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

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) Fillmorean S.S.   Non-Fillmorean S.S.

```
          S                                  S
        /   \                              /   \
     Nom      S                          NP     VP
      |      / \                               /  \
     NP     O   V                            NP    V
            |
           NP
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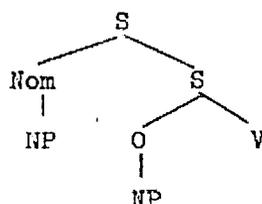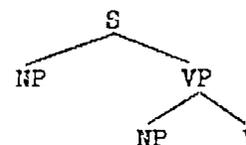
## I.   Is the Rule of Experiencer Shunting Well-Motivated?

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."
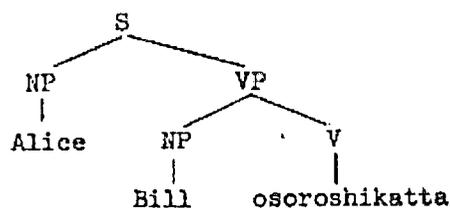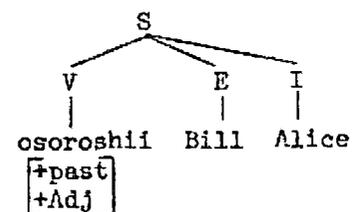
     S.S.   D.S.

```
          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
            |       |                |
           Bill  awaredatta       ⎡+past⎤
                                  ⎣+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]
```
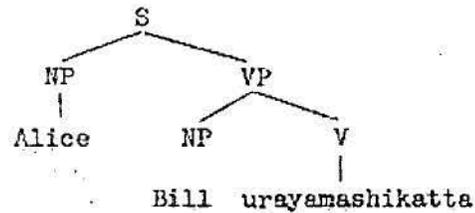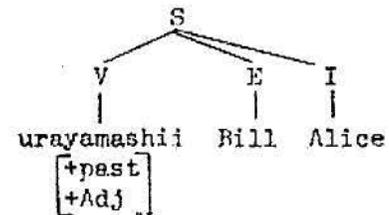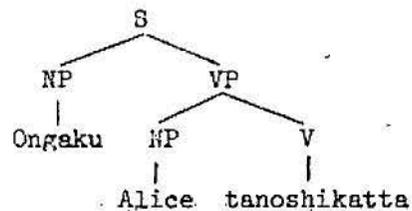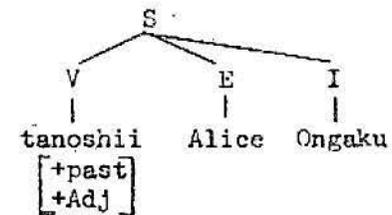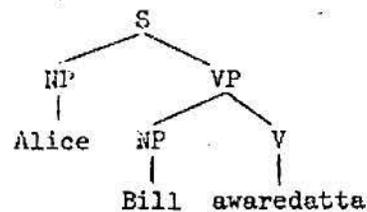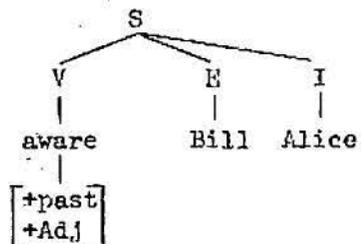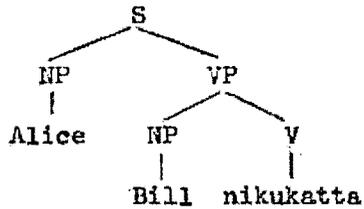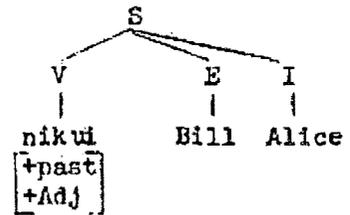
(7) (Zibun-no) tsumi-ga Alice-niwa hazukashikatta.
      self   crime   " -to   was shameful
     "Her own crime was shameful to Alice."

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]
```
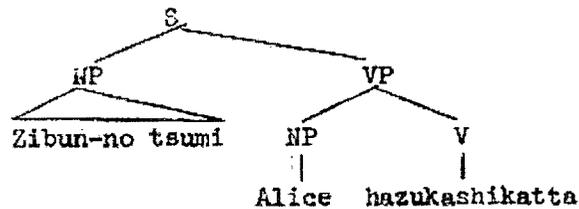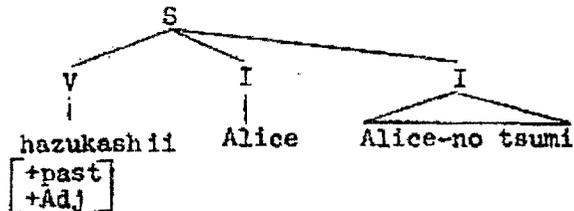
(8) Chichi-no shi-ga Alice-niwa kanashikatta.
     father's   death   " -to   was sad
     "Father's death was sad to Alice."

