Explorations in Generative Grammar

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Scrambling and the Functional interpretation of WH-Phrases*

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1. Introduction

Quantifier Raising (QR) and covert Wh-movement have often been considered representative cases of LF movement operations. (See, for example, Chomsky (1976, 1981) and Huang (1982).) QR, as discussed in detail in May (1977), adjoins a quantified NP to the maximal projection where it takes scope. It automatically accounts for the kind of scope ambiguity observed in (1).

(1) Someone loves everyone
[some x: x a person] [all y: y a person] x loves y
[all y: y a person] [some x: x a person] x loves y

LF Wh-movement, on the other hand, moves a Wh-phrase in situ to the CP SPEC where it is interpreted. The English (2) and the Japanese (3) illustrate the effect of this operation.

(2) Who$_i$ t_i bought what
[which x, y: x a person and y a thing] x bought y

(3) John-ga nani-o katta no
    -nom what-acc bought
(What did John buy)
[which x: x a thing] John bought x

The very existence of QR and LF Wh-movement, however, has recently been questioned. For example, Kitahara (1993) proposes to do away with QR, and Chomsky (1992) suggests that there is no LF Wh-movement.[1] Closely related to the latter issue is the existence (or non-existence) of syntactic Wh-movement in languages like Japanese. Kuroda (1988) and Takahashi (1993), for example, argue that scrambling, as in (4), may count as Wh-movement, and hence, that the language has optional syntactic Wh-movement.

(4) Nani-o$_i$ John-ga t_i katta no

  what-acc -nom   bought

  (What did John buy)

In this paper, I will consider the restrictions on the so-called quantificational Wh-phrases, exemplified in (5), and discuss the implications for the issues on QR and Wh-movement mentioned above.

(5) What$_i$ did everyone buy t_i

In the following section, I will develop the analysis hinted at in Lasnik and Saito (1992) and proposed in Murasugi and Saito (1993). By doing so, I will strengthen the argument in the latter that QR exists as an operation in overt syntax. In Section 3, I will examine the parallel data in Japanese, and show that they constitute evidence for Kitahara and Chomsky's hypotheses. More precisely, I will argue that QR and argument Wh-movement do not apply in LF. Finally, in Section 4, I will suggest that Japanese has optional syntactic Wh-movement, as proposed by Kuroda and Takahashi.[2]

2. The ECP Analysis of the Island Effects on Wh-Quantifiers

As discussed in detail in May (1985), the example in (5) is ambiguous. Under one reading, a singular answer like 'a book' is expected. The other reading allows a pair-like answer like the one shown in (6).

(6) Mary bought a book, Bill bought a record, Sue bought a pen, ...

In the second interpretation of (5), 'everyone' seems to be scopally interacting with 'what', and taking wide scope. As May notes, the same ambiguity obtains even when the Wh-phrase is moved long-distance, as in (7).

(7) What$_i$ does John think that everyone bought t_i

However, as Longobardi (1987) and Cinque (1990) point out, the second reading disappears when the Wh-phrase is moved out of an island. (8), in sharp contrast with (6)-(7), does not allow a pair-list answer.

(8) ?What$_i$ does John wonder whether everyone bought t_i

An ECP analysis of this last fact is proposed in Murasugi and Saito (1993).[3] There, the relevant facts are interpreted as follows, basically along the lines proposed in Cinque (1990). For the second, crucial reading to obtain, 'everyone' and 'what' must scopally interact. This in turn implies that 'what' must be interpreted as a quantifier. The fact in (8), then, indicates that when a Wh-phrase is construed as a quantifier (a Wh-quantifier), it cannot be extracted out of an island. Here, we know independently from Huang (1982) that due to the ECP, islands are absolute barriers for movement of adjuncts. Thus, (9b) contrasts sharply with (9a).

