Global Constraints on Scrambling
in Japanese*

Satoru Nakai

I

There is a transformation called Scrambling in Japanese grammar. It scrambles the constituents of a sentence and changes their positions. For example, (1a) is supposed to be basic, and the other sentences are obtained by applying Scrambling to (1a).

(1)

   Subj to Obj gave 'John gave Mary money.'


c. Mary-ni John-ga okane-o yatta.

d. Mary-ni okane-o John-ga yatta.

e. okane-o John-ga Mary-ni yatta.

f. okane-o Mary-ni John-ga yatta.

Scrambling does not apply freely. There are cases where a certain constituent must not precede or follow a certain other constituent.

One is when such fixed expressions as warukuti-o iw 'to speak ill of' and osezi-o iw 'to say compliments' follow a to-clause. Generally, the verb iw 'say' does not take a direct object (i.e., NP+o). Only limited
kinds of nouns such as warukuti ‘slander’ and osezi ‘compliments’ can
be direct objects of iw. For example, (2) is ungrammatical but (3) and
(4) are both grammatical:

(2) *John-wa Gengo to Sikoo-o iw-ta.1

Top Language and Mind-Obj say-Past
‘*John said Language and Mind.’

(3) John-wa Tom-no warukuti-o iw-ta.

Top Poss slander-Obj say-Past
‘John spoke ill of Tom.’

(4) John-wa Tom-ni osezi-o iw-ta.

Top to compliments-Obj say-Past
‘John paid compliments to Tom.’

When noun phrases such as warukuti and osezi cooccur with a to-clause,
the to-clause must precede the direct object. See below:

(5)

a. John-wa [(Tom-ga) gizensya da]s to]QP Tom-no warukuti-o

Top Subj hypocrite Cop Comp Poss slander-Obj
iw-ta.

say-Past
‘John made a malicious remark that Tom was a hypocrite.’


(6)

a. John-wa Tom-ni [(anata-wa) sinsetu desu ne]s to]QP

Top to you-Top kind Cop aren’t you Comp
osezi-o iw-ta.

compliments-Obj say-Past
‘John made a compliment to Tom that he was kind.’


(5) and (6) show that if the a sentences are basic, Scrambling is pre-
vented from changing the positions of the object and the to-clause.

The other case where Scrambling is blocked is given by Kuno, though he does not explain why Scrambling is blocked. In his arguments for subject raising in Japanese, Kuno points out the fact that it is impossible to prepose the complement clause to the left of the object which has been the subject of the complement clause and has been raised out of the complement clause. (In other words, the derived object cannot move to the right of the complement clause out of which it has been raised.) For example, (7b) is derived from (7a) by Raising, but Scrambling cannot prepose baka da to to the left of Tanaka-o.

(7)

   Top Subj fool Cop Comp thinking was
   ‘Yamada thought that Tanaka was a fool.’ (Kuno’s (17a))

b. Yamada-wa Tanaka-o [[baka da]s to]QF omotte ita. (Kuno’s (17b))
   ‘Yamada thought Tanaka to be a fool.’

c. *Yamada-wa [[baka da]s to]QF Tanaka-o omotte ita. (Kuno’s (66))
   Contrast (7c) with the examples in (8), where the interchange of the indirect object and the complement is possible.

(8)

   Top to it-Obj do Nom-Obj order-Past
   ‘Yamada ordered Tanaka to do it.’

b. Yamada-wa [[sore-o suru]s koto-o]NP Tanaka-ni meizi-ta. (Kuno’s (65b))
   Other examples that support Kuno’s observation are given below:

(9)

Global Constraints on Scrambling in Japanese

‘Taro thought that Jiro’s theory was correct.’


(10)


Comp say-Past

‘People said that Language and Mind was an interesting book.’

b. hitobito-*wa Gengo to Sikoo-o [[omosiro-i hon da]s to]QP iw-ta.


(11)


black-Subj white Cop Comp say-Pres

‘to say that something is white though actually it is black’

b. kuro-* [s] [siro da]s to]QP iw-ru.


