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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 8(0)

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Publication Date

1986

Peer reviewed

COMPLEMENT SELECTION AND THE LEXICON
IN JAPANESE

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ABSTRACT

This study is on the extended line of Grimshaw 1979, which explains the complement selection in Japanese. By extending Grimshaw's analysis that the combination of predicates and their complements are explicable by imposing well-formedness conditions on two different levels of representation: one at the syntactic level; the other at the semantic level, the analysis given here which utilizes two semantic restrictive features under the semantic feature: [+presupposition] and [±factive], is able to explain the anomalies concerning the complementizer selection in Kuno 1973.

INTRODUCTION

As far as complement selection is concerned, Bresnan 1972 and Chomsky 1973 assumed that the selectional restrictions between verbs and types of complements are made solely on syntactic level. However, Grimshaw 1979 claims that the combination of predicates and their complements are explicable by imposing well-formedness condition on two different levels of representation, i.e., one at the syntactic level, and the other at the semantic level. That is, subcategorization gives restrictions between verbs and the type of complements, and the semantic selection restricts the combination between verbs and the semantic type of their complements. Grimshaw 1979 argues that it is not possible to reduce the two restrictions to either one of levels.

For ease of exposition, observe examples in (1).

(1) a. John wondered [who Bill saw].
   b. John wondered *[that Bill saw someone].
(2) a. John thought [that Bill saw someone].
   b. John thought *[who Bill saw].

The verb wonder takes only questions, but does not take that-complements. However, the verb think takes that-complements and not questions. At the syntactic level, what we need is for the verb wonder and the verb think to have the syntactic feature +[___S̄]. At the semantic level, the verb wonder requires questions, that is, +[___Q], while the verb think requires propositions, that is, +[___P]. Figure 1 summarizes what has been discussed so far.

The plausibility of this analysis is attested by null complement anaphora such as the following:

(3) A: Did John leave?
   B: *I agree.
      I don't know.
(4) A: John is telling lies again.
   B: I agree.
      It's too bad.
     *I inquired.

In (3), B's answer is used in response to A's question. Therefore, in order for this discourse to be complete, B's answer

	syntactic level	semantic level
wonder	+[___S̄]	+[___Q]
think	+[___S̄]	+[___P]

Figure 1: **Well-formedness conditions of wonder and think**

requires a question as its interpretation. The ill-formed discourse will be ascribed to the fact that the verb _agree_ does not take +[___Q] as its semantic feature. On the other hand, in (4), the proposition _John is telling lies again_ occurs after _I agree_ and _It's too bad_ because they take the feature +[___P]. However, the ill-formedness of *_I inquired_ is due to the fact that _inquire_ only takes +[___Q]. In other words, using two levels of restriction makes it possible to conclude that a null complement anaphora has only to be controlled pragmatically and that there is no need for its antecedent. This is a much more elegant analysis compared to that of Hankamer and Sag 1976 in which they tried to explain the null complement anaphora as a kind of ellipsis. It will be enough to point out one example of Grimshaw 1979 to refute Hankamer and Sag 1976.

(5)   John asked me <u>the time</u>.
          =what time it was
(6)   Bill asked me <u>the time</u> $\left\{ \begin{array}{l} \text{(but) I didn't know.} \\ \text{so I inquired.} \end{array} \right\}$
(7) *I inquired <u>the time</u>.

The sentence (5) includes a concealed question. That is, the NP, <u>the time</u> is interpreted as <u>what time it was</u>. Therefore, the verb <u>ask</u> requires +[___Q]. In (6), the verb <u>inquire</u> requires only +[___$\overline{S}$] syntactically, as the ungrammaticality of (7) shows. However, sentence (6) is totally grammatical, even though a concealed question is not possible in the case of the verb <u>inquire</u>, as in (7). The grammaticality of (6) is attributed to the fact that both verbs <u>ask</u> and <u>inquire</u> require +[___Q] semantically.

COMPLEMENTIZERS IN JAPANESE

In the Japanese language, there are at least four complementizers (<u>koto</u>, <u>no</u>, <u>to</u>, <u>ka</u>). Unlike English complementizers, Japanese complementizers occur at the rightmost end of $\overline{S}$ as the following sentence shows:

(8) [[Mary-ga Jack-o   aishite-iru _S][koto] _{S̄}]-wa
         SUB   OBJ   loves   COMP   SUB

shuuchi-no   jijitsu da.
well-known   fact   is

'It is a well-known fact that Mary loves Jack.'

Following the same line of argument presented in Grimshaw 1979, let us assume that at the syntactic level, verbs or adjectives only have such subcategorization features as $+[\bar{S}\_\_\_]$ or $+[\bar{N}\_\_\_]$, and at the semantic level, verbs or adjectives specify semantic features like P or Q. However, we still have such ungrammatical sentences as follows:[1]

(9) Watashi-wa [[John-ga   Mary-o butsu][{ *koto / no / *to }]]-o
       I   SUB   SUB   OBJ   hit   OBJ
                                                        COMP

mita.
saw

'I saw John hit Mary.'

