be kept in mind,
however, that these psychological dimensions have more to with the
mind of the speaker than they do with the physical dimensionality
of the object in question. To me, the key words to be associated
with the psychological dimensions are:

| 1-dimension | point, location | (no physical dimension relevant) |
| 2-dimension | line, surface | (one or two physical dimensions) |

<pre>
            3-dimension   area, volume   (two or three physical
                                              dimensions)
</pre>

This system of dimensionality together with a portion of the case
frame for verbs of motion defines a matrix of prepositions
characteristically associated with locational cases:

	Source	Path	Goal
1-dimension	from	via, by way of	to
2-dimension	from, off	via, along, over, across	onto
3-dimension	from, out of	through	into

Examples of the various dimensional uses of Path are in (3), (4),
and (5). Note in the (b) examples that it is the perception of
the object that is important--not the physical dimensionality of
the object itself.

<pre>
     (3) a. Sam(A=O) went to Reno(G) via Chicago(P).
          b. Jim(A=O) went to the woods (G) by way of (the
                    location of) the hay field(P).

     (4) a. Sam(A=O) went to Reno(G) along Interstate 80(P).
          b. Jim(A=O) went to the woods(G) across (the
                    surface of) the hay field(P).

     (5) a. Sam(A=O) went through Chicago(P) to Reno(G).
          b. Jim(A=O) went to the woods(G) through (the
                    area of) the hay field(P).
</pre>

Verbal Expression of Path

Prepositions (or rather prepositional phrases) are by no means
the only way in which the cases of Source, Path and Goal can be
given surface realization in English sentences. There are a
number of verbs in English that incorporate notions of case into
them. The examples in (6), for instance, show instances of the
incorporation of Source into verbs; while those in (7) show the
incorporation of Goal. Path is well-behaved in this respect, too.
There are quite a number of verbs of motion that incorporate the
notion of Path, as in the sentences of (8).

<pre>
     (6) a. Sam(A=So) threw the rock (O) in the pond(G).
          b. The bullet(O) was fired at the target(G).

     (7) a. Jim(A=G) caught the watermelon(O).
          b. Sam(A=G) received the stolen goods(O).
</pre>

(8) a. Sam(A=O) crossed from the bank(So) to the
            post office(G).
     b. Jim(A=O) climbed to the top of Mt. Rushmore(G).
     c. The bird(A=O) flew out of the bush(So).
     d. The cannonball(O) sank to the bottom of the
            pool(G).

   Gruber (1965) has cataloged many more of these kinds of motional
verbs and points out a number of interesting co-occurrence
restrictions between verbs which incorporate case-like notions and
prepositions which express contrary case-like notions. I should
point out in examples (6) and (7) that although Source and Goal
are identical to Agent, this identity restriction must be marked
in the lexical entry for the verb in question. This marking is, I
suggest, part of what it means for a verb to incorporate a case, or
case-like notions.
   An interesting observation that can be made about motional
verbs that incorporate Path is that an overt expression of Path
seems to be able to co-occur with such verbs with little or no
restriction, as in (9). Verbs that incorporate Source and/or Goal
do not seem to allow this co-occurrence of an overt expression of
case. Thus, the sentences of (9) are perfectly acceptable, while
those of (10) are questionable at best.

(9) a. Sam(A=O) swam through the water(P) to the raft(G).
     b. The mole(A=O) burrowed through the earth(P).
     c. The car(O) crossed over the bridge(P) from
            Minneapolis(So) to St. Paul(G).

(10) a. ?Sam(A) threw the rock(O) from himself(So) to
            the squad car(G).
     b. ?Jim(A) received the stolen goods(O) to
            himself(G).

The Pathology of Path

   The observation above suggests that Path, although well-behaved
in some respects, does not always act like the other cases. In
fact, it does not; and there are several other ways in which Path
is even more anomolous. Consider the fact, noted above, that
among the cases associated with verbs of motion, Agent can be
coreferential with Object, as in (11), with Source, as in (12), and
with Goal, as in (13)--but Agent cannot, as far as I can see, be
coreferential with Path.

(11) a. Sam(A=O) ran along the road(P).
     b. Sam(A=O) jumped out of bed(So).
(12) a. Jim(A=So) gave money(O) to charity(G).
     b. Jim(A=So) loaned a book(O) to Sam(G).

(13) a. Sam(A=G) robbed the bank(So).
     b. Jim(A=G) accepted the loot(O).

Now one way to explain this is to observe that Agent must be animate and that Path is typically (always?) inanimate. But all this does is push the problem one step backward. We still have to ask why Source and Goal can often be animate, while Path rarely can (if at all). But even given an explanation, we are still left with the fact that Path differs significantly from Object, Source and Goal in this respect.

Another way in which Path is pathological has to do with its relationship with surface Accusative. Path, unlike Source and Goal, can readily stand in direct object relationship to certain verbs of motion, as in (14). Now Source and Goal can be direct objects of a few verbs, as in (15), but the list appears to be severely restricted. Path, on the other hand, can be the direct object not only of the verbs in (14) but also of the following: shoot (the rapids), traverse (the slope), follow (the trail), canoe (the stream), ford (the river), ride (the rails), wade (the creek), and ski (the back trail). For this reason, I conclude that Path should be inserted ahead of Source in this hierarchy of cases, rather than between Source and Goal where one would otherwise place it, so that it can readily accept Accusative Marking.

(14) a. Jim(A=O) crossed the bridge(P).
     b. Salmon(A=O) swim the Columbia every spring.
     c. Have you(A) ever driven Interstate 80(P)?
     d. Go climb a tree(P)!
     e. Sam(A=O) toured the Far East(P).

(15) a. Harry(A=O) reached Chicago(G).
     b. George(A=O) entered the room(G).
     c. Pete(A=O) left St. Louis(So).

but

     d. *Harry arrived Chicago.
     e. *Pete departed St. Louis.
     f. ?Flight 457 departs St. Louis at 7:58 p.m.

In spite of the longish list of motional verbs that can take Path as a direct object, this case cannot freely become direct object, as indicated by the examples in (16). Finally, and perhaps most significantly, notice that with Path, the Accusative Marking Rule must be optional, as shown by (17)--cf. (14). Thus Path differs from Source and Goal in being able to take Accusative Marking, but differs from Experiencer and Object in that it needn't take Accusative Marking even when it is eligible.

(16) a. *Jim(A=O) went the bridge(P).
     b. *Salmon(A=O) move the Columbia(P) every spring.
     c. *Have you(A) ever raced Interstate 80(P)?
     d. *Go pull yourself(A=O) a tree(P)!

(17) a. Jim(A=O) crossed over the bridge(P).
     b. Salmon(A=O) swim up the Columbia(P) every spring.
     c. Have you(A) ever driven along Interstate 80(P)?
     d. Go climb up a tree(P)!

Perhaps the most serious manner in which Path is pathological
lies in the fact that Path--alone among all the cases--can be repeated
within a simple clause (18). Moreover, it can be repeated indefinitely
many times (19). Let ms say that again: Path alone among all the
cases can be repeated indefinitely many times.

(18) a. The ball(O) flew through the air(P), through
         the window(P) and into the living room(G).
     b. Sam(A=O) went from Chicago(So) via St. Louis(P)
         and Reno(P) to San Francisco(G).

(19) a. Jim(A=O) went out the door(P), over the hill(P),
         along the river(P), through the woods(P),
         ...(P), to grandmother's house(G).
     b. Sam(A=O) went from Chicago(So) to San Francisco(G)
         via Joliet(P), Bloomington(P), Springfield(P),
         St. Louis(P), Kansas City(P), Salina(P),
         Denver(P), ...(P).

Now this claim for the uniqueness of Path hinges on the arguments
(i) that other cases are not repetitive, and (ii) that Path indeed
is. Let us look first at some apparent repetitions with other cases.
Certain locative expressions (20) look as if they are made up of
repeated noun phrases. (See also examples (8b) and (8d).) Sentences
like these, however, seem to involve either a successive narrowing
down of the scope of location or the notion of inalienable possession.
Thus, they involve not a coordinate repetition of noun phrases but
rather a hierarchical subordination of noun phrases. I submit
that such sentences should be thought of as having underlying
representations like those in (21), while true coordinate repetitions
of Locative (or Source or Goal, for that matter) must be considered
ungrammatical, as indicated by the examples in (22).

(20) a. Sam(O) sat in the park(?) under a tree(?) on
         a bench(?).
     b. Jim(A) put the stamp(O) in the corner(?) on the
         front(?) of the envelope(?).
     c. The kitten(O) was on the rug(?) under the
         table(?(in the hallway(?).

(21) a. Sam(O) sat (in the park (under a tree (on a
         bench)))(L).
     b. Jim put the stamp(O) (in the envelope's (front's
         (corner)))(L).
     c. The kitten(O) was (on the rug (which was under
         the table (which was in the hallway)))(L).

(22) a. *Jim(A O) was in Chicago(L) in Boston(L).
      b. *Sam(A) moved the rock(O) from the yard(So)
          from the street(So) to his basement(G).
      c. *The place(O) flew to Chicago(G) to Kansas
          City(G) to Denver(G).
      d. ?The plane(O) flew to Chicago(G) and to Kansas
          City(G) and to Denver(G).

Notice that although the notion of successive narrowing down
of location as in (21a) seems to make sense semantically, its
representation as a syntactic structure is difficult. Notice,
also, that (22c) is grammatical if <u>Chicago</u> and <u>Kansas City</u> are
interpreted as points on the path of the plane. Adding conjunction,
as in (22d), doesn't really help any. The sentence in (22d) is
grammatical only under the assumption that three separate flights
are involved.

But what of the repeated noun phrases of (18) and (19)? These
seem to me to be related not hierarchically as above, but linearly
as in (23). They can be thought of as coordinate elements under a
single Path node, but it is difficult to think of them as a set of
hierarchically related subordinate elements. There is one
precedence relationship among the repeated Path manifestations in
(23). This is the fact that multiple points on a path must be
listed in their proper temporal sequence with respect to a journey
along the path. Thus, (24a) and (24b) represent two different
paths--and hence are not paraphrases of one another. This does
not seem sufficient grounds to call the relationship between the
noun phrases of Path hierarchical, however.

(23) a. The ball flew (through the air)(through the
          window) and into the living room.
      b. Jim went (out the door)(over the hill)(along
          the river)(through the woods)(...) to
          grandmother's house.
      c. Sam went from Chicago to San Francisco via
          (Joliet)(Bloomington)(Springfield)(St.
          Louis) etc.

(24) a. Sam(A) drove his car(O) from Louisville(So)
          to Des Moines(G) by way of Chicago(P)
          and St. Louis(P).
      b. Sam(A) drove his car(O) from Louisville(So)
          to Des Moines(G) by way of St. Louis(P)
          and Chicago(P).