The purpose of this paper is to account for why Scrambling is blocked in these two cases. In the following sections I will propose two global constraints on Scrambling.

II

First I will study the case of the sequences S-to warukuti and S-to osezi.

One might want to account for the ungrammaticality of (5b) and (6b) by saying that warukuti-o iw and osezi-o iw are idiomatic expressions and therefore nothing can intervene between the NP-o and the verb iw. This explanation, however, can be easily rejected. Consider the following examples, where the dative object (12a and 13a) or the adverb (12b
and 13 b) comes between the NP-o and the verb iw.

(12)


b. John-wa Tom-ni warukti-o tugitugito iw-ta.

one after another

(13)


b. John-wa Tom-ni osezi-o iyaiya iw-ta.

reluctantly

Therefore, a different explanation must be sought for.

Consider the following examples:

(14)

a. John-wa [[[Tom-ga) gizensya da]s to]QF iu Tom-no
   Top Subj hypocrite Cop Comp to-the-effect Poss
   warukti-o]NP iw-ta.
   slander-Obj say-Past
   'John made a malicious remark to the effect that Tom was a hypocrite.'

b. John-wa Tom-ni [[[anata-wa sinsetu desu ne]s to]QF
   Top to you-Top kind Cop aren't you Comp
   iu osezi-o]NP iw-ta.
   to-the-effect compliments-Obj say-Past
   'John paid Tom a compliment to the effect that he was kind.'

As the English translation shows, these two sentences contain the construction which is called appositive (in traditional grammar) or NP complementation (in generative grammar). (15) illustrates this:

(15)

a. [[[Tom-ga gizensya da]s to iu Tom-no warukuti]NP
   COMPLEMENT TO-THE HEAD NOUN
   EFFECT-THAT
Global Constraints on Scrambling in Japanese

b. \([\text{anata-wa sinsetu desu ne}_s \quad \text{to iu} \quad \text{osezi}_n\]_P
complement to-the- head noun
effect-that

As Greenberg points out,⁴ the modifier precedes the head noun in SOV languages. In Japanese, which is a typical SOV language, the complement must precede but cannot follow the head noun. Hence,

(16)

a. *\text{John-wa} \quad [\text{Tom-no warukuti-o}_n\]_P \quad [\text{Tom-ga gizensya da}_s \quad \text{to iu} \quad \text{iw-ta}.\]

head noun complement

b. *\text{John-wa} \quad \text{Tom-ni} \quad [\text{osezi-o}_n\]_P \quad [\text{anata-wa sinsetu desu ne}_s \quad \text{to iu} \quad \text{iw-ta}.\]

head noun complement

Now notice that (5 a) and (6 a) are identical with (14 a) and (14 b) except that the latter but not the former have \text{iu} following the to-complement. If \text{Tom-ga gizensya da to} is the complement and \text{Tom-no warukuti} is the head noun in (5 a), and if \text{anata-wa sinsetu desu ne to} is the complement and \text{osezi} is the head noun in (6 a), then the ungrammaticalness of (5 b) and (6 b) can be explained easily, because in (5 b) and (6 b) the to-complements are following the head nouns.

But there is no syntactic evidence (at least not on the surface level) to prove that the sequences [\text{Tom-ga gizensya da to}] [\text{Tom-no warukuti}] and [\text{anata-wa sinsetu desu ne to}] [\text{osezi}] each form one constituent. Instead, there is evidence against the constituency of the sequences.