(9) a. Why$_i$ does John think that [Mary left early t_i]

  b. *Why$_i$ does John wonder whether [Mary left early t_i]

The generalization relevant for (8), hence, can be stated as in (10).

(10) Wh-quantifiers behave as adjuncts.

The ECP analysis mentioned above accounts for (10), adopting Chomsky's (1992) 'copy + deletion' theory of A'-movement and Kuroda's (1968) decomposition of Wh-phrases. The 'copy + deletion' theory is motivated in

part by examples like (11a).

(11) a. [Whose$_i$ brother]$_j$ did he$_i$ see t_j

b. [$_{CP}$ [whose$_i$ brother] [$_{C'}$ did [$_{IP}$ [whose$_i$ brother] [$_{IP}$ he$_i$

whose$_i$
|
ϕ

[$_{VP}$ [whose$_i$ brother] [$_{VP}$ see [whose$_i$ brother]]]]]]]

whose$_i$
|
ϕ

t_i brother

Suppose that movement leaves full copies behind and deletion produces the proper operator-variable relation, as in (11b). Then (11a) can be straightforwardly accounted for as an instance of strong crossover': the variable 't_i' is A-bound by 'he$_i$' in the final representation. Kuroda's decomposition of Wh-phrases, on the other hand, states that Wh-phrases are made up from a Wh-part and an indefinite part. 'What', for example, is represented as 'Wh + something'. Let us here adopt this hypothesis for quantificational Wh-phrases, and assume that they consist of a Wh-part and a quantifier part. Then, given the 'copy + deletion' theory, (5), with the wide scope reading of 'everyone', is analyzed as in (12).

(12) [$_{CP}$ [wh + something$_i$] [$_{C'}$ did [$_{IP}$ [wh + something$_i$] [$_{IP}$ everyone

wh$_i$
|
something$_i$

[$_{VP}$ [wh + something$_i$] [$_{VP}$ buy wh + something$_i$]]]]]]

t_i

According to this analysis, the first step of the Wh-movement in (5) counts as the quantifier raising of 'something'. Thus, the movement in this example is more precisely as in (13).

(13) XP$_i$ .... XP$_i$ ..... XP$_i$
wh-movement   QR

But then, the contrast between (7) and (8) is not at all surprising. In both examples, 'what' must be construed as a quantificational Wh-phrase for the wide scope reading of 'everyone' to obtain. As a consequence, the first step of the movement of this Wh-phrase, which is adjunction to the embedded VP, counts as QR. The Wh-movement, then, starts from the embedded VP-adjoined position. Since this is an adjunct position, the Wh-movement in (7)–(8) should show the same pattern as the Wh-movement of 'why' in (9). In particular, extraction out of an island should result in an ECP violation at LF. The absence of the wide scope reading of 'everyone' in (8) is thus explained in exactly the same way as the ungrammaticality of (9b).

There is, however, one loose end in this analysis. That is, it is not clear that the decomposition of Wh-quantifiers as 'Wh + existential quantifier' enables us to arrive at the desired interpretation. Let us consider again the example (5). It seems reasonable to assume that the LF illustrated in (12) will be 'spelled out' as in (14), or more precisely as in (15).

(14) [which x] did everyone [some y; y a thing and y = x] buy y

(15) [which x] [all z; z a person] [some y; y a thing and y = z] z bought y

Since (14)–(15) ask for the identity of x, it is not clear that a pair-list answer constitutes a proper response to these forms.

Here, departing slightly from the analysis of Murasugi and Saito (1993), I would like to suggest that Chierchia's (1992) functional Wh hypothesis provides a straightforward solution to this problem. Chierchia argues that the pair-list answer corresponds not to the wide scope interpretation of 'everyone' over the Wh-phrase, but rather to a functional interpretation of the latter.⁴ He first notes that three kinds of answer, a–c, are possible for a question like (16).