Two other aspects of repeated points on a path are worth
mentioning. First, as example (24) shows, there are no strict
geographical or spatial restrictions on the sequence in which
points on a path are mentioned. Yet the sentences of (25) seem
odd. There is nothing strange about the trips involved--I'm sure
sales representatives, entertainers, campaigning politicians and
others make such trips often. But somehow we feel more comfortable

with the descriptions of such journeys in (26). Second, as we can
see from (18b), (23c) and (24), when the Path points are regarded
as being 1-dimensional, only a single preposition can be used to
introduce the series of points. Thus, the sentences in (27) are
odd. When the Path points are thought of as 2- or 3-dimensional,
however, the prepositions can be repeated, as in (18a) and (23b).

(25) a. ?Sam(A=O) went from Minneapolis(So) to St.
         Paul(G) via New Orleans(P).
      b. ?Jim(A=O) flew from San Francisco(So) via
         Chicago(P) and Denver(P) to New York(G).

(26) a. Sam went from Minneapolis to New Orleans and
         back to St. Paul.
      b. Jim flew from San Francisco to Chicago, back
         to Denver, and then on to New York.

(27) a. *Sam went from Chicago(So) via Joliet(P) via
         Bloomington(P) via Springfield(P) to
         St. Louis(G).
      b. *Jim went from the kitchen(So) to the alley(G)
         by way of the back porch(P) by way of
         the yard(P) by way of the garage(P).

Concerning the Implementation of Path

We can see, then, from the foregoing discussions that some
kind of syntactic machinery is needed for verbs of motion to account
for descriptions of the space intervening between sources and goals,
and that positing Path as a case is a desirable way to provide such
machinery. We can see, also, that Path as a case is well-behaved
in that it takes characteristic prepositions like other cases, it
has a fairly well-defined central meaning like other cases, and it
participates in verbal expression like other locative and directional
cases. From this, we can conclude that Path ought to be included
in the case frames for verbs of motion. On the other hand, we
can see that Path exhibits deviant behavior in the following fashions:

Verbs that incorporate notions of Path can take overt
expressions of Path with little or no restriction.

Path cannot be coreferential with Agent, where other
cases can.

Path is typically (always?) inanimate, while Source and
Goal often are animate.

When Path is eligible for Accusative Marking, it can
undergo it or not optionally, while other cases must undergo
Accusative Marking if they are eligible.

Path alone among the cases can be repeated indefinitely
many times.

There are certain temporal and spacial restrictions on
the order in which repeated instances of Path can appear in
a sentence.

That Path should be implemented as a case is, I think, indisputable;
but any attempt to implement rules and structures for Path is going
to have to take into account these pathologies. Only by diagnosing
and treating these short-comings can Path be invested with full
healthy membership in the family of cases.

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'Double Subject' Verbs in Korean

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By 'double subject' verbs in Korean I mean a verb that can take
two (surface) subject NP's in a simple sentence, a subject NP being
a NP followed by a (surface) subject particle ka.[1] One might immediately

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[1]Korean is structurally almost the same as Japanese, though not
completely. The 'double subject' construction is the same except for
a few marginal points in the two languages. Fillmore (1968: 65)
mentions briefly 'double subject' construction of Japanese in connection
with inalienable possession and cites the following sentence:

> (i) Zoo wa hana ga nagai.
>   "Elephant wa nose ga long."

Here ga is what I call the subject particle (or 'primary topicalization'
particle in Fillmore's terms), whereas wa (nin in Korean) is what I
would call the topic particle (or 'secondary topicalization' particle
in Fillmore's terms). Since the topic particle can follow various
NP's other than subject NP, NP-wa NP-ga construction does not always
represent 'double subject' construction. For example, the following
sentence cannot be said to be a 'double subject' construction:

> (ii) Hon wa boku ga yomu.
>   "As for the book, I read it."

This sentence is derived from something like the following sentence
by 'topicalizing' or thematizing the object NP hon.

> (iii) Boku ga hon o yomu.
>   "I read the book."

Even a comitative NP can be 'topicalized' when a proper adverb is
inserted and the superficial NPwa NP ga construction is derived:

> (iv) Mary wa John ga issyo ni benkyoosita.
>   "As for Mary, John studied with her together."

However, Fillmore's above sentence is a 'double subject' construction
according to my definition, since we get (v).

> (v) Zoo ga hana ga nagai.

Therefore, <u>nagai</u> is a 'double subject' verb according to my definition, but it is rather a very special case because its being a 'double subject' verb is not due to the inherent properties of the verb <u>nagai</u> itself but due to the nature of the two subject NP's, <u>zoo</u> and <u>hana</u>, as we will see later. That is, <u>zoo</u> and <u>hana</u> are in the relation of 'inalienable possession'.

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suspect that one of the subjects in 'double subject' construction is not a subject in the ordinary sense but a surface realization of something else as the form of a subject, i.e. NP followed by <u>ka</u> on the surface. Indeed, there is a slight difference in status as 'subject' between the two subjects in 'double subject' construction as we see in the following examples, but it is hard to say that one of them is something other than 'subject'.

(1) na <u>ka</u> kæ <u>ka</u> musepta.
     I SP dog SP afraid (SP= Subject Particle)
     "I am afraid of a dog."

Strictly speaking, (1) means rather, though not exactly, "It is I that am afraid of a dog," or "I, not any other person, am afraid of a dog." In other words, in NP-<u>ka</u> NP-<u>ka</u> structure always the first subject is the so-called 'exclusive' subject whereas the second subject is the so-called 'descriptive' subject.[2] The first subject is 'exclusive' in the sense

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[2]Kuroda (1965) introduced the terms, 'exclusive' subject and 'descriptive' subject.

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that it is exclusively singled out from among many possible candidates for the prediction of the following verb. Thus, the question word subject in an interrogative sentence and the corresponding subject in the responding sentence are always 'exclusive' subjects. The second subject in the 'double subject' constructions is 'descriptive' in the sense that it is simply or neutrally described or predicated by the following verb. Therefore, in a sense we might say that it is the second subject, rather than the first subject, that is 'unmarked' as a subject and thus closer to the concept of 'subject' in English. However, it has been regarded as 'object' rather than 'subject', as we will see later. And in order to get the Korean sentence that is most close in meaning to the English sentence, "I am afraid of a dog," we have to 'topicalize' the first subject as in (2).

(2) na n<u>i</u>n kæ <u>ka</u> musepta.
     I TP dog SP afraid   (TP= Topic Particle)

Thus, the subject of the English sentence "I am afraid of dog(s)" is closest in function to the topicalized subject of (2), though strictly speaking, (2) implies "As for me, I am afraid of a dog." Here we see

that the concept of 'subject' is very elusive, and seems to be quite different depending on languages. And we see that it is hard to apply the concept of 'subject' of English directly into Korean, though we use the term 'subject' in both languages. Similar situations hold for the concept of 'object', though I am not going into the details here.

Kuno (1969) suggests that the second subject in the 'double subject' construction is really an 'object', and proposes another usage ga (ka in Korean) i.e. 'objective' ga, in addition to Kuroda's 'exclusive' ga and 'descriptive' ga. He adds that 'objective' ga is always 'descriptive' ga. The confusing point here is that here he has conveniently elevated the concept of 'object' from the traditional sheer surface level to a slightly higher level of abstraction. In other words, now according to him 'object' is realized on the surface with either the object particle o (l±l in Korean) or the subject particle ga. And yet he does not give a consistent definition of his concept of 'object'; and he is obvious that we cannot expect any consistent conclusions, using inconsistent and vague terms.

Since the concepts of the surface categories, e.g. 'subject' etc., are elusive and confusing, we had better turn to systematically abstract categories and see what are the deeper level generalizations though the surface structures are only confusing. In this paper, I will attempt to account for the problematic 'double subject' construction in terms of 'case grammar'. First of all, using the case categories of 'case grammar' we can classify the 'double subject' constructions into the following four groups according to the case frames of the verbs.

Group 1: a. [___(E)(I)]:   musepta   'be afraid of'; etc.
         b. [___((E)I)]:   kwiyepta 'be lovable'; etc.
Group 2: a. [___(E)(L)]:   aph±ta   'be painful'; etc.
         b. [___((E)L)]:   sily pta 'feel cold'; etc.
Group 3: a. [___(E)(O)]:   papp±ta   'be busy'; etc.
         b. [___((/)O)]:   swipta   'be easy'; etc.
Group 4: a. [___(O(G))]:   itta   'exist'; etc.

The verbs of Group 1 are what we might call 'psychological' verbs. The case frame for Group la represents the following four possible surface sentences:[3]

(3) a. na ka kæ ka musepta
        I SP dog SP afraid
        "I am afraid of a dog."

    b. na ka musepta
        I SP afraid
        "I am afraid."

    c. kæ ka musepta
        dog SP afraid
        "A dog is fearful."

    d. musepta
        "(I) am afraid."

[3]As explained above, (3a) as it stands means rather "It is I that am afraid of a dog." And a rather (though not quite) neutral sentence without such focus on the first subject is the sentence (2), which is the one with its first subject topicalized. And we can replace the subject particle of the second subject by the topic particle and get the following sentence.

> (i) na ka kæ nɨn musøpta
>   I SP dog TP afraid
>   "I am afraid of a dog (but not of others)."

As the English gloss indicates, in the above sentence kæ 'dog' is not topicalized or thematized but contrasted with other animals or things, since in order to be the 'topic' in a Korean sentence, an NP should be the first NP in the sentence in addition to being followed by a topic particle. Thus, Kuno (1969) calls the topic particle in (2) and that in the above sentence, 'thematic' and 'contrastive' respectively. In the following sentence, kæ is topicalized and the topic particle is 'thematic'.

> (ii) kæ nɨn na ka musøpta
>   dog TP I SP afraid
>   "As for the dog, I am afraid of it."

However, here in order to get the meaning of the English gloss, we have to give an intonational break after kæ nɨn; otherwise it would mean "A dog is afraid of me." And here kæ should be definite ('the dog') in order to be the topic of the sentence. We can replace the subject particles of both subjects and get the following sentence.

> (iii) na nɨn kæ nɨn musøpta
>   "As for me, I am afraid of a dog (but not of others)."

As the English gloss indicates, the topic particle of the first subject is 'thematic' and that of the second subject is 'contrastive', since there can be only one topic or theme per sentence in Korean.

    The subject particles in (3b) and (3c) are also 'exclusive', and the more neutral sentences would be ones with the 'thematic' nɨn.