First, Pseudo-Clefting cannot be applied as seen in (17), which means that neither \text{Tom-ga gizensya da to Tom-no warukuti} nor \text{anata-wa sinsetu desu ne to osezi} is a constituent.
Global Constraints on Scrambling in Japanese

(17)

a. *John-ga iw-ta no-wa [Tom-ga gizensya da to]_{QP} [Tom-no warukuti]_{NP}  
   what John said [that Tom is a hypocrite] [slander about Tom]  
   da. (⟨⟨5a⟩⟩)  
   is

b. *John-ga Tom-ni iw-ta no-wa [anata-wa sinsetu desu ne to]_{QP} [osezi]_{NP}  
   what John said to Tom [that you are kind, aren’t you] [compliments]  
   da. (⟨⟨6a⟩⟩)  
   is

Contrast (17 a) and (17 b) with (18 a) and (18 b), which are derived from (14a) and (14b) by Pseudo-Clefting.

(18)

a. John-ga iw-ta no-wa [[Tom-ga gizensya da to]_{QP} iu  
   what John said [that Tom was a hypocrite]  
   [Tom-no warukiti]_{NP} da. (⟨⟨14a⟩⟩)  
   [slander about Tom] is

b. John-ga Tom-ni iw-ta no-wa  
   what John said to Tom  
   [[anata-wa sinsetu desu ne to]_{QP} iu [osezi]_{NP} da. (⟨⟨14 b⟩⟩)  
   [that you are kind, aren’t you] [compliments] is

Second, the to-complements can be preposed in (5a) and (6a) but not in (14). Contrast (19) and (20):

(19)

a. [Tom-wa gizensya da to]_{QP} John-wa Tom-no warukuti-o iw-ta.  
   (⟨⟨5a⟩⟩)

b. [anata-wa sinsetu desu ne to]_{QP} John-wa Tom-ni osezi-o iw-ta.  
   (⟨⟨6a⟩⟩)
Global Constraints on Scrambling in Japanese

(20)

a. *[Tom-wa gizensya da to]QP iu John-wa Tom-no warukuti-o iw-ta.
   \(<\!(14\ a)\)

b. *[anata-wa sinsetu desu ne to]QP iu John-wa Tom-ni osezi-o iw-ta
   \(<\!(14\ b)\)

The difference of constituent structures between (14 a) and (5 a) is illustrated in (21), and the difference of constituent structures between (14 b) and (6 a) is illustrated in (22).

(21)
The Tree Structure of (14 a):

(22)
The Tree Structure of (14 b):
The Tree Structure of (6 a):

Though it has been proved syntactically that neither Tom-ga gizensya da to Tom-no warukuti nor anata-wa sinsetu desu ne to osezi constitutes an NP, it is clear that semantically Tom-ga gizensya da to Tom-no warukuti and anata-wa sinsetu desu ne to osezi are interpreted to consist of a complement and a head noun. From the semantic point of view, Tom-no warukuti and osezi are the head nouns and Tom-ga gizensya da to and anata-wa sinsetu desu ne to are the complements to the head nouns.

That a semantic relation of complement-head noun exists in these sentences implies that in the underlying structure Tom-ga gizensya da to Tom-no warukuti and anata-wa sinsetu desu ne to osezi are NP's and that at a later stage of the derivation the NP node is broken up by a transformation.⁵

If it is hypothesized that (5 a) and (6 a) are respectively derived from (14 a) and (14 b) by a transformation,⁶ which takes the complement out of the NP and places it under the matrix S and deletes iu, the ungrammaticality of (5 b) and (6 b) will be explained in terms of the following global constraint on Scrambling:

(23)

Scrambling cannot interchange the positions of the to-clause and the object if the object was the head noun to which the to-clause was the complement.
The ungrammaticality of (24 c) is also explained in terms of this constraint.

(24)

a. \textit{Mary-wa} \underline{[[\textit{Global Rules-ga} sonzaisi-na-i}_s \textit{to}_Q \textit{iu}}
   \underline{\textit{COMPLEMENT}}
   \underline{\textit{Top Subj exist-not-Pres Comp to-the-effect}}
   \underline{[\textit{kasetu-o}]_NP \textit{tate-ta}.}
   \underline{\textit{HEAD NOUN hypothesis-Obj make-Past}}
   ‘Mary made the hypothesis that Global Rules do not exist.’