(16) Who$_i$ does everyone love t_i

a. Luigi

b. His mother

c. pair-list

The second, b, specifies the function $\{<x,y>: y = x\text{'s mother}\}$ with the domain everyone. Hence, (16) seems to have an interpretation asking for a function, as in (17).

(17) [which f] everyone$_x$ loves f(x) (where f(x) is a human)

And once we admit (17), the pair-list answer can also be construed as corresponding to this interpretation. Listing pairs, as in $\{<\text{John, Mary}>, <\text{Susan, Bill}>, ...\}$, is after all one way to specify a function. It thus becomes unnecessary to assume that (16) has an interpretation where 'everyone' scopally interacts with 'who' and takes wide scope.

The ECP account of (8) can be accommodated rather straightforwardly under Chierchia's analysis. It was assumed above that a quantificational Wh-phrase consists of a Wh-part and an existential quantifier part. Chierchia's theory suggests that Wh-phrases may instead be decomposed as in (18).

(18) what = which f + f(x)

Here, we know independently that a phrase containing a variable is quantificational (or at least indefinite) in nature. In the following example, it is impossible to coindex 'his' and 'the author of t', which shows that the latter exhibits weak crossover:

(19) ?Which book$_i$ did his mother see the author of t_i

Then, 'which f' represents the Wh-part and 'f(x)' the quantifier part in (18). The 'copy + deletion' derivation of (5) now proceeds as in (20).

(20) [$_{CP}$ which f + f(x)$_i$ [$_{C'}$ did [$_{IP}$ which f + f(x)$_i$ [$_{IP}$ everyone$_x$

$$\text{which f} \quad \phi$$

[$_{VP}$ [which f + f(x)$_i$ [$_{VP}$ buy which f + f(x)$_i$]]]]]]

$$f(x)_i \quad t_i$$

As before, the movement of 'what' consists of two parts, first the QR of 'f(x)' and then the Wh-movement of 'which f'. The ECP analysis of (8), thus, can be maintained intact. The Wh-movement part originates in the embedded VP-adjoined position, an adjunct position. Hence, movement out of an island necessarily results in violation of the ECP at LF. Further, the interpretation of (20) is quite straightforward. It asks for a function, and a pair-list answer constitutes a proper response.

The analysis presented above, like that of Murasugi and Saito (1993), assumes crucially that the first step of the movement of a quantificational Wh-phrase necessarily counts as QR. If not, the Wh-movement of the quantificational 'what' in (8) can originate in the embedded object position, and hence, there is no reason to expect an ECP violation. The analysis, therefore, implies that QR, which was originally proposed as an LF operation, takes place in overt syntax. In the following Section, I will suggest that QR exists only as an operation in overt syntax, and does not apply in LF.

3. The Scrambling of Wh-Quantifiers

The contrast between (5)/(7) and (8) obtains also in Japanese, when scrambling (instead of Wh-movement) is applied to quantificational Wh-phrases, as noted in Murasugi and Saito (1993). Let us first consider the following examples:

(21) a. [CP [IP John-ga [CP [IP [NP Taroo to Hanako]-ga   nani-o
            -nom   and
      katta   to   omotteru] ka] osiete kudasai
                           what-acc
      bought COMP think Q tell-me please
      (Please tell me what John thinks that Taroo and Hanako bought)

b. [CP [IP John-ga [CP [IP nani-o; [NP Taroo to Hanako]-ga t;
         -nom   and
      katta   to   omotteru] ka] osiete kudasai
                           -nom
                      what-acc
      bought COMP think Q tell-me please

c. [CP [IP nani-o; [IP John-ga [CP [IP [NP Taroo to Hanako]-ga t;
      what-acc   and
      katta   to   omotteru] ka] osiete kudasai
                           -nom
      what-acc
      bought COMP think Q tell-me please

(21a) clearly allows a pair-list answer like 'John thinks that Taroo bought a record and Hanako bought a book'. This means that the Wh-phrase 'nani' can be construed as a functional Wh dependent on 'Taroo to Hanako'. The same is true of (21b-c), where the Wh-phrase is scrambled. The relevant reading is a little difficult in the case of (21c), which involves long-distance scrambling. This, I believe, is because a phrase preposed by long-distance scrambling tends to receive a contrastive focus, and is irrelevant for the present concern. Note that (21b) and (21c) correspond in structure to the English Wh-movement examples (5) and (7) respectively.