    I will disregard all these complications concerning ka and nɨn, since they are mostly irrelevant to our discussion in this paper.

(3a) is a 'double subject' sentence. (3b) and (3c) lack one of the subjects each, but they are perfectly grammatical and natural sentences in Korean. (3b) expresses simply the subject's or speaker's feeling of fear without mentioning the source or cause of the feeling of fear. Maybe the speaker does not know the exact course of his feeling of fear, and cannot mention it. In (3c), the subject na 'I' is understood, since in a simple sentence the 'emotive' verbs like musøpta 'be afraid' take

only the first person singular pronoun as Experiencer (ultimately as
the first subject in the 'double subject construction'). It is quite
common or sometimes preferred to omit the first person singular subject
in colloquial Korean. Thus, (3c) is a quite natural sentence. (3d)
is, I should say, a kind of elliptical sentence, but not in the sense
of English elliptical sentences. Such a subjectless sentence as (3d)
is very common or rather natural in colloquial Korean, especially when
the subject is the first person singular or the speaker.

The word order in Korean sentences is rather free except that the
verb is always sentence-final. However, when more than one constituent
within a (simple) sentence is followed by the same particle as in (3a),
then more or less fixed word order emerges. Thus, the sentence (4)
with normal intonation means "The dog is afraid of me."

(4)　kæ ka na ka musəpta
　　　dog SP I SP afraid

This surface 'fixed' word order corresponds to the underlying order
shown in the case frame. This is true for all 'double subject'
constructions except Group 4, as we will see later. Thus, for Group 1
we need only verb postposing rule and Particle Insertion rule as we
see in the following:

(5)
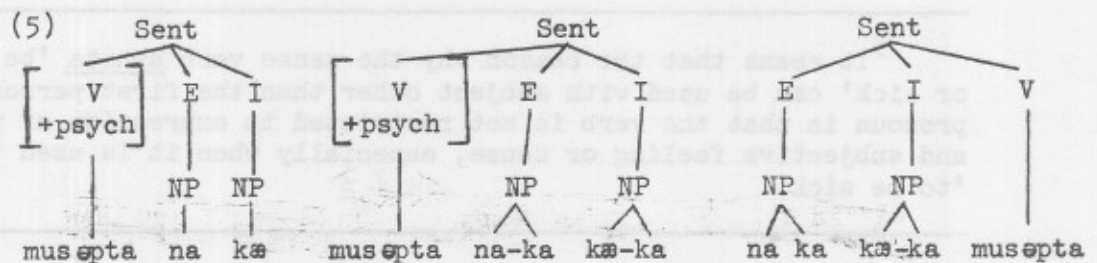
Occurring with a 'psychological' verb, both E and I are assigned the
subject particle[4] and the Verb Postposing is a very general rule.

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[4] It might prove to be preferable to assign a subject particle
to either E or I by the general Subject Particle Insertion rule, which
would be necessary on independent grounds, and then assign another
subject particle to the remaining NP by another special Particle
Insertion rule for 'double subject' construction.

All the 'psychological' verbs that can occur with E and I are all
'double subject' verbs. The verb _talmta_ 'resemble' is not a 'double
subject' verb, since the E never shows up on the surface structure as
a subject. The verb _kiəknake hata_ 'remind, cause to remember' really
leads to 'double subject' construction but it is not a single verb
but a compound of two verbs, _kiəknata_ 'remember' and _hata_ 'do, cause'.

The case frame for Group 1b represents the following three possible
sentences (6a, c, d):

(6) a. na ka mary ka kwiyəpta
       I SP Mary SP lovable
       "I think Mary (to be) lovable."
       "Mary is lovable to me."

    b. *na ka kwiyəpta

    c. Mary ka kwiyəpta
       Mary SP lovable
       "Mary is lovable."

    d. kwiəpta
       lovable
       "(Somebody) is lovable (to me)."

The only difference between Group 1a and Group 1b is that, for the
emotive verbs of Group 1b, (6b) type sentences are impossible. (6b)
would mean rather "I am lovable," which is a (6c) type sentence, the
subject being I rather than E.

The verbs of Group 2 are what we might call 'sense' verbs. Like
the 'psychological' verbs (Group 1 verbs), all the 'sense' verbs except
aphíta 'be painful'[5] allow only the first person singular pronoun or the

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[5]It seems that the reason why the sense verb aphíta 'be painful
or sick' can be used with subject other than the first person singular
pronoun is that the verb is not restricted to expression of personal
and subjective feeling or sense, especially when it is used to mean
'to be sick'.

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speaker as Experiencer, when used in a simple sentence.[6]

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[6]Both the 'psychological' verbs and the 'sense' verbs belong to
what we might call 'emotive' verbs, which are to express personal
emotion or feeling. Since there is no way to know the personal
emotion or feeling of someone else, the second or third person subjects
cannot be used with these verbs, unless we are reporting someone else's
emotion or feeling, in which case we need separate grammatical devices
or processes.

The difference between the two groups of verbs is that in the
Group 1 the first subject (E) comes to have certain feeling or emotion
because of the second subject (I) whereas in the Group 2 the second
subject (L) simply specifies the first subject's (E) body part where
he feels certain sense. Thus, in Group 2 the two subjects are in
the relation of 'inalienable possession'.

Many of the verbs in Group 4 also occur only with two subjects that
are in the relation of 'inalienable possession'. However, the case
frames are different fro the two groups, Group 2 and Group 4. Thus,

the relation of 'inalienable possession' is not consistently represented
in the above case frames of the 'double subject' verbs. The case frame
for Group 4 more properly represent the relation of 'inalienable
possession' than the case frame for Group 2. However, since the
relation of 'inalienable possession' is not originally a relation
between two NP's viewed in terms of a whole proposition but a relation
between two NP's viewed only in terms of the two NP's themselves, some
other higher level relation may be imposed on the 'local' relation
of 'inalienable possession', which seems to be the case of Group 2.

The case frame for Group 2a represents the following four possible
sentences:

(7) a. na ka meli ka aphɨta
       I SP head SP painful
       "I have a headache."

    b. na ka aphɨta
       I SP painful
       "I feel painful."
       "I am sick."

    c. meli ka aphɨta
       head SP painful
       "(I) have a headache."

    d. aphɨta
       painful
       "(I or somebody) is painful or sick."

The case frame for Group 2b represents the following three possible
sentences (8a, c and d):

(8) a. na ka son ka[7] silyepta
       I   hand   feel cold
       "I feel (my) hand cold."

    b. *na ka silyepta

    c. son ka silyepta
       hand   feel cold
       "(I) feel (my) hand cold."

    d. silyepta
       feel cold
       "(I) feel (some body part) cold."

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[7]The subject particle ka is realized as i after a consonant on
the surface, and the topic particle nɨn is realized as ɨn after a
consonant.

(8b) is very awkward, since we have another verb <u>chupta</u>[8] for the

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[8]The verb <u>chupta</u> is a 'sense' verb (hense a 'emotive' verb) but
it is not a 'double subject' verb, since it is a one-term verb.
Similar is the verb <u>tɘpta</u> 'feel (the whole body) hot.'

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meaning of 'to feel the whole body cold'. Instead of (8b), we should
say (9):

> (9) na ka chupta
>   I   (feel) cold
>   "I am cold."

The verbs of Group 3 are hard to uniquely characterize. However,
most of them are somehow related to 'capacity' or 'competence'. Some
verbs of Group 3 are 'emotive' verbs.

The case frame for Group 3a represents the following four possible
sentences:

> (10) a. John ka saɘp ka pappɨta
>   John SP business SP busy
>   "John is busy with business."
>
>   b. John ka pappɨta
>   John SP busy
>   "John is busy."
>
>   c. saɘp ka pappɨta
>   business busy
>   "The business is busy." or "(Someone) is busy with
>   business."
>
>   d. pappɨta
>   busy
>   "(I or somebody) is busy (with something)."

The verb <u>pappɨta</u> is not an 'emotive' verb; hence the first subject is
<u>John</u>.

The case frame for Group 3b represents the following three possible
sentences (11a, c, d):

> (11) a. na ka i munce ka swipta
>   I SP this problem SP easy
>   "This problem is easy to me."
>
>   b. ?na ka swipta
>
>   c. i munce ka swipta
>   this problem SP easy
>   "This problem is easy."

(11) d. swipta
　　　 easy
　　　 "(Something) is easy."

(11b) with normal intonation would mean "I am easy," which is (11c)
type sentence, the subject being O instead of E, though it could be
interpreted as "It is to me that something is easy." in a very special
context,　The verb swipta 'be easy' is an 'emotive' verb and the first
subject (E) should be na 'I' in a simple sentence.

　　As indicated earlier, for the 'double subject' structures of Group
1, 2, and 3, the surface basic or 'fixed' order of the two subjects
corresponds to the order represented in the case frames, and we need
only the Verb Postposing process as far as the surface word order is
concerned.　For the Subject Particle Insertion, we have to expand the
rule so that it applies to the structures descriptions (12) and (13),
as well as (14).

(12)　$[[_{+sense}^{V}] \text{ E L}]^9$

(13)　$[[_{+competence}^{V}] \text{ E O}]$

(14)　$[[_{+psych}^{V}] \text{ E I}]$

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[9]As discussed earlier, since any two NP's in the relation of
'inalienable possession', including 'double subject' structures of
Group 2, can become a 'double subject' with a proper verb, we may try
to derive all the 'double subject' constructions of Group 2 from
[V O G] (Condition: O and G are in the relation of 'inalienable
possession'.),　instead of (i).

(i)　$[[_{+sense}^{V}] \text{ E L}]$.

Then we are deriving 'double subject' construction of Group 2 from
the same underlying structure as the 'inalienable double subject'
construction of Group 4, thus being consistent in representing the
relation of 'inalienable possession' in the underlying case frames.
Then, however, we have to deny the relations between the 'double subject'
and the verb in Group 2, which would be rather contrary to the principles
of the case grammar.　I think we would better be inconsistent in
representing the relation of 'inalienable possession' in underlying
case frames.

　　Group 4 actually consists of two different subgroups of verbs.
One of the subgroups consists of the verbs of 'existence': issta
'exist' and ɵpta 'not exist'.　The other subgroup consists of any verbs
which can occur with 'inalienable double subject'. (Cf. footnote 9).
In other words, the latter subgroup of Group 4 are hard to be called
'double subject' verbs because 'double subject' is not due to any
inherent properties of the verbs.　They just happen to predicate
'inalienable double subject'.

The possible sentences with verbs of 'existence' (the first sub-group) of Group 4 are as follows:

(15) a. na ka ton ka issta
          I SP money SP exist
          "I have money."

      b. *na ka issta

      c. ton ka issta
          money SP exist
          "(Somebody) has money."

      d. issta
          exist
          "(Something) exists." or "(Somebody) has (something)."

