Global Constraints on Scrambling

in Japanese*

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I

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

(1)

   a. *John-ga Mary-ni okane-o yatta.*
         Subj   to   Obj gave

      'John gave Mary money.'

   b. *John-ga okane-o Mary-ni yatta.*

   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 <u>Gengo to Sikoo-o</u>   *iw-ta*.[1]
       Top *Language and Mind*-Obj say-Past

    '*John said *Language and Mind*.'

(3) *John-wa Tom-no <u>warukuti-o</u> iw-ta.*
       Top   Poss slander-Obj say-Past

    ' John spoke ill of Tom.'

(4) *John-wa Tom-ni <u>osezi-o</u>   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*]$_{QP}$ <u>*Tom-no warukuti-o*</u>
       Top   Subj hypocrite Cop Comp   Poss slander-Obj
     iw-ta.

     say-Past

     ' John made a malicious remark that Tom was a hypocrite.'

  b. *John-wa <u>Tom-no warukuti-o</u>* [[*(Tom-ga) gizensya da*]s *to*]$_{QP}$ *iw-ta.*

(6)

  a. *John-wa Tom-ni* [[*(anata-wa)   sinsetu   desu ·ne*]s   *to*]$_{QP}$
       Top   to you-Top   kind Cop aren't you Comp
     <u>*osezi-o*</u>   *iw-ta.*

     compliments-Obj say-Past

     ' John made a compliment to Tom that he was kind.'

  b. *John-wa Tom-ni <u>osezi-o</u>* [[*(anata-wa) sinsetu desu ne*]s *to*]$_{QP}$ *iw-ta.*

  (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,[2] 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, (7 b) is derived from (7a) by Raising, but Scrambling cannot prepose *baka da to* to the left of *Tanaka-o*.

(7)

   a. *Yamada-wa* [[*Tanaka-ga baka da*]$_S$ *to*]$_{QP}$ *omotte   ita.*
            Top   Subj fool Cop Comp   thinking was
       'Yamada thought that Tanaka was a fool.' (Kuno's (17 a))

   b. *Yamada-wa Tanaka-o* [[*baka da*]$_S$ *to*]$_{QP}$ *omotte ita.* (Kuno's (17 b))
       'Yamada thought Tanaka to be a fool.'

   c. *Yamada-wa [[*baka da*]$_S$ *to*]$_{QP}$ *Tanaka-o omotte ita.* (Kuno's (66))

Contrast (7 c) with the examples in (8), where the interchange of the indirect object and the complement is possible.

(8)

   a. *Yamada-wa Tanaka-ni* [[*sore-o suru*]$_S$ *koto-o*]$_{NP}$ *meizi-ta.*
            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
                                        (65 b))

Other examples that support Kuno's observation are given below:

(9)

   a. *Taroo-wa* [[*Ziroo-no setu-ga*   *tadasi-i*]$_S$ *to*]$_{QP}$ *omotta.*[3]
            Top   Poss theory-Subj correct-Pres Comp thought

'Taro thought that Jiro's theory was correct.'

b. *Taroo-wa Ziroo-no setu-o* [[*tadasi-i*]$_S$ *to*]$_{QP}$ *omotta.*

c. **Taroo-wa* [[*tadasi-i*]$_S$ *to*]$_{QP}$ *Ziroo-no setu-o omotta.*

(10)

a. *hitobito-wa* [[*Gengo to Sikoo-ga*   *omosiro-i*   *hon da*]$_S$
    people-Top *Language and Mind*-Subj interesting-Pres book Cop
    to]$_{QP}$ *iw-ta.*
    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.*

c. **hitobito-wa* [[*omosiro-i hon da*]$_S$ *to*]$_{QP}$ *Gengo to Sikoo-o iw-ta.*

(11)

a. [[*kuro-ga*   *siro*   *da*]$_S$ *to*]$_{QP}$ *iw-ru.*
    black-Subj white Cop Comp say-Pres
    'to say that something is white though actually it is black'

b. *kuro-o* [[*siro da*]$_S$ *to*]$_{QP}$ *iw-ru.*

c. **[[siro da*]$_S$ *to*]$_{QP}$ *kuro-o 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)

a. *John-wa warukti-o* <u>*Tom-ni*</u> *iw-ta.*

b. *John-wa Tom-ni warukuti-o* <u>*tugitugito*</u>   *iw-ta.*
                                        one after another