Let us next consider cases where a Wh-phrase is scrambled out of an island. In (22a), the Wh-phrase 'nani' is in situ and is contained within a Wh-island.[5]

(22) a. ??[CP [IP John-ga [CP [IP [NP Taroo to Hanako]-ga nani-o
           -nom   and
           -nom what-acc

      katta   kadooka] sirabeteiru] ka] osiete kudasai
      bought whether investigating Q tell-me please
      (Lit. Please tell me what John is investigating whether Taroo
      and Hanako bought)

b. ?[CP [IP Nani-o; [IP John-ga [CP [IP [NP Taroo to Hanako]-ga
         what-acc   -nom   and
      katta] kadooka] sirabeteiru]] ka] osiete kudasai
      bought whether investigating Q tell-me please

The functional Wh interpretation of 'nani' in this example, like that in (21c), is slightly difficult. But it sharply contrasts with (22b), where the Wh-phrase is actually scrambled out of the Wh-island. In the latter example, the functional Wh reading is simply impossible, as in the English (8). The contrast observed in (22) comes out even more clearly with multiple Wh-questions like those in (23).

(23) a. ?[CP [IP John-ga [CP [IP [NP Ozawa to Hosokawa]-ga dare-kara
           -nom   and   who-from
      nani-o   uketotta] kadooka] sirabeteiru] ka] osiete
      what-acc received whether investigating Q tell-me please
      (Lit. Please tell me what John is investigating whether Ozawa
      and Hosokawa received from whom)

b. ?[CP [IP Dare-kara; [IP nani-o; [IP John-ga [CP [IP [NP Ozawa to
         who-from   what-acc   -nom   and
      Hosokawa]-ga t; t; uketotta] kadooka] sirabeteiru]]] ka] osiete
            -nom   received whether investigating   Q tell-me
      kudasai
      please

(23a) is a proper question even when it is assumed that *Ozawa and Hosokawa* may have received different things from different organizations.

Thus, (24) is an appropriate answer.

(24) John is investigating whether Ozawa received stocks from R Corpo-
ration, and whether Hosokawa received money from S Corporation.

(23b), on the other hand, presupposes that John's investigation concerns a
single organization and whether or not it gave a certain thing to *Ozawa
and Hosokawa*.

Similarly, in (25), 'nani' can be interpreted as a functional Wh, but not
'dare-kara', which is scrambled out of a Wh-island.

(25) ?[CP [IP Dare-karai [IP John-ga [CP [IP [NP Ozawa to Hosokawa]-ga
              who -from   -nom   -nom
t_i nani-o uketotta] ka] sirabeteiru] ka] osiete kudasai
     what-acc received Q   investigating Q   tell-me please

(Lit. Please tell me from whom John is investigating what Ozawa
and Hosokawa received)

The same pattern obtains with scrambling out of a complex NP, as
shown in (26).

(26) a. [CP [IP John-ga [NP [IP [NP Taroo to Hanako]-ga nani-o
                -nom   -nom what-acc
katta] koto]-o mondai -ni siteiru] no ka] osiete kudasai
bought fact-acc problem-in investigating Q tell-me please

(Lit. Please tell me what John is making issues out of the fact
that Taroo and Hanako bought)

b. ?[CP [IP Nani-o, [IP John-ga [NP [IP [NP Taroo to Hanako]-ga t_i
           what-acc   -nom   -nom
katta] koto]-o mondai -ni siteiru]] no ka] osiete kudasai
bought fact-acc problem-in investigating Q tell-me please

A pair-list answer is possible for (26a), which indicates that 'nani' can
be interpreted as a functional Wh. But it is not in the case of (26b).
(22b), (23b), and (26b) can be explained exactly as the English (8).
The first step of the movement, i.e. adjunction to the most deeply embed-
ded VP, counts as the QR of 'f(x)', and scrambling starts from there, as
shown in (27).