b. \textit{Mary-wa} \underline{\textit{[\textit{Global Rules-ga} sonzaisi-na-i}_Q \textit{to}_Q [\textit{kasetu-o}]_NP \textit{tate-ta}.}}
   \underline{\textit{COMPLEMENT HEAD NOUN}}

\textit{c. *Mary-wa} \underline{\textit{[\textit{kasetu-o}]_NP [\textit{Global Rules-ga} sonzaisi-na-i}_Q \textit{to}_Q \textit{tate-ta}.}}
   \underline{\textit{HEAD NOUN COMPLEMENT}}

III

In Section I, I have pointed out that a to-clause cannot be preposed to the left of a derived object which has been the subject of the to-clause and has been rased out of the to-clause. I will repeat the examples here.

(25) = (7)

a. \textit{Yamada-wa} \underline{[[\textit{Tanaka-ga} baka \textit{da}_s \textit{to}_Q \textit{omotte ita}.}}
   \underline{\textit{Top Subj fool Cop think was}}
   ‘Yamada thought that Tanaka was a fool.’

b. \textit{Yamada-wa} \underline{\textit{Tanaka-o} [[\textit{baka} \textit{da}_s \textit{to}_Q \textit{omotte ita}.}}

c. \textit{*Yamada-wa} \underline{[[\textit{baka} \textit{da}_s \textit{to}_Q \textit{Tanaka-o omotte ita}.}}

Let us first confirm that the ungrammaticality of (25 c) is not due to the close connection between the to-clause and the following verb. As
seen below, other constituents can intervene between the to-clause and the verb.

(26)

a. \([Tanaka-ga\ baka\ da\ to]_{QP}\ Yamada-wa\ omotte\ ita.\)
b. \(Yamada-wa\ [Tanaka-ga\ baka\ da\ to]_{QP}\ izen-kara\ omotte\ ita.\)
   for a long time

Next let us confirm that the derived object and the following to-clause do not form one constituent. First, Pseudo-Clefting is inapplicable, as seen below:

(27)

\[^*Yamada-ga\ omotte\ ita\ no-wa\ [Tanaka-o]_{NP}\ [baka-da]_{s}\ to\ iu\ koto\ da.\]
what Yamada thought
Cf. \[^Yamada-ga\ omotte\ ita\ no-wa\ [Tanaka-ga\ baka\ da]\_{s}\ to\ iu\ koto\ da.\]
what Yamada thought

Secondly, other elements can intervene between the derived object and the to-clause, as seen below:

(28)

\(Tanaka-o\ Yamada-wa\ [baka\ da\ to]_{QP}\ omotte\ ita.\)
Cf. \[^*Tanaka-ga\ [Yamada-wa]_{NP}\ [baka\ da\ to]_{QP}\ omotte\ ita\]
(Yamada is meant to be the subject of omotte ita.)

Thus, the derived object and the following to-clause have been proved not to be one constituent. Then let us answer the question why the to-clause cannot be preposed to the left of the derived object.

In Section II, I have made use of a characteristic of SOV languages—that the modifier must precede the head noun. I will follow a similar argument in this section, too.

Japanese is a strictly verb-final language. Nothing can follow the verb (or predicate in other words) except some particles and tense auxiliaries.
For example, the sentences in (29) are all bad.7
(29)
       to   Obj gave   Subj
   c. *John-ga Mary-ni yatta okane-o.
Cf. John-ga Mary-ni okane-o yatta.
   'John gave Mary money'

   Of course the subject cannot follow the predicate.
(30)
   a. Tanaka-ga baka da.
       SUBJECT PREDICATE
   b. *baka da Tanaka-ga.
       PREDICATE   SUBJECT

   In (25 b), syntactically Tanaka is the object of the matrix sentence,
   but semantically it is the subject of the embedded sentence. From the
   formal point of view, Tanaka-o is the object of the matrix predicate
   omotte ita, but from the semantic point of view, it is the subject of the
   embedded predicate baka da. Of course, that Tanaka is the semantic
   subject of the embedded predicate baka da means that in the under-
   lying structure it was the syntactic subject of the embedded sentence.8
   And indeed it was the subject of the embedded sentence before Raising
   was applied.
(31)

   Yamada-wa Tanaka-o [baka da]s to omotte ita.