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 │
     └─────┘
```
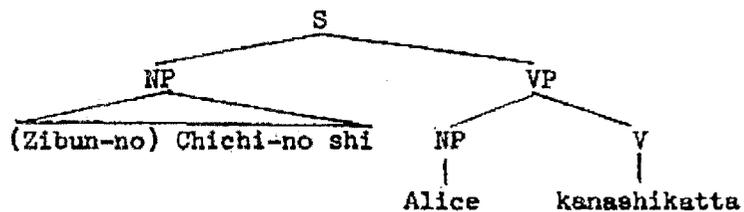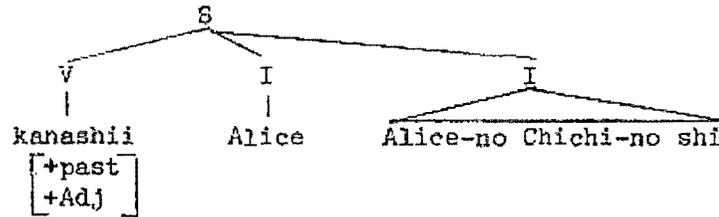
As the Fillmorean deep case analysis reveals, in each sentence the
Experiencer NP is 'shunted' and the Instrument NP, 'the stimulus of
an event', has become the subject of the surface structure. Thus, it
seems that the General Experiencer Shunting Rule operates here.
However, I would like to claim that 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

$$(^{V}c_{i} \quad omissible) \quad (\ c \ )^* \quad \underline{c_i} \quad \underline{X} \implies 1 \ 3 \ \# \ 2$$

$$\underline{\hspace{5cm}}$$
$$1 \qquad\qquad\qquad 2 \quad 3$$

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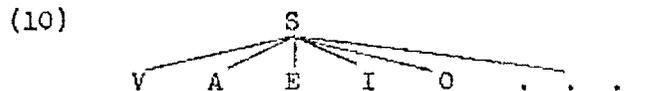
The function of the General Experiencer Shunting rule is to shunt the
Experiencer NP so that it will not get involved in the operations of
the rules which follow it. Fillmore has given the following examples
in his syntax class in the 1970 Summer Linguistic Institute at Ohio State.

(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
```
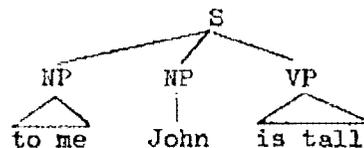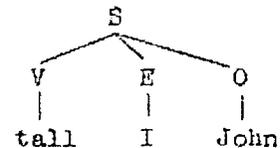
(12) To me, John resembles Mary.
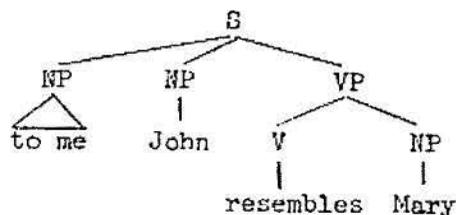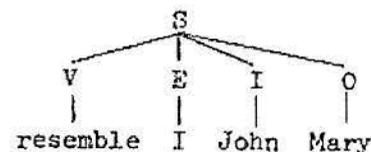
S.S.   D.S.


(13) To me, it seems that John is a genius.
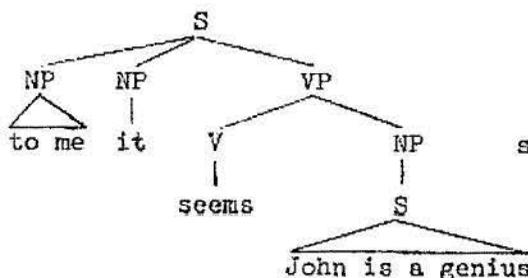
S.S.   D.S.
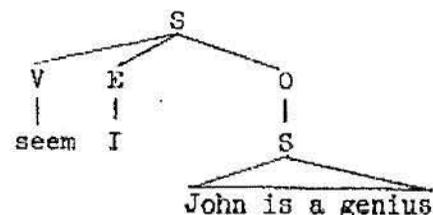
In each case, the Experiencer NP I has been 'shunted'. That is why it has not become the surface subject, so Fillmore explains.

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.

```
            S
       ___/ \___
      NP        NP
      |        / \
      I       V   NP
              |   / \
            fear  the dog
```

D.S.

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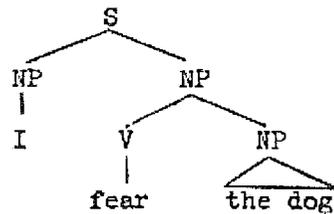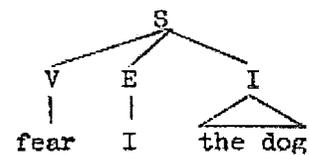
(15)   I believe that John is a genius.