(15b) with normal intonation would mean "I exist" which is (15c) type sentence, the subject being O instead of G. However, if the subject is topicalized (15b) could mean "As for me, I have" in a very special context.

    The first subject (G) of the 'double subject' with a verb of existence of Group 4 can be paraphrased as a dative phrase and (15a) can be paraphrased as (16):

      (16) na eke ton ka issta
            I to money SP exist
            "I have money."
            "Money exists to me."

(16) is rather closer in meaning to the English sentence "I have money," since (15a) rather implies "It is I that have money." Therefore, it would be reasonable to derive (15a) from (16) by replacing eke 'to' the by subject particle ka, which is not recommended in the cases of Group 1, 2, and 3 since there are no 'ready' paraphrases in those cases.

    The possible sentences in a case of 'inalienable double subject' of Group 4 are as follows:

      (17) a. Mary ka kho ka tachælopta
              Mary SP nose SP colorful
              "Mary 's nose is colorful."
              "It is Mary whose nose is colorful."

          b. *Mary ka tachælopta

          c. Kho ka tachælopta
             nose SP colorful
             "(Somebody's) nose is colorful."

          d. tachælopta
             "(Something) is colorful."

We can replace the verb <u>tach lopta</u> by a great number of verbs in (17a).
Clearly the 'double subject' construction is not due to the nature of
the cooccurring verbs but to the relation of the two NP's themselves,
i.e. 'inalienable possession'. The relation of 'inalienable possession'
is found not only in body parts, but also in kinship terms, 'relational'
nouns, e.g. 'top', 'side', etc. and any things closely associated with
each other or the relation of 'part and whole' of anything, as we see
in the following sentences.

> (18) Ohio tæhak   ka tosekwan ks hullyunhata.
>   Ohio university SP library SP excellent
>   "Ohio university's library is excellent."

> (19) Mary ka chima ka ocalpta
>   Mary SP skirt SP short
>   "Mary's skirt is short."

> (20) i camera ka lens ka miceita.
>   this camera SP lens SP US-made
>   "This camera's lens is U.S.-made."

Inserting a proper adverb, Korean speakers see the relation of 'inalienable
possession' even between a man and a bag that he carries:

> (21) John ka kapan ka hangan mukepta.
>   John SP bag   SP always heavy
>   "John's bag is always heavy."

Further, we may extent the notion of 'inalienable possession' and say:

> (22) i tosi ka senke kyelkwa ka acik an tile watta.
>   this city SP election result SP yet not in   came
>   "This city's election results have not come in yet."

Here we see that the use of 'double subject' construction in Korean is
more or less open-ended, especially in the case of 'inalienable double
subject construction.' However, there is clearly a limit; we cannot
say the following for "Mary's book is big."

> (23) *Mary ka chæk ka khíta
>   Mary SP book SP big

We can readily paraphrase the 'inalienable double subject'
construction by a possession construction, and the following sentence
(24) with a possessive construction is more neutral a statement and
closer to the English gloss "Mary's nose is colorful." than (17a):

> (24) Mary íy kho ka tachælopta
>   Mary 's nose SP colorful
>   "Mary's nose is colorful."

However, we cannot always derive the 'inalienable double subject'
structure like (17a) from the structure like (24); we can do so only

when the possessive construction implies the relation of 'inalienable possession', i.e. when the possessive construction is derived from the underlying frame [O G]. Thus, there is a global derivational constraint if we derive the 'double subject' construction through the possessive construction. An alternative would be to derive the 'double subject' structure directly from the case frame (25) and then derive the possessive construction from it.

$$(25) \quad [[\underset{-exist}{V}]\ O\ G]$$

For Group 4, we need an additional reordering rule of preposing G to derive the surface word order from the underlying case frame.

Reviewing the four Groups of 'double subject' constructions in Korean, we can note the following points:

1. The 'double subject' verbs are all 'stative', never allowing an Agent.

2. The first subject of the 'double subject' in its surface basic order is always either E or G, which are D (=Dative) in the earlier model of case grammar.

3. All 'inalienable possessive' constructions are paraphrasable into 'double subject construction,' when the 'inalienable' possessive phrase is in the subject position in the sentence.

4. In the 'double subject' construction, NP ka NP ka, the first ka and the second ka are always 'exclusive' and 'descriptive' respectively. Thus, for common ordinary neutral statements, the first ka is replaced by 'thematic' nɨn. There are, we most frequently use NP nɨn NP ka constructions for 'double subject' constructions in ordinary speech.

5. There is some difference between Groups 1, 2, and 3 on the one hand, and Group 4 on the other. The former chooses E for the first subject whereas the latter choose G for the first subject. The former are somehow related with 'mental' processes of the first subject and the latter are not. There is also a difference in distribution as we see in the following:

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Group 1:  (E) (I), ((E)I)
Group 2:  (E) (L), ((E)L)
Group 3:  (E) (O), ((E)O)
Group 4:  -------  (O(G))
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The following is more or less exhaustive (except the cases of 'inalienable double subject') list of the 'double subject' verbs in Korean.

Group 1.	a.	[___(E)(I)]	
		musəpta	'be afraid (of)'
		cɨlkəpta	'be pleased (with)'
		pukkɨləpta	'be ashamed (of)'
		ciluhata	'be bored (with)'
		kɨlipta	'long for, miss'
		puləpta	'be envious (of)'
		cœmitta	'be interested (in)'

	thamnata	'be convetous (of)'
	silphita	'be sad (about)'
	tulyəpta	'be dread-ful (of)'

Group 1. b. [___((E)I)]

kwiyəpta	'be lovable'
kayəpta	'be pitiable'
cinglθpta	'be disgusting'
cohta	'be fond of'
silhta	'dislike'
ippita	'be good or pretty, like'
mipta	'be bad, dislike'
komapta	'be thankful'

Group 2. a. [___(E)(I)]

aphita	'be sick (painful)'
ttəllinta	'feel trembling'

Group 2. b. [___((E)I)]

silyəpta	'feel cold'
ssusinta	'feel painful'
œlita	'feel slightly numb'
kalyəpta	'feel itching'

Group 3. a. [___(E)(O)]

pappita	'be busy'

Group 3. b. [___((E_O)]

swipta	'be easy'
əlyəpta	'be difficult'
pointa	'can be seen'
tillinta	'can be heard'
mukəpta	'be heavy'
kapyəpta	'be light'
kaninhata	'be possible'
tonta	'be possible, can be done'
philyohata	'be necessary, need'

Group 4.   [___(O(G))]

itta	'exist'
əpta	'not exist'
manhta	'be many, much'
cθkta	'be few, small'

'Inalienable double subject'; any stative verb that fits
    the case frame.

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Some Problems for Case Grammar*

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1. Several years ago, from this platform, I presented a paper with
the title "A proposal concerning English prepositions," (Fillmore,
1966). That was the first public exposure of an effort that a few
months later resulted in a longish paper called "The case for case,"
(Fillmore, 1968). I suggested in these papers that a new order of
concepts should be incorporated into the theory of transformational
grammar; I spoke of deep structure cases, and my hope was that their
existence could be discovered and justified by syntactic criteria
and that their presence in underlying representations of sentences
would have the effect of reducing the burden of the semantic inter-
pretation component of a grammar. In spite of an over-exuberant
final section in "The case for case," I thought of my work, not as
a proposal to eliminate deep structures altogether, but as an effort
to find a level of syntactic structure which was deeper than that
offered by the then standard theory. My position was what would now
be called deep structure interpretivist; and since my efforts were
largely directed toward the classification of lexical items and the
analysis of complement patterns of ordinary verbs and adjectives, it
was of the sort that today would be called lexicalist.

In his chapter on "Residual problems" near the end of
Aspects of the Theory of Syntax, (Chomsky, 1965) Chomsky reminds us of
the failure of the theory presented in that book to deal with the
fact that "in some unclear sense" there is something in common
between the [me] of [John strikes me as pompous.] and the [I] of
[I regard John as pompous.]. There are semantic functions of noun-
phrases which are not assignable to their syntactic positions on
either the deep-structure or the surface-structure level. My
suggestion in those early papers was that the notion of deep
structure could be recast in such a way that certain sorts of semantic
functions of noun-phrases could be represented directly and that the
structuring of sentences according to which they can be said to have
subjects and objects could be taken care of by means of the trans-
formational apparatus of the grammar; my hope was that these semantic
functions would turn out to include those mentioned by Chomsky in
the "Residual problems" chapter.

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Linguistics, at Georgetown University on March 11, 1971.

The deep case proposals derived more directly from an interest
in languages that have case systems in their noun morphology. I am familiar
with the classical grammar tradition of identifying one at a time the
cases in which nouns could be inflected and listing with each case
the "uses" to which it could be put. As a generative grammarian
looking at this tradition, I surmised--in the way that generativists
do--that where our ancestors went wrong was in confusing what was
to be explained with what ought to be taken as given. In that earlier
view, what was taken as given was the information that the language
has such-and-such cases, and what the grammarian needed to explain
was how each of the cases could be used. We should reverse this, I
assumed, and should take the case uses as basic and regard the
observable case forms as derivable from them by rules of the grammar.

I found encouragement in this ambition by the observation that
the case uses had a lot in common between one language and another:
one man's "Dative of Person Affected" was another man's "Accusative
of Person Affected," and one man's "Ablative of Personal Agent" was
another man's "Dative of Personal Agent." Because of this apparent
commonality across languages, it seemed to me that the case uses
should be posited for all languages, including then those which lacked
morphological case inflections altogether. By this being done, the
same sorts of underlying semantic functions could be seen as realized
in the form of case endings in one language, as prepositional or post-
positional constructions in another, or in some quite different way
in a third.

I have learned a few things since those days: I now know what
"ergative" means; from a number of extremely polite colleagues I
learned about the kāraka theory of Pāṇini; I have become somewhat
more conscious of the importance which semantic functions of the
sort which have interested me have had in non-transformationalist but
multi-level theories of grammatical structure; and, more importantly,
I have in the meantime encountered an exceedingly large number of
descriptive problems that turned out to be intractable within the
model as I had been conceiving it.

I believe to this day that the basic ideas were not all wrong,
in spite of the fact that most of the specific analyses I proposed
in those first papers were bad ones. These days, partly as a kind of
intellectual exercise, and partly out of nostalgia or stubbornness,
I am in the process of preparing a version of case grammar with
some of the snags worked out and some of the details
worked in. That study is far from complete; what I hope
to do in this paper is simply to expose some of the difficulties
"of fact and principle" which the model faces, and maybe even to
suggest, from time to time, that the proponents of alternative views
are not always clearly better off with respect to these problems.