   Subject
          
   Object
Global Constraints on Scrambling in Japanese

It is because Tanaka was the subject of baka da that it cannot follow the predicate baka da. Like the complement-head noun relation, the subject-predicate relation blocks the application of Scrambling.

It is also clear why in (8), the interchange of the positions of Tanaka-ni ‘to Tanaka’ and sore-o suru koto-o ‘to do it’ is possible. (8a) is derived from (32) by Equi-NP Deletion. Therefore Tanaka-ni was not the subject of the embedded sentence.

(32)


Top to Subj it-Obj do Nom-Obj order-Past

In Japanese, the direct and the indirect objects can be interchanged, as seen below:

(33)

a. watasi-wa John-ni okane-o yatta.
   I. O.   D. O.
   I-Top to money-Obj gave
   ‘I gave John money.’

b. watasi-wa okane-o John-ni yatta.
   D. O.   I. O.
   ‘I gave money to John.’

In (8), Tanaka-ni is the indirect object and sore-o suru koto-o is the direct object. So the interchange is possible.

To sum up, I propose the following global constraint on Scrambling:

(34)

Scrambling cannot interchange the positions of the to-clause and the object if the object was the subject of the to-clause.

(34) is a global rule. But the constraint can be restated in a non-global way. The application of Scrambling to the sequence of the derived
Global Constraints on Scrambling in Japanese

object + to-clause can be blocked by adding a non-global condition to Scrambling and by ordering Scrambling before Ga/O Deletion.

According to Kuno,° case-marking in Japanese is effected by the following transformation:

(35)

\*Case-Marking \(a, b, \text{ and } c\) are ordered as presented here\*

\(a\). Indirect Object Marking: Attach \(ni\) to the second of three unmarked NP’s (noun phrases), that is, the NP’s that do not yet have a particle.

\(b\). Subject Marking \(\*\): Attach \(ga\) to the subject NP.

\(c\). Object Marking \(\*\): Attach \(o\) to the first nonssubject unmarked NP to the left of the main verb if it is \([-\text{stative}]\), and \(ga\) if it is \([+\text{stative}]\).

(36) illustrates this theory of case-marking:

(36)

\[\text{watasi}_{NP} \quad [\text{John}]_{NP} \quad [\text{hon}]_{NP} \quad [\text{yatta}]_{V}\]

\(I \quad \text{book gave}\)

\[\text{watasi}_{NP} \quad [\text{John}]_{NP} ni [\text{hon}]_{NP} \quad [\text{yatta}]_{V} \ (\text{Indirect Object Marking})\]

\[\text{watasi}_{NP} \quad ga [\text{John}]_{NP} ni [\text{hon}]_{NP} \quad [\text{yatta}]_{V} \ (\text{Subject Marking})\]

\[\text{watasi}_{NP} \quad ga [\text{John}]_{NP} ni [\text{hon}]_{NP} o [\text{yatta}]_{V} \ (\text{Object Marking})\]

Case-Marking is a cyclic transformation. This means that it happens that more than two particles can be attached to an NP in the derivation. For example,

(37)

1st cycle:

\(a\). Yamada [Tanaka baka da]s to omotte ita.

\(b\). Yamada [Tanaka-ga baka da]s to omotte ita. (Subject Marking)
2nd cycle:
c. *Yamada Mary-ga [baka da]*s to *omotte ita.* (Raising)
d. *Yamada-ga Mary-ga [baka da]*s to *omotte ita.* (Subject Marking)
e. *Yamada-ga Mary-ga-o [baka da]*s to *omotte ita.* (Object Marking)
(Kuno assumes that NP's followed by *ga* or *o* are unmarked, that is, another particle can be attached to the NP already followed by *ga* or *o.*
A transformation called *Ga/O Deletion* deletes *ga* or *o* when they are followed by some other particles.