S.S.

```
            S
        __/ \__
       NP      VP
       |      / \
       I     V   NP
             |   |
          believe S
                 / \
              John is a genius
```

D.S.
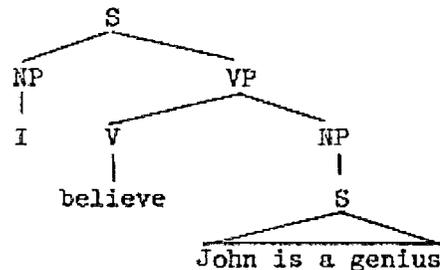
```
           S
        _/ | \_
       V    E    O
       |    |    |
    believe  I    S
                 / \
            John is a genius
```
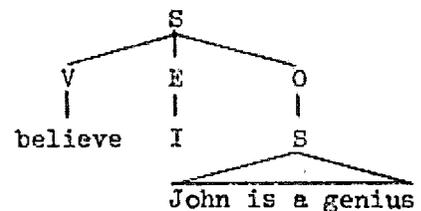
In (14) and (15) the Experiencer I is clearly well-qualified to be called
so, for it is I who experiences or undergoes the effect of an action
identified by the verb fear or believe. Thus the relationship between
the Experiencer and its predicate is entirely different in (11), (12)
and (14), (15). In 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 }  NP    V
    { watashi-niwa } |    |
                     S   { omou }
                    / \  { omowareru }
              John-wa segatakai
```

D.S.

```
                    S
         ┌──────────┼──────────┐
         V          E          O
         │          │          │
    ┌─omou──┐    watashi       S
    │omowareru│              ┌──┴──┐
    └────────┘          John-wa segatakai
```
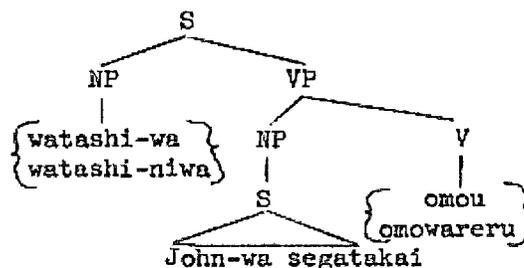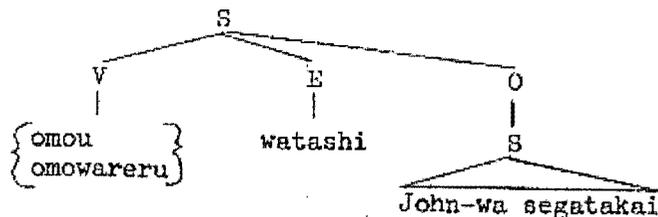
(17)   {watashi-wa }   John-wa Mary-ni niteiru   to {omou   }
        {"   -niwa}   "   {omowareru }

        {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
```
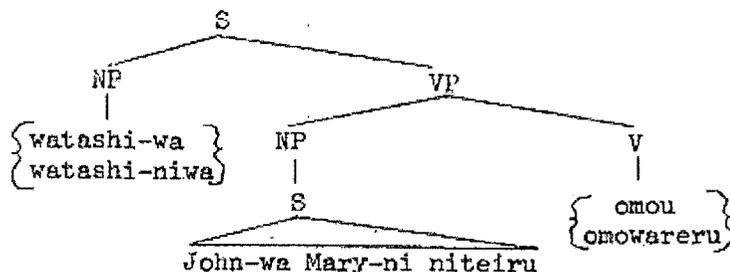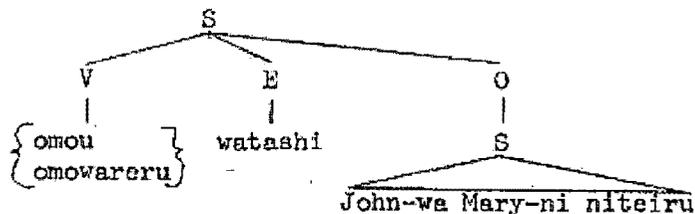
I would like to claim that English sentences like (11) and (12) too
should be analysed in the same fashion and that the Experiencer in
(11) and (12) has derived from the higher sentences. What English
grammar needs, it seems to me, is an Experiencer Lowering rule and not
an Experiencer Shunting rule. 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.
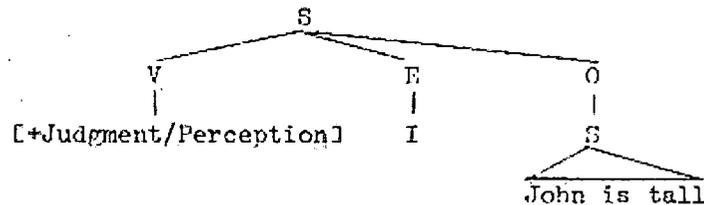
(21) To me, John resembles Mary.