2. I see a transformational grammar with a case base as having in
general the following properties. The propositional core of a simple
sentence consists of a predicator (verb, adjective or noun) in
construction with one or more entities, each of these related to the
predicator in one of the semantic functions known as (deep structure)

cases. The cases identify the roles which the entities serve in the predication, these roles taken from a repertory defined once and for all for human languages and including that of the instigator of an action, that of the experiencer of a psychological event, that of an object which undergoes a change or movement, that of the location of an event, and so on. (I recognize the emptiness of this assumption in the absence of a coherent grammatical theory in which the cases play a crucial role. I will address myself to this question shortly.)

The cases exist in a hierarchy, and this hierarchy serves to guide the operation of certain syntactic processes, in particular that of subject selection. It figures in subject selection by determining which noun-phrase is to become the subject of the sentence in the "unmarked" instance. That case in a sentence which, according to the hierarchy of cases, outranks the others, is the one which has the noun-phrase it is associated with selected as the subject of the sentence.

Certain predicators have their own lexically determined subject choices, and there are furthermore certain subject choice options provided by the language--among them that provided in English by the passive transformation. A grammar must therefore provide some way of re-ranking the cases for particular sentences. (My present practice is to reflect the subject choice hierarchy in the left-to-right order of the cases in the deep structure representation of individual sentences, and to allow the subject selection process merely to select the left-most noun-phrase in the list. The trans-formations which re-rank these elements then are transformations which move some initially non-left-most element into the left-most position in the list of cases.)

The surface cases in case languages, and the prepositions or postpositions or other syntactic function indicators in other languages, are determined by various sorts of information about the sentence, just one of these being the identity of the deep-structure cases; others have to do with the operation of the subject and object selection processes, facts about definiteness and animateness and the like, and, for nouns that enter into the various types of locative constructions, the dimensionality of the entity being designated.

The lexical items in a language which are capable of serving as predicators--and this set includes not only all contentives but most connectives--can be classified according to the possible arrays of cases that they can occur in construction with. Lexical items can be further described by identifying the grammatical processes which are triggered by or made possible by their presence in a sentence.

Sentences that are embedded in underlying representations are embedded as occupants of some case role. By processes that are familiar if not well understood, embedded sentences can have comple-mentizers attached to them, they can be nominalized, they can have some of their constituents "promoted" to become constituents of the sentences into which they have been embedded, and so on.

Very briefly, then, these are the main characteristics of a transformational grammar whose base component specifies the case

structure of sentences. I have left vague the way in which the case
identity of a noun-phrase is to be symbolized, because that, as it
happens, is one of our problems. I have left vague the relationship
between the "entities" that have case roles in what I described as
the structure of simple sentences, and the noun-phrases that show
up in particular positions in sentences, because that is everyone's
problem.

3. The whole thing makes sense only if there are good reasons to
believe that there is an irreducible number of role types by which
grammatical theory makes its contribution to semantic interpretation;
if it turns out that this number is small; if there are reasonable
principles according to which these role types can be identified;
and if grammars in which they are incorporated into underlying
representations are superior to those in which they are not. There
are certain criteria that I have appealed to in attempting to
determine the cases, and I will speak of them now. They are not
outstandingly confidence-inspiring, given the fact that I have changed
my mind so many times in the past few years about the analysis of
a number of sentence types, but I believe there is something to them
nevertheless.

First of all I make the assumption that there is in a single
clause at most one noun-phrase (which may, of course, be compound)
serving a given case role. If we accept this one-instance-per-clause
principle, we are required to deal with apparent counter-examples
either by showing that the putative identical case roles are in fact
distinct, or by showing that the construction is better treated as
an instance of clause embedding.

Let's consider first a situation in which the embedding analysis
is preferred. Suppose that one of the case roles that we intuitively
recognize is that of the Agent, and suppose that in a sentence like
[John compelled his son to stab the usher.], we perceive agency in
both what John does and in what his son does. The one-instance-per-
clause principle requires us to analyze the sentence as being clausally
complex, and it compels us not to analyze [compel to stab] as a single
discontinuous verb. (If all languages were like English, with the
elements of [compel to stab] distributed in different places in the
sentence, we could say that this application of the principle is of
use in beating dead horses with straw men. The principle takes on
some interest, however, in a language in which the notion "compel to
stab" has surface lexical unity.)

Let's consider next a situation in which we will allow ourselves
to change our minds about the case identity of two noun phrases in a
sentence. Take a sentence like [John resembles Fred.]. It might be
believed that in this sentence the two nouns [John] and [Fred] have
the same role. One reason for believing such a thing is that if the
two noun-phrases straddling the verb [resemble] both designate
entities which are more or less equally observationally accessible,
it must always be true that if the first resembles the second, the
second resembles the first. Since the analysis as a complex sentence
does not suggest itself in this instance, the one-instance-per-clause
principle gives me the responsibility of showing that the semantic

roles of the two nouns are distinct. I would have to say that the two
entities are somehow taken in different ways. I might begin by
suggesting that the sentence [John resembles Fred.] involves the
judgment that certain properties observable in John are relatable to
properties attributable to Fred, with the second noun-phrase serving
to identify a standard according to which the entity named by the
first noun-phrase is assigned some sort of a position. This being so,
it should follow that the two roles associated with [resemble] can be
occupied by instances of different types of noun-phrases, or by noun-
phrases having different assumptions about existence or observability
associated with them. It should be possible, in other words, to put
in the second position, but not in the first position, noun-phrases
which are generically understood or which designate non-existent entities,
even when the noun-phrase in the first position is a referring expression.
This prediction is borne out, because the two noun-phrases cannot be
interchanged in properly understood readings of the sentences [That
donkey resembles a unicorn.], [John resembles a horse.], or [John
resembles his famous ancestor.].

So much for the first principle. Now sometimes a single predicator
takes noun-phrases of different cases, occurring in one sentence with
one choice of cases, in another with a different choice. Since in
English every sentence has to have a subject, one place to look for the
variety of cases is in subject position. We find that the relation
which a subject has to its clause can vary from one predicator to
another, naturally, but it can also vary in different sentences with
the same predicator.

By illustration, take sentences containing the adjective [warm].
A subject noun-phrase with this adjective can name: the experiencer of
this sensation; something which when used can result in someone
experiencing the sensation; a time period during which they can
experience the sensation; or a place in which they can experience the
sensation. If we want to assign names to these functions, we might
speak of Experiencer, as in [I am warm.]; Instrument, as in [This
jacket is warm.]; Time, as in [Summer is warm.]; and Location, as in
[The room is warm.].

My second assumption, then, is that if one takes a predicator which
is intuitively seen as assigning different semantic functions to noun-
phrases that occur in specific syntactic positions with respect to it,
there should be a natural stopping point in any attempt to classify these
semantic functions. If that turns out to be true, and if it is also
true that one finds comparable lists of functions in the analysis of
noun-phrases that occur with other predicators, we can believe that
we are on the right track. We might be encouraged, for example, if we
tried an analysis of the subject roles occurring with the adjective
[sad], because it is not unnatural to claim that for sentences like
[John was sad.] and [The movie was sad.], the emotion-experiencer role
of [John] in the former is analogous to the sensation-experiencer o
role of [I] in [I am warm.], and that the experience-eliciting role
of [movie] in [The movie was sad.] is analogous to that of [jacket] in
[This jacket is warm.]

It is one thing to see if there is a stopping place in the attempt
to list the semantic functions that go with any given predicator,
another thing to see if the list of semantic functions found for
different predicators have enough overlap to make it believable that
there is a small list for grammatical theory in general. It is still
another thing to inquire whether the functions that by this process
we take as distinct are in fact "emically" distinct, and for that we
need to find other sorts of evidence. I believe that such evidence can
be found, though it requires an appeal to syntactic constructions which
are not in themselves perfectly well understood. When the comparative
construction compares two noun-phrases and when the regular coordinate
conjunction construction unites two noun-phrases, the noun-phrases
which are brought together must have the same case role in the sentences
in which they occur. With [sad] it is possible to compare two Experiencers,
as in [John is as sad as Fred.], and with [warm] it is possible to
compare two Instruments, as in [My sweater is warmer than your jacket.];
but such mixtures of cases as that suggested by [Lately I've been sadder
than "Love Story."] or [My jacket is warmer than Texas.] will not do.
Similarly with conjunction, it is all right to say [John and Fred are
both sad.] or [My sweater and your jacket are both very warm.], but
not [John and the movie both became very sad near the end.], or [My
sweater and I are both nice and warm.].

The assumptions that I've mentioned so far are for determining
when we are dealing with distinct cases with given predicators, and I
may refer to them as principles of contrast. Next we can consider a
principle of complementarity. (Those of you who are over forty will
be familiar with these terms.) Sometimes we find in different sentences
semantic functions which in detail are partly alike and partly different,
their differences being systematically relatable to differences in
the semantic properties of the lexical material they are in construction
with. (I refuse even to mention the terminological horror of speaking
here of allo-cases of the same caseme.) With verbs of motion, like for
example [go], we can specify a starting point and a destination, as
in a sentence like [He went from the top of the hill to the cemetery
gate.]; for transformation verbs we can specify the earlier state and
the later state, as in a sentence like [He changed from a 96-pound
weakling into a famous football hero.]; and for verbs of temporal
lapse we can talk about the starting and ending point of a time period,
as in [The pageant lasted from sundown until midnight.]. My inclination
is to refer to the two points identified in all of these earlier/
later indications as different instances of the same cases, namely
Source and Goal. Depending on the type of predicator, the Source and
Goal are interpreted as earlier and later locations, earlier and later
states, or earlier and later time points.

Having come upon such a decision, we must immediately figure out
what to do with certain apparent counter-examples. As my sample motion
verb I deliberately chose the verb [go], because it is one which is a
motion verb pure and simple. [go] and [come] and [move] are just about
the only motion verbs in English which have associated with them
no understanding of manner, means or medium.

In sentences with other verbs of motion, however, it might indeed look as if we need to distinguish as separate cases temporal Source and Goal from spatial Source and Goal. To see what I mean, consider the fact that we can say either [He walked from the top of the hill to the cemetery gate.] or [He walked from noon until sundown.]. If we say that the verb [walk] can occur with either temporal or spatial Sources or Goals, we are then required to come up with special explanations of why they cannot all occur in a single sentence, and why they cannot be mixed in the same sentence. That is, we cannot say [He walked from the top of the hill to the cemetery gate from noon until sundown.]; nor can we say [He walked from the cemetery gate until midnight.] or [He walked from noon to the zoo.]. To account for these facts we must either (i) increase the number of cases by positing both spatial and temporal Source and Goal cases and introduce some constraints on their co-occurrence possibilities in single clauses, or (ii) reanalyze sentences with [walk], [swim], [run], [drive], etc., in a way that will allow them to be treated as referring either to types of activities, describable in terms of their durations, or to types of movements, describable in terms of their paths. The question of which of these choices is preferable is one of the problems I will discuss shortly.