(10) Watashi-wa [[nihongo-ga   muzukashii][{ koto / *no / *to }]]-o
        I   SUB Japanese SUB difficult   OBJ
                                                          COMP

mananda.
learned

'I learned that Japanese is difficult.'

(11) John-wa [[nihongo-ga   muzukashii][{ *koto / *no / to }]] itta.[2]
       SUB   Japanese SUB difficult   said
                                                   COMP

'John said that Japanese is difficult.'

The ungrammatical sentences suggest that we need further specifications along the line of analysis given by Grimshaw 1979. That is, the semantic feature $+[P\_\_\_]$ has to be more specific to restrict complementizer selections. Kuno 1973 gives partial analy-

[1]Data from (8) through (26) except (20) are from Kuno 1973.

[2]The particle o is deleted obligatory when preceded by the complementizer to.

sis concerning this topic. However, because he differenciates
verbs according to whether verbs include presupposition or not,
some listings of verbs are left unexplained as to why they take
only one complement rather than the others.

The claim to be made under the analysis given here is that
complementizer selections of verbs can be explicable by using two
semantic restrictive features under the semantic feature +[P___],
namely [±presupposition] and [±factive]. The feature [+presup-
position] means that the verb requires P with a presupposition.
The feature [+factive] means that P is based on fact. The whole
combination is summarized in Figure 2.

In Kuno 1973, the verb omow-u 'think' has the semantic
feature [-presupposition] and the verb wasure-ru 'forget'
has the feature [+presupposition]. These carry the grammatical-
ity and the ungrammaticality of (12) and (13).

(12) John-wa [Mary-ga baka da {*koto / to}]-o omotta.
        SUB   SUB stupid is   COMP   OBJ thought

      'John thought that Mary was stupid.'

(13) John-wa [Mary-ga tunbo de aru {koto / no / *to}]-o
        SUB   SUB   deaf   is   COMP   OBJ

      wasurete-ita.
        forgot
      'John forgot that Mary was deaf.'

Complementizer	+[P___]	
	Presupposition	Factive
no	+	+
koto	+	−
to {	−	+
	−	−

Figure 2: Semantic restrictive features under +[P___]

Verbs like haya-gaten-s-uru 'form a hasty conclusion', iw-u 'say', kanchigai-s-uru 'make a wrong guess', and gokai-s-uru 'form the wrong notion' have the semantic feature [-presupposition]. These verbs take only to clause. Observe the following examples.

(14)   John-wa [Mary-ga   shinda $\begin{Bmatrix} \underline{to} \\ *\underline{koto}\text{-o} \\ *\underline{no} \text{ -o} \end{Bmatrix}$]
       SUB   SUB   died
                                     COMP OBJ

$\begin{Bmatrix} \text{haya-gaten-shita.} \\ \text{formed-a-hasty-conclusion} \\ \text{itta.} \\ \text{said} \\ \text{kanchigai-shita.} \\ \text{made-a-wrong-guess} \\ \text{gokai-shita.} \\ \text{formed-the-wrong-notion} \end{Bmatrix}$

       'John $\begin{Bmatrix} \text{formed the hasty conclusion} \\ \text{said} \\ \text{made the wrong guess} \\ \text{formed the wrong notion} \end{Bmatrix}$ that Mary

       had died.'

The following verbs take only the [+presupposition] feature, which tells that the complementizer to is not used.

(15)   John-wa [Mary-ga   tsunbo de aru $\begin{Bmatrix} \underline{koto} \\ \underline{no} \\ *\underline{to} \end{Bmatrix}$]-o
       SUB   SUB   deaf   is   OBJ
                                          COMP

       $\begin{Bmatrix} \text{omoidashita.} \\ \text{ recalled} \\ \text{wasurete-ita.} \\ \text{ had-forgotten} \end{Bmatrix}$
       'John had forgotten that Mary was deaf.'

So far, Kuno 1973 and the analysis given here predict the same data. Kuno 1973 sets the verb shiru 'know' as an exception and lists the following examples.

(16) *Anata-wa [Mary-ga   tunbo da to] shitte-imasuka?
     you SUB   SUB deaf is COMP   know

     'Do you know that Mary is deaf?'

(17) Watashi-wa [Mary-ga tsunbo da to] sonotoki
       I   SUB   SUB deaf is COMP   then

     shitta.
     got-to-know

     'I got to know then that Mary was deaf.'

(18) *[Mary-ga konna   baka   da to] shitte-imashitaka?
       SUB such-a fool is COMP   know

     'Do you know that Mary was such a fool?'