D.S.
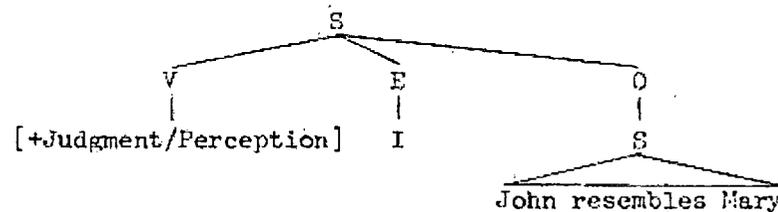
Now, let us go back to his example (13). I agree with Postal in analyzing the verb _seem_ as Psych Movement verb. The reason why _to me_ is fronted to the beginning of the sentence in (13) is because Ross's Topicalization rule has operated on the sentence (22) and yielded the sentence (13).

(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.
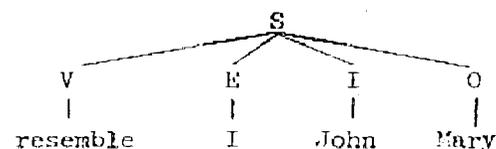
Fillmore's analysis claims that the combination of E, I, O is perfectly acceptable for the simple sentence at the deep structure level of human language. I would like to argue that this is wrong. I shall propose, as a deep structure constraint, that the combination of E, I, O cannot occur in the simple 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 $\left\{\begin{array}{l}\text{killed}\\ ^*\text{hated}\end{array}\right\}$ 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⎭
```
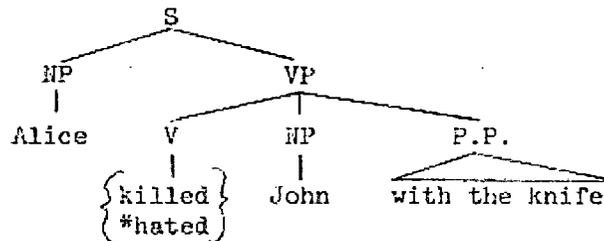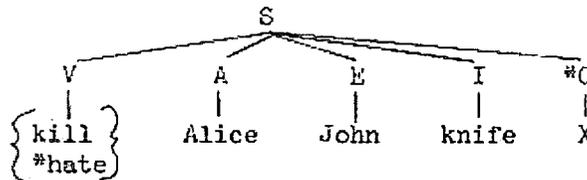
Instrument$_2$:   3. Agent and Instrument$_2$ are mutually exclusive.

4. Instrument$_2$ has to co-occur with Experiencer.

5. When Experiencer becomes the surface subject,
    Instrument$_2$ 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
```
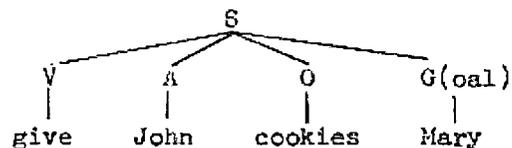
(31) *John hated Mary cookies.

*D.S.

```
                    S
          ┌────────┼────────┬────────┐
          V        E        I        O
          │        │        │        │
        hate     John     Mary    cookies
```
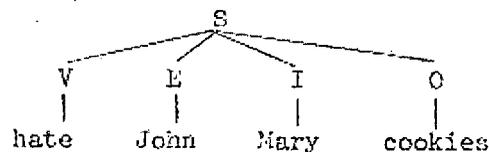
(32) *Mary scared John cookies.

*D.S.

```
                    S
          ┌────────┼────────┬────────┐
          V        E        I        O
          │        │        │        │
        scare    John     Mary    cookies
```
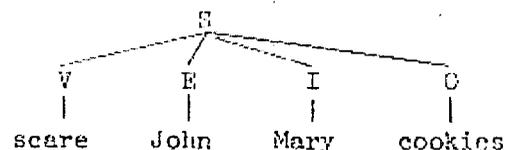
As above examples show, there seems to be no possible way to get the deep level combination of E, I, O in the simple sentence.

Recall Postal's strike/similar analysis for the verb remind. He argues quite convincingly that by decomposing the verb remind into the two underlying semantic verbs whose semantic properties are quite similar to the lexical verbs strike and similar, 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.

D.S.

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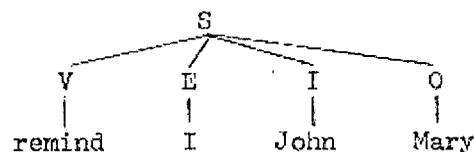
However, if we assume this combination is unacceptable, we are forced to find another way of explaining the sentence. Compare this sentence with the sentence (34).

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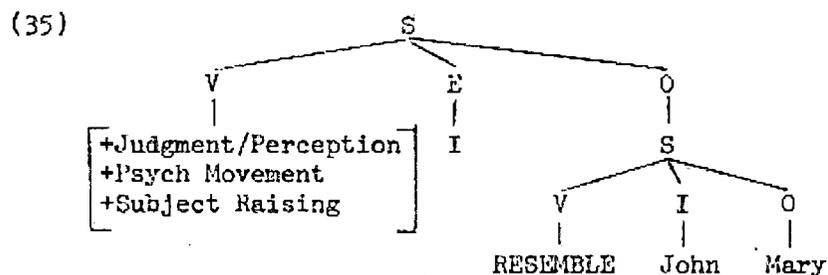
This analysis claims that the verb remind cannot be inserted at the deep
structure level. Therefore, it seems to me that a Fillmorean deep
case analysis forces us to admit that the lexical insertion cannot be
done in a block at the deep structure level and that the transformational
rule can operate on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

   I would like to interpret the impossibility of the E, I, O combina-
tion 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) I_i hate the story about $\left\{ \begin{array}{l} *him_i \\ himself_i \\ me_i \\ *myself_i \end{array} \right\}$ that John$_j$

always tells.