4.   The principles I have just been talking about are fairly vague, they seldom lead to beautifully unambiguous results, and they are always subject to other sorts of considerations. Be that as it may, I have lately become comfortable with the following cases: Agent, Experiencer, Instrument, Object, Source, Goal, Place and Time. There is one more, but I'm saving that till later. I used to talk about "Datives," but I have reanalyzed the old Dative by spreading it around among the other cases. Where there is a genuine psychological event or mental state verb, we have the Experiencer; where there is a non-psychological verb which indicates a change of state, such as one of dying or growing, we have the Object; where there is a transfer or movement of something to a person, the receiver as destination is taken as the Goal. I no longer confuse selection restrictions to animates with true case-like notions.
      There are certain difficulties in stating exactly what one ought to mean by "Agent," but I am willing to leave those unresolved for now. I take the Instrument, for which I would be happy to find a better name, as the case of the immediate cause of an event, or, in the case of a psychological predicator, the stimulus, the thing reacted to. When the Instrument role is occupied by a sentence, that sentence identifies an event which is understood as having some other event or state as its consequence. The Object case is that of the entity which moves or which undergoes change, and I still use it as a wastebasket. Sentences embedded to Objects can serve to identify, for example, the content of a psychological event, as with verbs of judging or imagining. Source and Goal are used in the ways I suggested earlier, and in a few other ways as well. Since the Goal case is used to indicate the later state or end result of some action or change, it can absorb what I used to call

"Resultative" or "Factitive"; that is, it specifies the end-result role of a thing which comes into existence as a result of the action identified by the predicator, and in [I wrote a poem.] or [I constructed a bridge.] A <u>sentence</u> embedded as Goal, therefore, is one which identifies the resulting state or event in a causative construction.

The case hierarchy is that of the order in which I listed them: Agent, Experiencer, Instrument, Object, Source, Goal, Place, Time. The case in a given sentence which occurs first on this list determined what is to be the subject of the sentence in, as I said, the "unmarked" instance. For psychological verbs it is important to notice that the Experiencer precedes the Instrument (or "cause") and the Object (or "content") and will therefore be in first position in the deep structure. The so-called Psych-Movement verbs are verbs which require a transformation which moves the highest non-Experiencer noun-phrase into the first position. The Passive transformation is a more general re-ranking transformation, having the effect of putting an original Experiencer or Object or Goal noun-phrase into first position, inducing a modification in the form of the verb, and associating the preposition [by] with the noun-phrase that got demoted. (I once associated the preposition [by] with the Agent noun-phrase, but that was wrong. It is introduced as a result of the operation of the Passive transformation and is associated with whatever noun-phrase was in highest-rank position in the deep structure.)

5. There are innumerable problems that come up in any effort to fill in the details of a grammar like this, and I will devote the rest of this paper to a discussion of some of them. The first that come to mind are those that have to do with the notion of agency. What should we understand about a sentence if we know that one of its cases is Agent? How do we determine whether a verb obligatorily or optionally takes Agent noun-phrases? In what way are notions like movement, intention, causation and result related to under-standings of sentences containing Agent noun-phrases.

The model allows only two cases for noun-phrases that can appear in subject position in simple caused-event sentences, requiring both a special account of the analysis of sentences that say something about things caused by natural forces and a special explanation of situations in which there is a chain of causation. To take the second issue first: there are many events in the world which involve chains of causation. If my claim about the case structure of sentences is right, it should follow that where there is a causation chain, with one thing leading to another, the grammar of simple sentences allows mention of only the principal cause and the immediate cause, and does not allow mention of any of the intervening elements. I believe this is so, and I'll use an example offered by Donald Davidson to illustrate it. Suppose a man swings a baseball bat and the bat hits a baseball, suppose the baseball moves through the air and impinges on a window, and suppose that as a result the window breaks. The grammar of simple sentences in English allows us to say [The man broke the window.] or [The baseball broke the window.], but not, as a

description of the situation I just described, [The bat broke the window.]. The nouns that can appear as the subject of the transitive verb [break] name either the principal cause, the Agent, or the immediate cause, the Instrument, but not any intervening cause. Furthermore, if we wish to express the role of both Agent and Instrument in a sentence, we can say [The man broke the window with the baseball.] but not, as a description of this situation, [The man broke the window with the baseball bat.].

I believe, therefore, that I can justify having at most two cases related to sentences involving causation; but the next thing to consider is how one decides which of these two cases should absorb the role of phenomena which are not subject to anybody's control but which cause things to happen, as when we speak of things being caused by lightning, tuberculosis or erosion.

The possibility of positing a new case, say "Force," seems unnecessary, since this putative Force case never occurs in contrast with either Agent or Instrument. (I recognize, however, the force of a suggestion of Rodney Huddleson's (1970). One way of describing the difference between the intentional and accidental interpretations of John's involvement in actions identified by the sentence [John broke the window.] is to say that on one reading [John] is Agent, on the other [John] is Force. On the Agent interpretation, we think of John as a sentinent being; on the Force interpretation, we think of John as a force of nature.)

The question is, if Force should be grouped with either Agent or Instrument, which one should it be? Let us suppose that we decide to link forces with agents. The "principal cause" interpretation of the Agent case seems for many sentences to be quite adequate: if thunder frightened the baby by the baby's having perceived the thunder, then the thunder can be certainly thought of as the principal cause of the baby's experience. But there are a few problems associated with this assignment. For example, the case hierarchy puts an Agent always in first position, making it in general possible for sentences having Agents to contain Instrument phrases as well, but impossible for sentences having Instruments as subjects to contain Agents as well. If our putative case Force were absorbed into the Agent case, it would then be necessary to add the special information that Agent noun-phrases which represent acts of God or changes in nature fail to occur in sentences which contain Instruments or instrumentally construed [by]-clauses. This is to account for the fact that we do not find sentences like [Air pollution killed my petunias with cyanide.] or [The thunder frightened the cattle with lightning.]. If, on the other hand, the Force were grouped with the Instrument rather than with the Agent, such facts would turn out not to be special facts about force-of-nature sentences, but would already be explained by a combination of the one-instance-per-clause principle and the case hierarchy.

Another reason one might have for absorbing Force into the Instrument case is that then the natural-force noun-phrases would be seen as having the same role in sentences about their typical event-causing function and in sentences about situations in which

they are controlled by some agent after all. It is well known that
one can control phenomena in nature either by being God or by being
trained and equipped in such arts as cloud-seeding and germ warfare.
The assignment of natural-force noun-phrases with the Instrument
case would also be consistent with my view that it is possible for
the Instrument case to be occupied by a sentence, but not possible
for the Agent; the benefit here is that a great many of the
natural-force noun-phrases can be thought of as being derived from
sentences.

There are languages in which the forces of nature are sometimes
thought of as animated or deified by the speakers of the language;
for such languages, we might be advised, the force-of-nature nouns
should be assigned the Agent case. I don't believe that will be
necessary. If it turns out that all natural phenomena are thought
of as personified, then it seems quite unnecessary to make such an
interpretation for the simple reason that we could just as well say
that we are talking about the beliefs of speakers as that we are
talking about the properties of their grammars. If, on the other
hand, it turns out that some forces of nature are personified while
others are not, then we could indeed agree to assign the nouns the
Agent case in certain sentences, but we would do so by assuming that
here the words are functioning in fact as proper names and refer to
things like the god of thunder or the spirit of fire rather than to
the phenomena themselves.

Talk about Agents and Instruments having a role in sentences
that have something or other to do with causation raises the question
of the case structure of the English verb [cause]. I recall once
hurriedly writing that the verb [cause] is one which requires an
Agent, but that is clearly false. In sentences like [The glare of
the sunlight caused the accident.] or [The accident caused the
revolution.] there is no allusion to agency, and it would obviously
be necessary to attribute Instrument-hood to the subjects of these
sentences (in the sense of Instrument that I have been discussing).
We can see, therefore, that the Agent case is at least not obligatory.
Is it then optional? Can we say that in a sentence like [She caused
the accident by screaming.] we have as Agent [she] and as Instrument
a [by]-clause coming from [She screamed.]? The reasons for suggesting
that must be justified independently of the process by which the
subjects of [by]-clauses can assume a role as subjects of [cause]
quite independently of their being understood as Agents, as in
sentences like [She caused the accident by having left her drapes
open.]. There will be more to say about the verb [cause] below.

6. The recognition of the need to deal with causation as a
consequence-relation between two events comes up in the problem of
determining the case structure of certain kinds of "impingement"
verbs--that is, verbs of impact like [hit] and [strike], and verbs
of pressure like [push] and [shove]. It has been through an attempt
to give a uniform case structure analysis of these verbs that I
have been forced to give up the lexicalist position I started out
with and to recognize more indirect sorts of relations between deep
and surface structures than I had been originally willing to countenance.

Suppose that we would like to characterize certain facts about impingement verbs in terms of their similarity to verbs of motion, and suppose that we view them as expressing the situation in which there is something which moves and there is some destination or goal or direction which further characterizes this motion. The thing which moves, as in the straightforward analysis of motion verbs, is the Object, and the thing to which it moves, or on which it impinges, can be thought of as the Goal. In sentences like [John hit the fence with his cane.] or [John hit his cane against the fence.], John is the Agent, the fence is the Goal, and John's cane is the moving Object. In [John pushed against the wall with his cane.], John is the Agent, the wall is the Goal, and again John's cane is the Object. These sentences are thus seen as having a certain similarity with sentences like [John dropped the dishes onto the floor.], the detailed differences in the ways in which we interpret the cases being related to the different semantic properties of the verbs. (This analysis differs, by the way, from one given in my paper on "The grammar of hitting and breaking," just recently published but written a long time ago (Fillmore 1970)).

The analysis seems quite adequate in sentences in which one speaks of the thing which is impinged on as merely being there, but a problem arises when we consider how to analyze sentences like [I hit the ball over the fence.] and [I pushed the table into the corner.]. What we are dealing with here are situations in which the impinged upon thing itself moves. If there were reasons for treating the impinged upon thing as the Goal in the earlier analysis, there are reasons for treating it as Object in these sentences and for treating [over the fence] and [into the corner] as exemplifying the Goal case. Either these verbs have to be given different analyses for their occurrence in these different sentences, or the second set of sentences needs to be reconstructed in such a way as to allow the same entity to be both Goal and Object.