(13)

a. *John-wa osezi-o* <u>*Tom-ni*</u> *iw-ta.*

b. *John-wa Tom-ni osezi-o* <u>*iyaiya*</u>   *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*]$_{QP}$ *iu*   *Tom-no*
          Top   Subj hypocrite Cop Comp   to-the-effect   Poss
   warukuti-o]$_{NP}$ *iw-ta.*
   slander-Obj   say-Past
   ' John made a malicious remark to the effect that Tom was a hypo-
   crite.'

b. *John-wa Tom-ni* [[[*anata-wa sinsetu desu ne*]$_s$ *to*]$_{QP}$
          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 con-
struction 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

b. [[*anata-wa sinsetu desu ne*]s   *to iu*   *osezi*]$_{NP}$
     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. *John-wa [*Tom-no warukuti-o*]$_{NP}$ [*Tom-ga gizensya da*]s *to iu iw-ta.*
                    HEAD NOUN   COMPLEMENT

b. *John-wa Tom-ni [*osezi-o*]$_{NP}$ [*anata-wa sinsetu desu ne*]s *to iu 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 *iu* following the *to*-complement. If *Tom-ga gizensya da to* is the complement and *Tom-no warukuti* is the head noun in (5 a), and if *anata-wa sinsetu desu ne to* is the complement and *osezi* is the head noun in (6 a), then the ungrammaticalness of (5 b) and (6b) 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 [*Tom-ga gizensya da to*] [*Tom-no warukuti*] and [*anata-wa sinsetu desu ne to*] [*osezi*] each form one constituent. Instead, there is evidence against the constituency of the sequnces.

First, Pseudo-Clefting cannot be applied as seen in (17), which means that neither *Tom-ga gizensya da to Tom-no warukuti* nor *anata-wa sinsetu desu ne to osezi* is a constituent.

(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] [compli-
　　　　　　　　　　　　　　　　　　　　　　　　　　　　ments]
　　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 warukti]$_{NP}$]$_{NP}$ 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]$_{NP}$]$_{NP}$ da. (<(14 b))
　　　[that you are kind, aren't you] [compliments] is

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

(19)

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

　b． [anata-wa sinsetu desu ne to]$_{QP}$ John-wa Tom-ni osezi-o iw-ta.
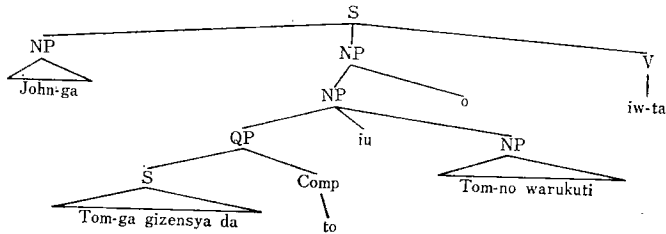　　　(<(6 a))

(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*
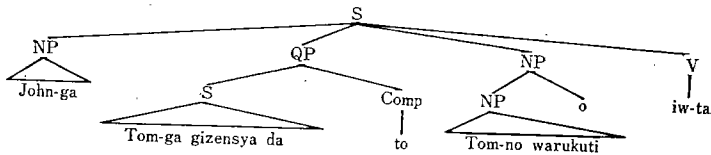   (<(14 b))

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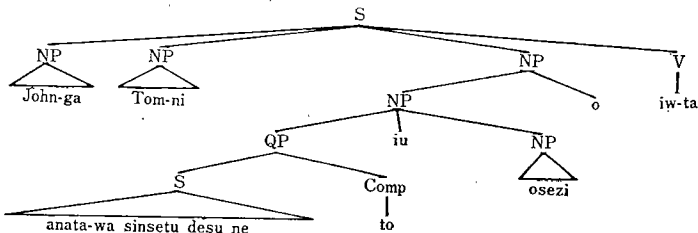
(21)
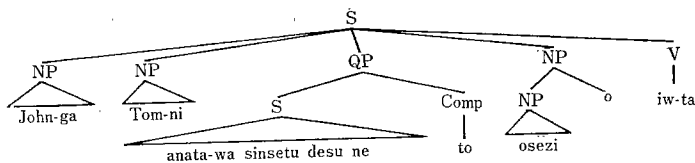
The Tree Structure of (14 a):

The Tree Structure of (5 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 con-. straint.