(37) I_i told the story about $\left\{ \begin{array}{l} *him_i \\ *himself_i \\ *me_i \\ myself_i \end{array} \right\}$ that John$_j$

likes to hear.

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

(38)
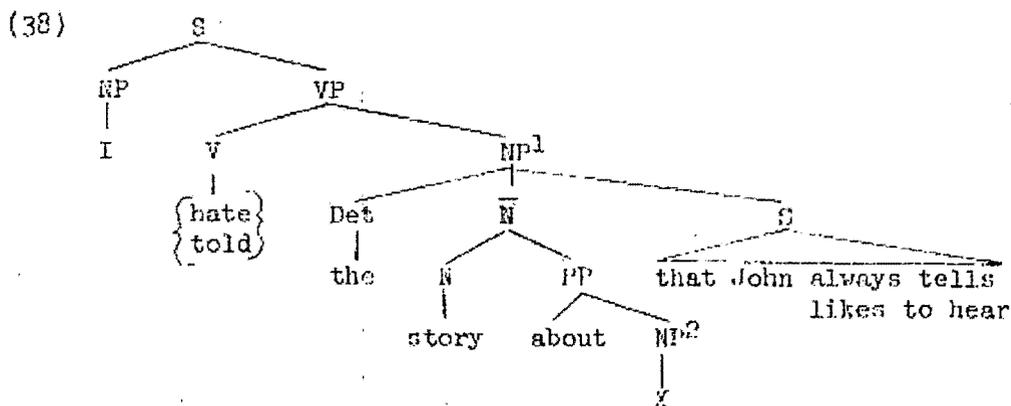
Observe that in (36) backward reflexivization takes place, while in (37) forward reflexivization takes place. Jackendoff's interpretive rule is quite helpless in predicting which NP in the sentence the reflexivized form is coreferent with. Jackendoff assumes that "there is an optional semantic rule that 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."
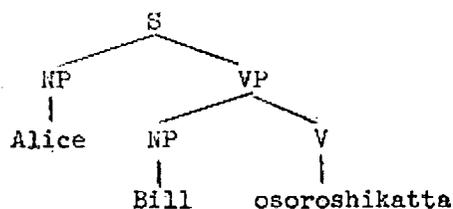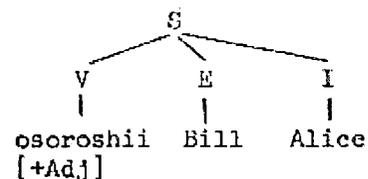
         S.S.   D.S.

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

S.S.

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

D.S.

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

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

S.S.

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

D.S.

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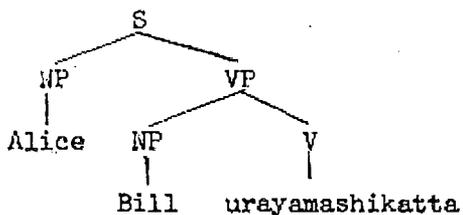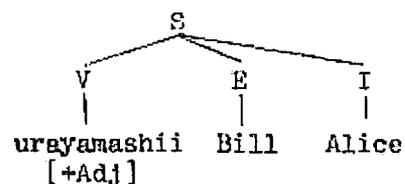
b. Bill-ga Alice-o urayanda.
    "   "   envied
    "Bill envied Alice."

S.S.
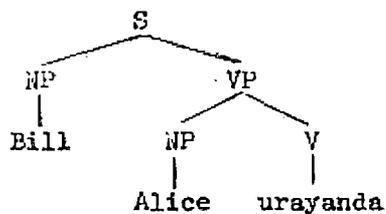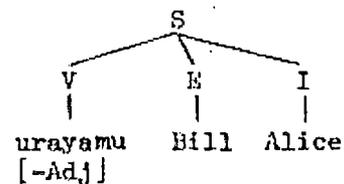
```
          S
        /   \
      NP     VP
       |    /  \
     Bill  NP   V
           |    |
         Alice  urayanda
```

D.S.

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

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

S.S.

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

D.S.

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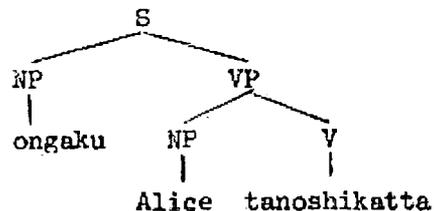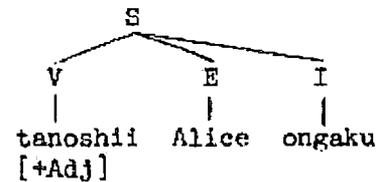
b. Alice-ga ongaku-o tanoshinda.
   "   music.   enjoyed
   "Alice enjoyed the music."