(19) [Mary-ga   konna   baka da to] shirimasen deshita.
        SUB such-a fool is COMP   know   not past

     'I did not know that Mary was such a fool.'

However, a close examination shows that shir-u, which is the present form, means 'come to the state of knowing' or 'get to know', and the past tense shitta means 'came to the state of knowing' or 'got to know'. Shirimasen, which is the negative counterpart of shir-u, means 'not come to the state of knowing' or 'not get to know'. On the other hand, shitte-iru means 'be in the state of knowing'. That is, Kuno 1973 fails to assume that the verb shitte-iru is a stative verb unlike the verb shir-u, which is an action verb. The semantic restrictions of the verbs shir-u and shitte-iru will be as follows:

(20) shir-u: [±presupposition, ±factive]

      shitte-iru: [+presupposition, ±factive]

With (20), we can now clearly explain the grammaticality from (16) through (19).

By extending the semantic restrictions, the analysis given here can now explain anomalies in Kuno's paradigm. First, verbs of perception can take only a no clause.

(21) Watashi-wa [John-ga Mary-o butsu$\left\{\begin{array}{l}\text{no}\\ \text{*koto}\end{array}\right\}$]-o mita.

    I   SUB   SUB   OBJ hit   COMP OBJ saw

'I saw John hitting Mary.'

(22) Watashi-wa [John-ga piano-o hiku$\left\{\begin{array}{l}\text{no}\\ \text{*koto}\end{array}\right\}$]-o kiita.

    I   SUB   SUB   OBJ play COMP OBJ heard

'I heard John playing the piano.'

(23) Watashi-wa [sesuji-ga samuku naru$\left\{\begin{array}{l}\text{no}\\ \text{*koto}\end{array}\right\}$]-o

    I   SUB spine SUB cold become COMP   OBJ

kanjita.
felt

'I felt a cold shiver running down my spine.'

The analysis given here predicts that the verbs in (21)-(23) have the semantic feature, +[P___], [+presupposition, +factive]. This feature specification clearly distinguish <u>no</u> and <u>koto</u>.

    Second, verbs of ordering are specified by the semantic feature, [+presupposition, -factive], which restricts the complementizer to only <u>koto</u>.

(24) Watashi-wa John-ni [hataraku$\left\{\begin{array}{l}\text{koto}\\ \text{*no}\\ \text{*to}\end{array}\right\}$]-o

    I   SUB   to   work   COMP OBJ

$\left\{\begin{array}{l}\text{yookyuu-shita.}\\ \text{demanded}\\ \text{tanonda.}\\ \text{asked}\\ \text{kyoosei-shita.}\\ \text{forced}\end{array}\right\}$

'I $\left\{\begin{array}{l}\text{demanded}\\ \text{asked}\\ \text{forced}\end{array}\right\}$ John to work.'

    Third, verbs of expecting have implication that things to expect have not yet come true. Therefore, the feature [-factive] is assigned to these types of verbs. To put it more precisely, the semantic restriction is +[P___], [±presupposition, -factive], which allow complementizers <u>koto</u> and <u>to</u>.

(25) Mary-wa [John-ga kuru $\begin{Bmatrix} \text{koto-o} \\ \text{to} \end{Bmatrix}$] kitai-shite-ita.
      SUB   SUB come   COMP OBJ was-expecting
      'Mary was expecting that John would come.'

Finally, the verbs of waiting take <u>no</u> and <u>koto</u>. This seems
to be a natural consequence because there have to be things to
wait for when one waits for something. Therefore, the feature
[+presupposition] is marked at the semantic level. Whether the
complementizer <u>no</u> or <u>koto</u> is specified is based on the things to
wait for. The following examples show that the highly abstract
concept is marked [-factive], while waiting for John to come is
less abstract, and rather more factive because the reason that
one can wait for John to come is due to the fact that John is
coming.

(26) a. Watashi-wa [John-ga kuru $\begin{Bmatrix} \text{no} \\ \text{*koto} \end{Bmatrix}$]-o matta.
         I   SUB   SUB come COMP   OBJ waited
         'I waited for John to come.'
     b. Watashi-wa [sekai-ni heiwa-ga otozureru $\begin{Bmatrix} \text{no} \\ \text{koto} \end{Bmatrix}$]
         I   SUB world to peace SUB visits   COMP
     -o   matte-imasu.
     OBJ am-waiting
         'I am waiting for peace to descend on the world.'

CONCLUSION

By subcategorizing the semantic feature +[P____] into the
combinations of [±presupposition] and [±factive], Kuno's anom-
alies come under the regular pattern. It seems that the solution
we have made argues for non-autonomous syntactic hypothesis.
However, the point to be made is that assuming syntax and seman-
tics are two different autonomous systems and that each module
serves to generate grammatical sentences, we will get higher
generalizations in rules of grammar.

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