(38)

*Ga/O Deletion*

\[
\text{SD: } \begin{cases} 
\text{ga} \\ 
\text{o} 
\end{cases} \text{ - Part} \\
1 \quad 2 \\
\text{SC: } 1 \quad 2 \rightarrow \phi \quad 2
\]

By this transformation, (37 e) is transformed into (39):

(39) *Yamada-ga Tanaka-φ-o [baka da]*s to *omotte ita.*

Now the condition on Scrambling can be restated in the following way:

(40)

A to-clause cannot be preposed to the left of the NP followed by *ga*+*o*.
(In other words, the NP followed by *ga*+*o* cannot move to the right of the to-clause.)

Since Scrambling is assumed to be ordered before *Ga/O Deletion*, Scrambling is prevented from preposing the to-clause *baka da to* to the left of *Tanaka-ga-o.*

IV

The global constraints on Scrambling proposed in Sections II and III will be supported if it is proven that when an object can either precede
or follow a *to*-clause, there was neither a complement-head noun relation nor a subject-predicate relation between the object and the *to*-clause. And there is such an example. Consider the following examples, where the *to*-clause can either precede or follow the object.

(41)

   people-Top Obj right-wing Cop Comp criticize-Past  
   'People criticized John as right-wing.'`

   The underlying structure of the above sentences is (42) and not (43).  
   (The case-markers should not be present in the underlying structure. They are introduced by a transformation. For the sake of convenience, I include the case-markers in the following representation.)`

(42)

people-Top Obj Subj right-wing Cop Comp criticize-Past`

(43)

There are several reasons for deriving (41) from (42) by Equi-NP Deletion and not from (43) by Raising. First, (41) and (42) have the same meaning but (43) has a different meaning. In (41) and (42), the criticism is directed toward John, but in (43), the person to whom the criticism is directed is not specified. The criticism may be directed toward someone else other than John as seen in (44), where it is John's parents that are criticized.`

(44)

people-Top Poss parents-Obj Subj right-wing Cop Comp`
by saying criticize-Past

‘People criticized John’s parents by saying that John was right-wing.’

Secondly, unlike the raising verbs such as *iwa ‘say’ and *omow ‘think’,
hinasu ‘criticize’ takes an object without a to-clause, as seen below:

(45)

a. hitobito-wa John-o hinansi-ta.
   people-Top Obj criticize-Past
   ‘People criticized John.’

b. *hitobito-wa John-o itta.
   ‘People said John.’

c. *hitobito-wa John-o omotta.
   ‘People thought John.’

The third and most decisive reason for the derivation of (41) from
(42) is the co-existence of the object of the matrix sentence and the sub-
ject of the to-clause. In (46), the subject of the embedded sentence re-
mains undeleted (but pronominalized).

(46)

people-Top Obj he-Subj/he-Subj right-wing Cop Comp

by saying criticize-Past

‘People criticized John (by saying) that he was right-wing.’

From these three reasons, I conclude that (41) should be derived from
(42) by Equi-NP Deletion and not from (43) by Raising.

To be more accurate, (41) is not derived from (42) but from (47) by
applying Equi-NP Deletion twice.

(47)
hitobito\textsubscript{1}-wa [[hitobito\textsubscript{1}-ga [ [[John\textsubscript{1}-ga uyokuteki da]\textsubscript{s to}]\textsubscript{QP} itte]\textsubscript{s te}]\textsubscript{PP} 
people-Top people-Subj Subj right-wing Cop Comp say by 
John\textsubscript{1}-o hinansi-ta.

Obj criticize-Past

The tree structure of (47) is something like the following. (The case-markers are included for the sake of convenience.)

(48)

After the deletion of hitobito and John, (49) will result:

(49)

hitobito-ga [[[uyokuteki da]\textsubscript{s to}]\textsubscript{QP} itte]\textsubscript{s te} [John-o]\textsubscript{NP} hinansi-ta.