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]
```
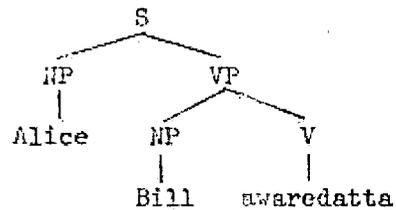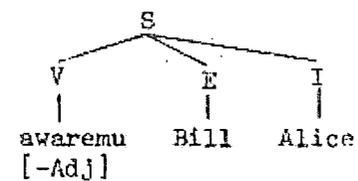
b. Bill-ga Alice-o awarenda.
   "Bill pitied Alice."

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]
```
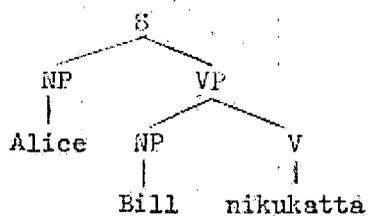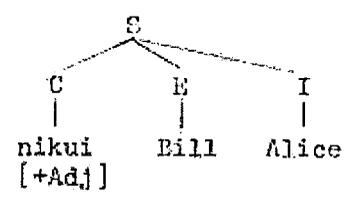
b. Bill-ga Alice-o nikunda.
   "   "   hated
   "Bill hated Alice."

S.S.

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

D.S.

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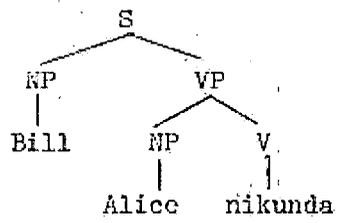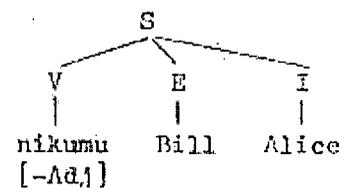
(47) a. Zibun$_i$-no tsumi-ga Alice$_i$-niwa hazukashikatta.
     self   crime   "   -to   was shameful
     "Her own crime was shameful to Alice."

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]
```
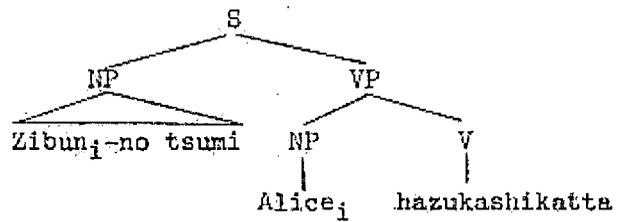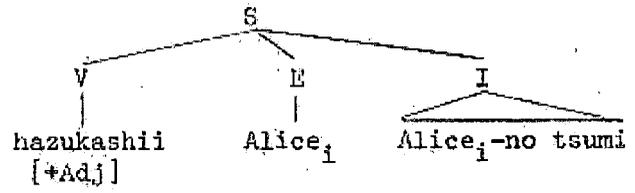
b. Alice$_i$-ga zibun$_i$-no tsumi-o hazita.
   "   self's   crime was ashamed of
   "Alice was ashamed of her own crime."

S.S.   D.S.

```
        S
     /     \
   NP       VP
    |      /   \
  Alice_i NP     V
        /  \     |
  zibun_i-no tsumi  hazita
```

```
        S
     /  |   \
   V    E     I
   |    |    /  \
 haziru Alice_i Alice_i-no
 [-Adj]        tsumi
```
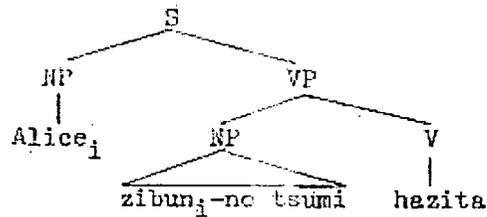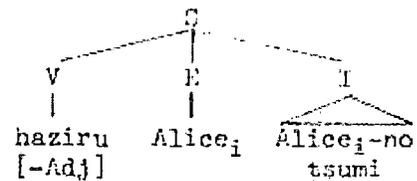
(48) a. Chichi-no shi-ga Alice-niwa kanashikatta.
         father's 'death   " -to   sad
         "Father's death was sad to Alice."

S.S.   D.S.

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

```
          S
       /  |   \
     V    E     I
     |    |    /  \
 kanashii Alice_i Alice_i-no
 [+Adj]         chichi-no shi
```
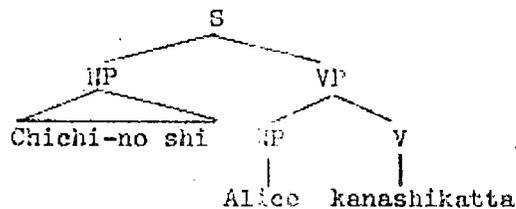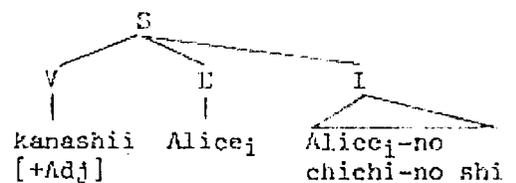
b. Alice-ga chichi-no shi-o kanashinda.
     "   father's death was sad about
    "Alice was sad about father's death."

S.S.   D.S.