(24)

   a.   *Mary-wa* [[[*Global Rules-ga   sonzaisi-na-i*|_s *to*|_{QP} *iu*

              COMPLEMENT

        Top   Subj exist-not-Pres Comp   to-the-effect

    [*kasetu-o*]_{NP}]_{NP}   *tate-ta.*

    HEAD NOUN

    hypothesis-Obj   make-Past

    'Mary made the hypothesis that Global Rules do not exist.'

   b.   *Mary-wa* [*Global Rules-ga sonzaisi-na-i to*|_{QP} [*kasetu-o*|_{NP} *tate-ta.*

              COMPLEMENT   HEAD NOUN

   c.   *Mary-wa [*kasetu-o*]_{NP} [*Global Rules-ga sonzaisi-na-i to*|_{QP} *tate-ta.*

            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.   *Yamada-wa* [[*Tanaka-ga baka da*|_s *to*|_{QP} *omotte ita.*

           Top   Subj fool Cop   think was

    'Yamada thought that Tanaka was a fool.'

   b.   *Yamada-wa Tanaka-o* [[*baka da*|_s *to*|_{QP} *omotte ita.*

   c.   *Yamada-wa [[*baka da*|_s *to*|_{QP} *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   that Tanaka was a fool   is

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 lauguages—
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)

   a. *Mary-ni okane-o yatta John-ga.

           to   Obj gave   Subj

   b. *John-ga okane-o yatta Mary-ni.

   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 underlying 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

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. (8 a) is derived from (32) by Equi-NP Deletion. Therefore *Tanaka-ni* was not the subject of the embedded sentence.

(32)

Yamada-wa Tanaka$_i$-ni [[*Tanaka$_i$-ga sore-o suru*]$_S$ *koto-o*]$_{NP}$ *meizi-ta.*
          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

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,[9] case-marking in Japanese is effected by the following transformation:

(35)

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

    a. Indirect Object Marking: Attach *ni* to the second of three un-
                                       marked 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 nonsubject un-
                                       marked NP to the left of the main verb
                                       if it is [-stative], and *ga* if it is [+stative].

(36) illustrates this theory of case-marking :

(36)

$[watasi]_{NP}$ $[John]_{NP}$ $[hon]_{NP}$ $[yatta]_V$
 I   book   gave

$[watasi]_{NP}$ $[John]_{NP}$ *ni* $[hon]_{NP}$ $[yatta]_V$ (Indirect Object Marking)

$[watasi]_{NP}$ *ga* $[John]_{NP}$ *ni* $[hon]_{NP}$ $[yatta]_V$ (Subject Marking)

$[watasi]_{NP}$ *ga* $[John]_{NP}$ *ni* $[hon]_{NP}$ *o* $[yatta]_V$ (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*.[10])

A transformation called *Ga/O* Deletion[11] deletes *ga* or *o* when they are followed by some other particles.

(38)

Ga/O Deletion

$$\text{SD} : \left\{ \begin{matrix} \text{ga} \\ \text{o} \end{matrix} \right\} - \quad \text{Part}$$

$$\qquad\quad 1 \qquad\qquad 2$$

$$\text{SC} : \quad 1 \qquad\qquad 2 \; \longrightarrow \; \phi \qquad 2$$

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

(39) *Yamada-ga Tanaka-ϕ-o [baka da]$_S$ to omotte ita.*[12]

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.)[13]

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*.[14,15]

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)

a. *hitobito-wa* [*John-o*]$_{NP}$ [[*uyokuteki   da*]$_S$ *to*]$_{QP}$ *hinansi-ta.*
   people-Top   Obj   right-wing Cop Comp criticize-Past
   ' People criticized John as right-wing.'

b. *hitobito-wa* [[*uyokuteki da*]$_S$ *to*]$_{QP}$ [*John-o*]$_{NP}$ *hinansi-ta.*

The underlyng 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)

hitobito-wa [*John-o*]$_{NP}$ [[*John-ga   uyokuteki   da*]$_S$ *to*]$_{QP}$ *hinansita.*
people-Top   Obj   Subj right-wing Cop Comp criticize-Past

(43)

hitobito-wa [[*John-ga uyokuteki da*]$_S$ *to*]$_{QP}$ *hinansi-ta.*

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)

hitobito-wa [*John-no ryoosin-o*]$_{NP}$ [[[*John-ga uyokuteki   da*]$_S$ *to*]$_{QP}$
people-Top   Poss parents-Obj   Subj right-wing Cop Comp

itte]_{PP}   *hinansi-ta.*[16]

by saying criticize-Past

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

Secondly, unlike the raising verbs such as *iw* '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 subject of the *to*-clause. In (46), the subject of the embedded sentence remains undeleted (but pronominalized).