This last choice requires us not only to recognize sentences about hitting the ball over the fence or pushing the table into the corner as complex, but as complex in a way which requires some sort of association between clauses that cannot be thought of as compounding the two together or as embedding one into the other. We need to be able to recognize that the latter sentences involve an understanding of event causation, according to which the occurrence of one event has the occurrence of another event as its consequence. In [I hit the ball over the fence.] we would have to posit something like (clause i) [I hit the ball] and (clause ii) [The ball went over the fence.], the two clauses embedded to a higher predicate that has a meaning suggested by the word [cause], predicating the event-causation relation between the two clauses. The first clause is embedded as Instrument, in its immediate-cause function; the second clause is embedded as Goal, in its resulting-state function. In the first clause [the ball] is Goal, in the second clause it is Object.

The consequence of this decision is the acceptance of a model of grammar in which the rules for transforming deep structures into surface structures will be fussier than I used to want to think, and

the admission of prelexical transformations that are in fact a bit
more complicated than McCawley's Predicate Raising transformation
(McCawley, 1968). We have here a situation in which one event
serves as the immediate cause of some other event. Somehow the
transformations which will convert a structure meaning something like
[My hitting the ball caused it to go over the fence.] into [I hit
the ball over the fence.] will have to form out of all three verbs
a lexical construct of the form [by hitting cause to move] and will
have to conflate (to use Leonard Talmy's term) the two constituent
clauses into one. In the absence of detailed and principle proposals
for designing a grammar which incorporates rules which do what I
think needs to be done, all this is quite unsatisfactory; but I know
that when and if it is done, it will serve to make English look a
little bit more like those languages in which the only way to say
[I hit the ball over the fence.] is to say something like [I hit
the ball; it went over the fence.], and the only way to say [I
knocked the man down.] is to say something like [I hit the man; he
fell down.].

The restructuring processes that I have been alluding to appear
to be governed by specific lexical items, and that suggests that
the conflation process should indeed be construed as one which
creates complex lexical constructs in a way suggested by McCawley's
Predicate Raising principle, with the lexicon specifying which of
these creations have been lexicalized in the language. It is possible
to push against a table and as a result to have that table move into
the corner. English allows us to say [He pushed the table into the
corner.]. It is possible to lean against a table and as a result
to have that table move into the corner. English does not allow us
to say [He leaned the table into the corner.]. One way of capturing
such facts is to say that the lexicon of English contains the
information that [push] substitutes for [by pushing against cause to
move], but it fails to specify a lexical item capable of substituting
for [by leaning against cause to move].

Notice that it was my attempt to preserve certain principles of
case structure that forced me to consider this possibility. I want
to believe that there is a basic sense of verbs like [push] and [hit]
according to which they can be assigned their deep-structure case
frames, that the case-frames associated with verbs of motion include
the Source and Goal cases in their change-of-location functions, and
that both the semantic and syntactic additional properties of
sentences in which these verbs suggest the notion of resulting
movement can be accounted for by the kind of process that I have in
mind. The model will have to point out, for [push], that the Goal
noun-phrase takes the preposition [against] in the unconflated
clause, but that the lexical item [push] which replaced the construction
formed for the conflated clause takes that same noun-phrase as its
direct object. This not only accounts for the fact that clauses
with [push against] do not occur with location-changing Source and
Goal expressions while clauses with just [push] may, but it also
accounts for the fact that the idea of resultant motion exists also
in the superficially simple sentence [John pushed the table.].

7. If we agree that there are reasons to reach these conclusions
for cause-to-move verbs like [push], [hit], etc., we might then
ask questions along a similar line about the analysis of another
class of verbs involving both the notion of movement and the notion
of manner, means or medium of movement--verbs like [float], [ride],
[swim], [slip], etc. Each of these verbs looks as if it can be
given two case analyses, depending on whether it is interpreted as
a verb of motion or not, the two analyses requiring furthermore that
the spatial and temporal interpretations of Sources and Goals lead
to an addition to the total number of cases. That is, we can say
either [He swam from noon until 2 o'clock.] or [He swam from the
end of the dock to the shore.]. This, you will recall, is one of
the contexts which challenged the use I wanted to make of the
complementarity principle for the Source and Goal cases.

To use examples borrowed from Leonard Talmy, we can speak of
a bottle floating on the water, and we speak of the bottle
floating into the cove. In the one case there is just the matter
of some object being suspended by its medium; in the other case
there is the additional matter of its moving from one place to
another. Grammatical theory needs to provide some way of separating
these two aspects.

A semantic reason for wanting to be able to deal separately
with the motion and manner aspects of certain expressions containing
these verbs is that under certain conditions we can focus on one or
the other of the two. Take for example permission-seeking sentences
involving the verb [swim]. Suppose you are the guard at the entrance
of a cave that a stream flows into, and I am going to ask you for
permission to enter the cave swimming. Suppose in the first
instance that I am already in the water and swimming. In this case
it is simply known in advance that I am swimming, and what I need
to ask permission for is to enter the cave. In this first case what
I would say is [May I swim in?], with heavy stress on [in]. In the
second instance, suppose you have already given me permission to
enter the cave, and what I am after is your consent to do so in the
water. In that case what I must ask is [May I swim in?], this time
with heavy stress on [swim]. Verbs which do not have this sort of
double-barreled interpretation, verbs like [come] and [go], do
not have this variety in stress placement potential either. I can
say [May I come in?], but not [May I come in?]. The stressing for
[swim] when it is "used as a verb of motion" is the same as that
of the pure motion verbs. Possibly what we need, then, is an
analysis by which the motion-verb [swim] is really complex, being
a substitute for something like [by swimming go], with the stressing
of [in] in the surface sentence determined according to whether the
underlying sentence contains a [go]-clause or not.

Grammatical theory, then, must provide some way of recognizing
an association between two clauses such that the one designates
what one might roughly call the manner in which the event mentioned
by the second clause takes place. In this instance, having the two
clauses embedded to Instrument and Goal and commanded by the verb

[cause] does not seem particularly natural. In defense of the
possibility of calling on some sort of causal notion for the
analysis, however, it should be pointed out that the English verb
[cause] has not only the interpretation by which one event has
another event as its consequence, but has other uses as well.
That is, there is both a stative verb [cause] and an active verb
[cause].   The active verb appears in a sentence like [Susan's
screaming caused Fred to drop the tray.]; the stative verb appears
in the sentence [Susan's living nearby causes me to prefer this
neighborhood.]. A not particularly elegant way of using an
analogous analysis of the manner-of-motion verbs as I suggested
for the cause-motion verbs discussed in the last section is to
embed the manner clause in the Instrument, the motion clause in
the Object, and have both clauses be commanded by [cause]--this
time, the stative verb [cause]. (The difference is that the use
of the Goal case for the [hit] and [push] verbs suggested that the
motion clause indicated a consequence or result of the action
indicated by the Instrument clause.) Now we at least have some
way of talking about the two senses of [cause], we have set up
structures which will require our poorly understood but by now
familiar process of conflation, we have created the need for lexical
rules of the form "Substitute [swim] for the lexical construct
[move by swimming]," and we have underlying structures for English
which look something like what we will need for languages which do
not allow conflation in these situations but which require surface
sentences to keep the verbs separated (as in Spanish [entró
flotando], "entered floating," or Japanese [aruite kita], "came
walking").

     In the next section I will suggest that what might have looked
like straightforward instances of causatives requiring nothing more
than McCawley's Predicate Raising might really involve something
more like the conflation processes I have in mind. In particular I will
propose that [kill] will turn out to be the lexical substitution
for the construct [by doing something cause to die] rather than for
the construct [cause to die].

8. I have said nothing so far about the two cases that I call
Location and Time. That is, I have said nothing about place and
time notions independently of expressions about changing or moving.
One possibility for dealing with these cases is that of saying
that they are optional complements of essentially any predicator.
Another possibility is that of saying that clauses that are capable
of designating actions or events or situations which can be located
in space and time are themselves to be embedded into higher sentences
containing as their main verb something like [occur] or [happen],
with the understanding that it is this higher verb which takes
Location-and-Time-introducing cases. (Some verbs take Location and Time
complements directly, as for example [be] in one of its uses,
[live], and [spend], as in [The beer was in the garage yesterday.],
[I lived in Milwaukee in the forties.], and [Jeffrey spent Tuesday
afternoon at the beach.].)

     One reason one might have for accepting a Location-and-Time-
introducing higher sentence with [occur] is that its presence can

serve to explain conditions under which the conflation process is blocked. I'd like to illustrate this point by considering the analysis according to which [kill] is taken as a lexical substitution for [cause to become not alive]. On McCawley's analysis there is a single chain of embedding in structures yielding the verb [kill]. If for my sentences about pushing tables into corners and hitting balls over fences there were reasons to separate the clauses which designated the causing event from the clauses which designated the resulting event, there may well be equally good reasons for assuming the same for verbs like [kill]. That analysis, however, would require that the Instrument or causing clause contain a verb that never shows up on the surface, something having the meaning of [act] or [do something]. An analysis we might give to [John killed the rat.] would be something like [John's actions caused the rat to die.]. The verb [kill], then, substitutes for the conflated-clause construct [by doing something cause to die].

Since we are dealing here with two distinct events, each will have, in the world in which it occurs, its own separate place and time coordinates. If either of the clauses designating these two separate events has its own time and place coordinates specified, by being separately embedded to [occur], the conflation is not possible. If I was standing on the Ohio side of the border on Tuesday of last week and shot an arrow at a cougar on the Indiana side, and if the cougar then wandered into Illinois and died of the wound on Friday, I cannot say that I killed a cougar in Ohio, or in Illinois, or in Indiana, or that I killed it last Tuesday or last Friday. I can say, however, [I killed a cougar in the middle west last week.], and that is because the conflation process is possible if the event-chain sentence is left intact but embedded as a whole to the higher verb which assigns the location in space and time to the whole sequence.

9. There are now some additional problems with clauses that indicate movement. The first thing to notice is the fact that Source and Goal, the starting point and the destination, do not exhaust the complement possibilities for verbs of motion. In addition to the complements of Source and Goal, there is the complement type that David Bennett has called "Path," (Bennett 1970) exemplified in the last phrase of [He walked from the cemetery gate to the chapel along the canal.]. A particularly interesting property of the Path (or "Itinerative"?) case is that a sentence with the path designated can contain an unlimited number of Path expressions, as long as these are understood as indicating successive stretches of the same path. This can be seen in a sentence like [He walked down the hill across the bridge through the pasture to the chapel.].