```
          S
       /     \
     NP       VP
     |       /  \
   Alice    NP    V
           /  \   |
    chichi-no shi kanashinda
```

```
          S
       /  |   \
     V    E     I
     |    |    /  \
 kanashimu Alice_i Alice_i-no
 [-Adj]          chichi-no shi
```
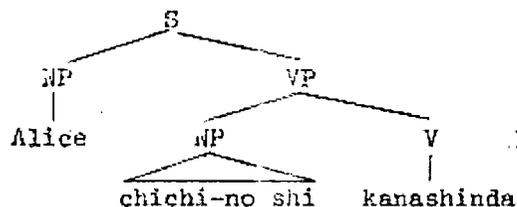
The syntactic differences between group (a) and group (b) are quite
systematic; 1) The subject in group (a) shows up as the direct object
in group (b). 2) The Indirect object in group (a) shows up as the subject
in group (b). 3) Group (a) takes the adjective as its predicate, while
group (b) takes the 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 mam naku 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 Pronomi-
nalization, no feature-changing transformation may change features within
the complex NP construction. He knows, however, that Japanese Reflexi-
vization 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-o naka-no $zibun_i$-o nagameta.
      "   mirror' inside's self   watched
      "$Alice_i$ watched herself$_i$ in the mirror."

(52) $Alice_i$-wa $zibun_i$-o 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.
      "   self   "   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 $Alice_i$ want to do so, herself$_i$ studies."

(58) *($Zibun_i$-o aishita) otoko-ga $Alice_i$-o koroshita.
       self   loved   man   "   killed
      *"The man who loves 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 precede and command 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 $\left\{ \begin{array}{c} \text{kanojo-o} \\ \text{Alice-o} \end{array} \right\}$ koroshita.

　　　　"　　loved　　　man　$\left\{ \begin{array}{c} \text{her} \\ \text{Alice} \end{array} \right\}$　killed

　　"The man who loved Alice killed $\left\{ \begin{array}{c} \text{her} \\ \text{*Alice} \end{array} \right\}$."

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

(61')　S.S.

(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 <u>precedes but does not
command</u> 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]
```
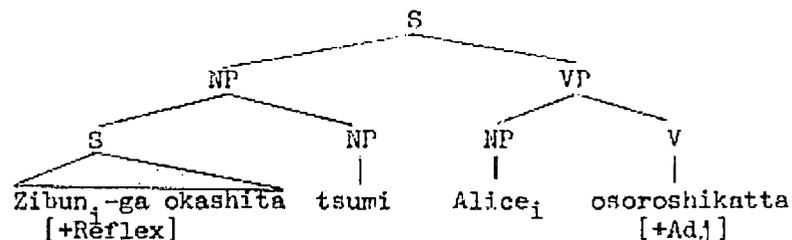
(64) (Helen-ga zibun_i yori utsukushii)koto-ga Alice-niwa
              self   more than beautiful "   " -to
         urayamashikatta.
         was enviable
      *"That Helen is more beautiful than herself_i was enviable
           to Alice_i."

(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$_i$."

S.S.


```
                          S
                 _____|_____
                NP                  VP
          _____|_____        _____|_____
         S            Alice_i        V
    _____|_____                      |
  Zibun-ga  ninkimono dearu      tanoshikatta
   [+Reflex]                        [+Adj]
```
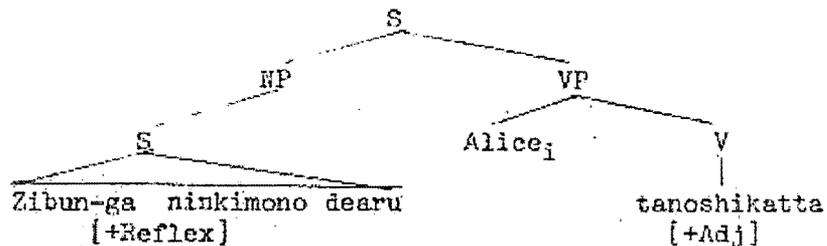
(66) (Helen-ga zibun$_i$-yori utsukushii koto)-ga Alice-niwa nikukatta.
      "   self more than beautiful that   "   -to   hateful
*"That Helen was more beautiful than herself$_i$ was hateful
      to Alice$_i$.