Another transformation deletes itte and the topicalizer wa is attached. The surface structure looks like (50):

(50)

Now the grammaticality of (41 a) and (41 b) is easily explained. Scrambling can apply because there was neither a complement-head noun relation nor a subject-predicate relation between John and uyokuteki da to in the sentences of (41). In the underlying structure, John-o is the object of the matrix verb hinansu, and uyokuteki da to is the complement
of another verb *iwa*, which is later deleted. In no stage of the derivation do they form a single constituent. The global constraints on Scrambling are supported.

V

I have proposed two global constraints on Scrambling in this paper—(23) and (34). (34) can be restated in a non-global way, as in (40). A global derivational constraint is not necessary as far as the preposing of the *to*-clause to the left of the derived object is concerned. But at present I cannot devise a non-global condition which blocks the application of postposing of a *to*-clause to the right of its former head noun.

FOOTNOTES

* I am grateful to Chisato Kitagawa and Ronald Taylor for their comments and criticism on an earlier version of this paper.

I will use the following list of symbols in this paper:

- **Comp:** Complementizer (=*to*)
- **Cop:** Copula
- **Nom:** Nominalizer (=*koto*)
- **NP:** Noun Phrase
- **Obj:** Direct Object Marker (=*o*)
- **Part:** Particle=Postposition
- **Past:** Past Tense
- **Poss:** Possessive Case Marker (=*no*)
- **PP:** Postpositional Phrase
- **Pres:** Present Tense
- **QP:** Quotational Phrase
- **S:** Sentence
- **Subj:** Subject Case Marker (=*ga*)
- **Top:** Topic Marker (=*wa*)
- **V:** Verb
1. *iw-+ta* is phonetically realized as *itta*.


5. I am taking the Standard Theoretical or the Extended Standard Theoretical position here. I am not taking the Revised Extended Standard Theoretical position, where the semantic interpretation is done only at the surface.

6. The transformation is illustrated below:

7. I am ignoring the inversion, which often occurs in poems, or the afterthought, which is not rare in conversation.

8. Again I am taking the Standard Theoretical or the Extended Standard Theoretical position (not the Revised Extended Standard Theoretical position).


12. If Topicalization is applied and *wa* is attached, the following is obtained:
John-ga-wa Mary-ga-o baka da to omotte ita.
Ga/O Deletion deletes both ga’s:
John-φ-wa Mary-φ-o [baka da] to omotte ita.

13. This condition was suggested to me by C. Kitagawa.


15. (34) and (40) can be dispensed with if Fiengo’s condition is universally applicable. Fiengo (“Semantic Conditions on Surface Structure,” [unpublished doctoral dissertation; MIT, 1974]) proposes the following rule:

in the structure

\[
\ldots \text{NP} \ldots [\alpha \ldots t \ldots ] \ldots
\]

where NP binds t,

\( \alpha \) is interpreted as specifying a property of the intended referent NP. [It is the trace left by the moved NP.]

The rule simply says this: when an NP has been moved, the NP must precede the trace \( t \) which has left behind.

Let us reconsider the derivation (25) in terms of the trace theory.

(25b) is derived from (25a) by Raising. The raised NP is supposed to leave a trace behind it.


b. Yamada-wa Tanaka-\( \alpha \)[t; baka da to] omotte ita.

(b) is grammatical because the moved NP Tanaka precedes the trace \( t \). Scrambling derives (c) from (b).

c. *Yamada-wa [t; baka da to] Tanaka-\( \alpha \) omotte ita.

Because the trace \( t \) precedes the NP Tanaka, (c) is excluded as ungrammatical by Fiengo’s rule.

Though this is an interesting topic, I will not go into a detailed discussion of the trace-theoretical treatment of the conditions on Scrambling in this paper. The interested reader is referred to Fiengo’s thesis.

16. *Ite* ‘by saying’ is necessary here. I will touch upon *Ite* later.
REFERENCES