Superficially, at least, the Path case requires a qualification of the one-instance-per-clause principle. As it happens, the Location and Time cases do, too. Consider a sentence like [He was sitting under a tree in the park on a bench Tuesday afternoon about three o'clock.], a type of sentence discussed by Bennett.

It's clear that we have in this sentence just one place specification and just one time specification, so on the semantic level the one-instance-per-clause principle is not violated; but I cannot say more than that. There are paraphrases of these constructions by which all of the noun-phrases that need to be linked together can be linked together by means of relative clause embedding and conjunction, but since such a way of dealing with the problem does not seem applicable to the problem of the multi-phrase Path, there may be other ways of seeing what is going on.

10. But now, what about all these prepositions? If the cases indicate the basic semantic functions of nouns, how does the case apparatus play a role in determining the selection of specific prepositions like [at], [on], [in], [to], [onto], [from], [off of], [out of], [via], [across], [through], as well as [along], [under], [beside], and the rest. The principles of contrast suggest that, for example, [to], [onto] and [into] are all instances of the Goal case, because although expressions containing them can occur with Source expressions, they cannot occur in the same sentence with other Goal expressions. But the principle of complementary distribution when based on surface evidence fails to show their identity. That is, we can speak of something as being located [at the corner], [on the corner], or [in the corner], or as moving [from the corner], [off of the corner], or [out of the corner]. The only way we have for preserving the complementarity principle for the selection of individual prepositions and for claiming that the prepositions that we would intuitively like to group together are markers of the same case, is to impute certain differences to the underlying structure of the associated noun-phrases and say that these deep differences are what determine the selection of individual prepositions. Following work by Geoffrey Leech (1970), we might want to say that nouns that occur in locative expressions can have imputed to them such properties as that of being a point or a surface or a volume, or that of being a part of a surface or a volume, or that of being a point or an area above or below or behind or in front of or to the side of some object, and so on. Innumerable ways of representing this information suggest themselves; whatever means we come across eventually for showing these distinctions in underlying representations, I assume at least that there won't need to be any changes in our understanding of the case relations themselves.

11. Expressions of duration and distance introduce new orders of problems for a case analysis of verbs of movement and change, because they somehow seem to _combine_ the Source and Goal notions into a single unit, a "hypercase" as it were. That is, we can say [He lived there from March until September.] or [He lived there for five months.], but combinations of these are not possible in simple sentences. We cannot say [He lived there from March for five months.]. Similarly, we can say [He walked from Palo Alto to San Jose.] or [He walked thirty miles.], but not [He walked from Palo Alto thirty miles.]. I have no proposals in mind for capturing this fact, and I recognize that when I acknowledge this as approblem for the theory, I must also

acknowledge the seriousness of the proposal that there might be some "hypercase" that similarly covers the Agent and Instrument case.

12. I have concentrated mostly on matters of space and time and movement in this paper, but let me now just briefly mention one or two other conceptual problems that the case grammarian faces. Just about every time that I have listed what I took to be the case notions needed for grammatical theory, I added, as if under my breath, "and possibly Benefactive." There are some unhappy facts about Benefactive constructions that suggest that the case status of the associated noun-phrase is simply not like those of the others. Benefactive constructions occur only in sentences with Agents, and only when the Agent's role is thought of as being deliberate or voluntary. To add Benefactive to the list of cases would thus require that the theory be complemented with a system of redundancy principles regarding the selection of cases for sentences, and would require furthermore that an understanding of the expression of intentional or voluntary acts be accounted for within the case apparatus. Since I am unwilling to face that possibility, my alternative is to reconsider the semantics of sentences with Benefactive phrases. It seems to me that a sentence of the form [John did it for me.] can be understood as involving three basic notions; the one who does something, the Agent ([John]); his action or "offering," the Object ([John did it.]); and the "direction" or receiver of that action or offering, ([me]), the Goal. It can be given a higher-sentence analysis, in other words, with Agent, Object and animate Goal, with the deed performed for somebody's benefit being expressed as the sentence embedded in the Object case. The obligatory presence of the Agent case is accounted for by the embedding context, and the intentionality of the performance on the part of the Agent can be built into the semantic structure of the higher verb. Verbs which satisfy these case frame and semantic conditions are verbs of the type [give] or [offer]. I propose, then, that sentences with Benefactives in them really come from more complicated constructions in which it is spelled out that somebody offers some deed to somebody else, and I posit for this an abstract verb of giving. The clause-conflating principles then, however they aretto be stated, will have the effect of changing something like [I give you (I do it)] into [I do it for you.]; for some languages, like for example Mandarin and a number of the languages of West Africa, the conflation process does not take place, and we get on the surface something like what I've proposed for the deep structure.

13. I have said that the experiencer of a psychological event is represented by a noun phrase in the Experiencer case, and that some other case will indicate the cause or the content of that psychological experience. In a sentence like [I imagined the accident.], I am inclined to call [the accident] the Object, and say that it identifies the content of the experience; in a sentence like [The noise frightened me.], I regard [the noise] as the Instrument, where

I have in mind that sense of Instruments which covers the stimulus
or reacted-to situation in the description of a mental event.
Sometimes both Instrument and Object co-occur in the description
of some mental event, as in [The noise reminded me of the accident.];
that is why I believe both Instrument and Object are needed, in
addition to Experiencer, in the description of psychological-event
predicators.

These are intuitive decisions, and for a number of sentences
my intuitions fail. In a sentence like [John loves Mary.], is
Mary the cause or the content of John's experience? Do [fear] and
[frighten] differ only in that the latter requires Psych Movement,
or is the non-Experiencer case for [fear] the Object, that for
[frighten] the Instrument? Understandings that can be assigned to
the separate cases might then explain why we allow ourselves to
conclude such different things regarding the inner world of some-
body who says [I used to fear the devil.] as opposed to somebody
who ways [The devil used to frighten me.]. Regrettably, I do not
know how to answer these questions.

14. So far I have spoken only about certain conceptual problems
associated with the effort to reconstruct a transformational grammar
along the lines of a case grammar. You may have noticed that I
have so far failed to give tree diagrams or any other sort of
explicit symbolic representations of the structures I have been so
cavalierly talking about. That failure stems not merely from a
desire to save space. I simply have not found an acceptable
notation for the sorts of things I want to be able to represent.

The main problem is how one can indicate the case role of noun-
phrases and embedded clauses in the sentences of which they are
constituents, and what consequences the choice of notation has
for the operation of the grammar.

One possibility for a notation is the one by which cases are
indicated as features on nouns. For a sentence like [John gave the
flower to Mary.], the complex symbol associated with [John] contains
the feature +Agent, that associated with [flower] contains the
feature +Object, and that associated with [Mary] contains the feature
+Goal. I find this inadequate, first of all because the notion of
case has nothing to do with properties of nouns, but rather with
relations or metarelations which nouns have with the rest of the
clause in which they occur. A second reason for finding it inadequate
is that it forces all instances of clause embedding to be treated as
instances of adjunction to nouns. This might be workable in some
contexts, but not, I think, in all. Thus, [John's screaming caused
the accident.] can be interpreted as [The event of John's
screaming caused the accident.], and [That John loves Mary amuses
Mary.] can be interpreted as [The fact that John loves Mary amuses
Mary.]; but it is not so easy to see what can be done for the
embedded Object Sentence in, say, [I suspect that John loves Mary.].

A second possibility is that of assigning case features to
verbs, and just saying that for each verb we specify as its valence
a collection of case relationships, that the number of noun-phrases
the verb can occur in construction with is determined by the number

of cases specified in its valence feature, and that the association
of the individual noun-phrases with the individual cases is to be
achieved by counting from left to right and by checking off the
cases in accordance with the case hierarchy. This too might be
workable, but it introduces at least two complications; the first
being that keeping track of the case identity of noun-phrases will
become difficult after movement transformations are applied,
especially if your theory is not wealthy enough to own derivational
constraints; the second being that the theory will need to have
special ways of distinguishing valence information associated in
the dictionary with the lexical item and valence features occurring
with those lexical items in individual sentences, in just those
cases where the item is compatible with any of several combinations
of cases.

These are both, in one way or another, fairly bad notations for
case grammar. There is one that is still worse, however, and that
is the one by which the case roles of noun phrases are indicated by
means of labeled nodes dominating the associated sentence or noun-
phrase. The cases are clearly not categories, though in this
notation they are treated just like grammatical categories; the
theory that represents them in this way needs therefore to distinguish
two types of category symbols and needs to have variables ranging
over case labels; and the theory needs devices for changing case
labels, devices for deleting case labels and restructuring what is
left, and so on. The proposal could not be taken seriously enough
to be included in this discussion were it not for the fact that it
is the practice which I have followed; that transformational rules
stated in its terms are fairly easy to conceptualize; that it follows
the tradition in transformationalist studies by which labels are
assigned to verb-phrase constituents and co-constituents that are
not subjects and objects, such as Manner and Extent and Time phrases;
and that since case constituents sometimes need to be built up with
the addition of complementizers and prepositions and the like, the
case labels at least provide foundation nodes onto which these
enlarged structures can be built.

Actually the notations which are most pleasing to me on the
deep-structure level are unfortunately notations that lend themselves
least to the view that deep structure configurations and surface
structure configurations belong to the same species. I have in mind
a kind of dependency notation which makes use of kernel trees or
stemmas each containing one root node, one or more labeled branches,
and a variable or index symbol at the leaf end of each branch. The
node is a complex symbol containing semantic, phonological and rule
features information, as well as the case valence. The branches
are labeled with case labels, and are ordered from left to right
according to the case hierarchy. The variables at the leaf end of
the branches represent the entities which bear case relations to the
predicator represented at the node. Any sentence has at base a
collection of stemmas of this type, plus information about identities
involving the variables; either there can be co-reference among the
variables, or some of the variables can be identified with some of
the stemmas. That much identifies the semantic interpretation of

the sentence.

As input to the transformational rules, in place of the notion of deep structure, there is what one might call the **composition plan** of the sentence, the plan by which the various stemmas are to be incorporated into each other to construct the surface sentence. The general effect of the composition plan will be to indicate which variables are to be replaced by lexical items and which stemmas are to be taken as nexus for which other stemmas. Using Sandra Thompson's examples (1970), the two sentences [I know a girl who speaks Basque.] and [A girl I know speaks Basque.] will differ only on the level of the composition plan. The transformations will provide for lexical insertion and lexical modification, and will somehow provide for the construction of the surface sentence from all this.

I have a few proposals abrewing on how such a grammar can operate, but problems associated with deletion, topic/comment, quantification, and the representation of manner and degree adverbs seem at the moment fairly overwhelming. Being now a Californian, I have become acquainted with some people who know a lot about magic and witchcraft. I am counting on their services to help me complete this research.

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