S.S.


```
                          S
                 _____|_____
                NP                  VP
          _____|_____        _____|_____
         S            Alice_i        V
    _____|_____                      |
 Helen-ga zibun_i yori utsukushii  nikukatta
   [+Reflex]                        [+adj]
```
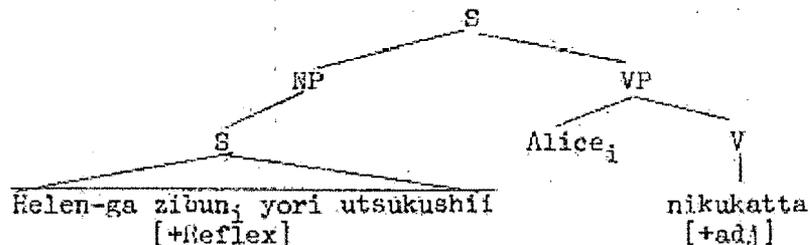
(67) (Bill-ga zibun$_i$-o sittateiru koto)-ga Alice$_i$-niwa awaredatta.
      "   self   adored   that   "   to was pitiful
*"That Bill adored herself$_i$ was pitiful to Alice$_i$.

S.S.


```
                          S
                 _____|_____
                NP                  VP
          _____|_____        _____|_____
         S            Alice_i        V
    _____|_____                      |
 Bill-ga zibun_i-o sittatteiru    awaredatta
   [+Reflex]                        [+Adj]
```
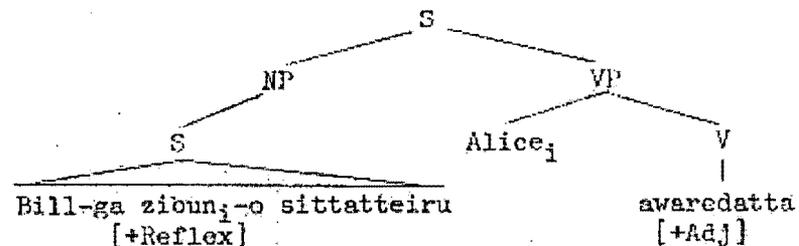
(68) (Zibun$_i$-ga okashita) tsumi-ga Alice$_i$-niwa hazukashikatta.
      self's   committed crime   "   -to   was shameful
*"The crime which herself$_i$ had committed was shameful
      to Alice$_i$."

S.S.

```
                        S
              _____/  _____
            NP                    VP
        ___/  \___          ___/  \___
       S          NP       NP          V
    __/|\__        |        |          |
Zibun_i-ga okashita tsumi  Alice_i  hazukashikatta
[+Reflex]                            [+Adj]
```
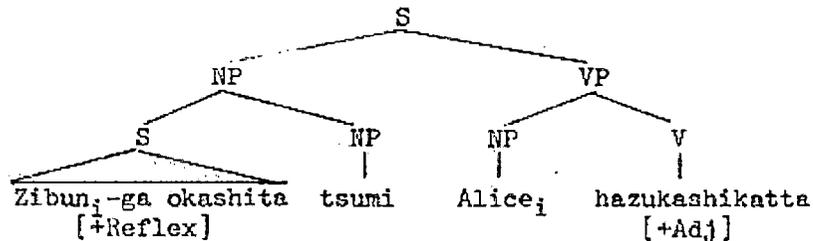
(69) (Zibun_i-ga Bill-ni nikumareteiru koto)-ga Alice_i-niwa
     self   " -by   is hated   that   Alice-to
        kanashikatta.
        was sad
    *"That herself_i was hated by bill was sad to Alice_i."

S.S.

```
                          S
                 _____/  _____
               NP                    VP
            __/  \__             ___/  \___
           S                   Alice_i      V
       ___/|___                             |
Zibun_i-ga Bill-ni nikumareteiru        kanashikatta
        [+Reflex]                          [+Adj]
```
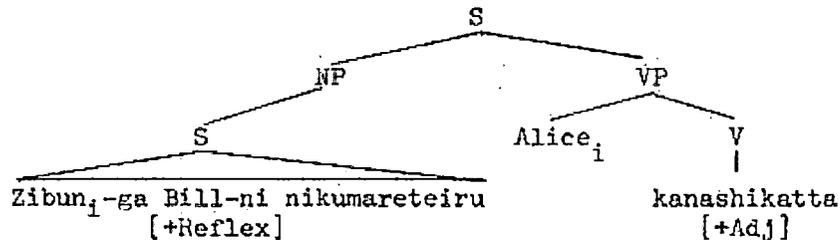
Since in every sentence the first of the two coreferential NP's precedes but does not command the second one, it should be the case tha Reflexivization be blocked and Pronominalization take place. However, mysteriously enough, Backward Reflexivization takes place. The grammaticality of the following sentences shows that Pronominalization operates in these constructions, as our principle predicts.

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

(71) (Helen-ga Alice_i yori utsukushiikoto)-ga kanojo_i niwa
        urayamashikatta.
     "That Helen was more beautiful than Alice_i was enviable
        to her_i."

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

(73) (Helen-ga Alice_i-yori utsukushii koto)-ga kanojo_i-niwa
        nikukatta.
     "That Helen was more beautiful than Alice_i was
        hateful to her_i.

(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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