(46)

*hitobito-wa [John-o]*_{NP} *[[[kare-ga/yatu-ga uyokuteki   da]*_S *to]*_{QP}
people-Top   Obj   he-Subj/he-Subj right-wing Cop Comp
*(itte)]*_{PP}   *hinansi-ta.*

by saying criticize-Past

'People criticized John (by saying) that he was right-wing.'
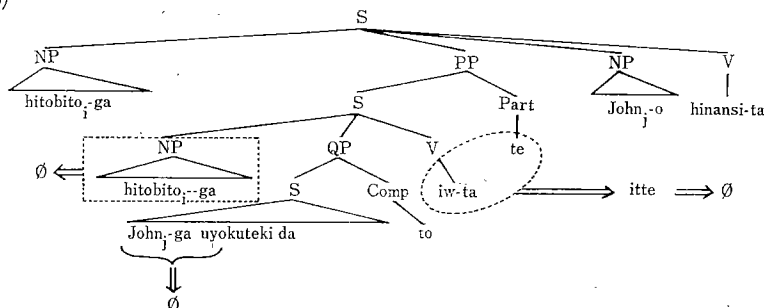
From these three reasons, I conclude that (41) should be derived from (42) by Equi-NP Deletion and not from (43) by Raising.

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

(47)

*hitobito*ᵢ*-wa* [[*hitobito*ᵢ*-ga* [[*John*ⱼ*-ga uyokuteki   da*]s *to*]QP *iw*]s *te*]PP
people-Top   people-Subj   Subj right-wing Cop Comp say by
*John*ⱼ*-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*]s *to*]QP *itte*]PP [*John-o*]NP *hinansi-ta.*
Another transformation deletes *itte* and the topicalizer *wa* is attached.
The surface structure looks like (50):

(50)
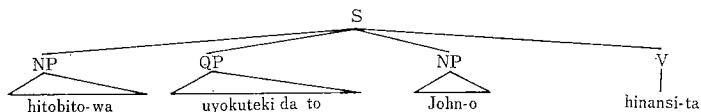
Now the grammaticality of (41 a) and (41 b) is easily explained. Scrambling can apply because there was neither a complement-head noun relation nor a subject-predicate relation between *John* and *uyokuteki da to* in the sentences of (41). In the underlying structure, *John-o* is the object of the matrix verb *hinansu*, and *uyokuteki da to* is the complement

of another verb *iw*, 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 Maker (=*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*.

2. Susumu Kuno, "Subject Raising," *Syntax and Semantics Vol. 5:*
Japanese Generative Grammar, ed. M. Shibatani (New York: Academic Press, c1976), pp. 17–49. I am assuming that Kuno's arguments are correct and that raising exists in Japanese.

3. (9 a) and (9 b) are borrowed from Minoru Nakau, *Sentential Complementation in Japanese* (Tokyo: Kaitakusha Ltd., c1973), p. 165.

4. Joseph Greenberg, "Some Universals of Grammar with Particular Reference to the Order of Meaningful Elements," *Universals of Language* (2nd ed.; Cambridge, Massachusetts: The MIT Press, c1963, 1966), pp. 73–113.

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 tranformation is illustrated beow:

Notic that this transformation is similar to the Extraposition transformation in English, which derives the *a* sentence from the *b* sentence below:

  a. The claim was made *that the earth was flat.*

  b. The claim *that the earth was flat* was made.

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).

9. Susumu Kuno, "Case Marking in Japanese," *The Structure of the Japanese Language* (Cambridge, Massachusetts: The MIT Press, c1973), p. 330.

10. *Ibid.,* p. 334.

11. *Ibid.,* p. 335. The formulation is mine.

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]s to omotte ita.

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

14. The undeleted *ga* plays a role similar to the feature [+stress] in phonology. The *a* of *elasticity* does not reduse to ə because it was stressed on the prior cycle and has the feature [+stress]. Cf. Noam Chomsky and Morris Halle, *The Sound Fattern of English* (New York: Harper & Row, c1968), p. 116.

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

. . . NP . . . [α . . . t . . .] . . . ,

where NP binds t,

α is interpreted as specifying a property of the intended referent NP. [t 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 it has left behind.

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

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

a. *Yamada-wa [Tanaka-ga baka da to] omotte ita.*

b. *Yamada-wa Tanakaᵢ-o[tᵢ 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 [tᵢ baka da to] Tanakaᵢ-o 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. *itte* ' by saying ' is necessary here. I will touch upon *itte* later.

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