(27) XPi..... [VP XPi [VP ... XPi

     scrambling
             QR

Since the scrambling part originates in an adjunct position, extraction out
of an island results in an ECP violation. This analysis, like that of (8),
implies that the initial part of the movement of a Wh-quantifier necessari-
ly counts as QR; otherwise, the scrambling in (22b), (23b), and (26b)
could originate in an argument position.

It was observed above that scrambling shows the same pattern as Wh-
movement with respect to the possibility of the functional Wh interpreta-
tion. Another fact that came up in the discussion is that a Wh-phrase in
situ can receive this interpretation even when it is contained within an is-
land.[6] A relevant example, (22a), is repeated below in (28).

(28) ??[CP [IP John-ga [CP [IP [NP Taroo to Hanako]-ga nani-o
                -nom   -nom what-acc
katta] kadooka] sirabeteiru] ka] osiete kudasai
bought whether investigating Q   tell-me please

(Lit. Please tell me what John is investigating whether Taroo and
Hanako bought)

This example contrasts sharply with the English (8), repeated in (29),
in which the functional Wh interpretation is totally impossible.

(29) ?Whati does John wonder whether everyone bought t_i

This difference between (28) and (29) suggests that there is no LF Wh-movement of argument Wh-phrases. The analysis of (29) was based on the hypothesis that the first step of the movement of 'what', when it is to be interpreted as a functional Wh, necessarily counts as QR. It was this hypothesis that enabled us to analyze the Wh-movement in this example as a Wh-movement of an adjunct. Suppose then that 'nani' in (28) undergoes LF Wh-movement to the SPEC position of the CP headed by 'ka.' With the functional Wh interpretation, the first step of this movement should also count as QR. But then, the Wh-movement, originating in the most deeply embedded VP-adjoined position, should result in an ECP violation, exactly as in the case of (29). Hence, the possibility of the functional Wh interpretation in (28) indicates that the Wh-phrase in this example is not subject to LF Wh-movement.

The very same example (28) casts doubt also on the existence of QR in LF. Suppose that 'nani', interpreted as 'which $f + f(x)$', undergoes QR, and is adjoined to the most deeply embedded VP. Then, the Wh-phrase is in an adjunct position at this point. But as discussed in detail in Huang (1982), an adjunct Wh-phrase cannot be licensed in situ within an island.[7] (30), for example, is hopeless.

(30) *[CP [IP John-ga [CP [IP Taroo-ga naze sore-o katta kadooka]
          -nom   why it -acc bought whether
      sirabeteiru] ka] osiete kudasai
      investigating Q tell-me please

(Lit. Please tell me why John is investigating whether [Taroo bought it t)

Hence, it is predicted incorrectly that (28) is out with the functional Wh interpretation of 'nani'. We are thus led to the conclusion that the quantificational Wh-phrase 'nani' does not undergo QR in LF.

4. Semantic Effects of Scrambling

I argued so far that both QR and argument Wh-movement take place in the syntax, but not in LF. In this section, I will briefly discuss an implication of the examples in (22b), (23b), and (26b) for the analysis of scrambling.

According to the analysis of these examples presented above, the initial part of the movement counts as QR, and scrambling originates from the most deeply embedded VP-adjoined position, as illustrated in (31).

(31) XP_i ..... [VP XP_i [VP ... XP_i
     scrambling   QR

This is in a sense in conflict with the conclusion drawn in Saito (1989) that scrambling can be "semantically vacuous." The latter conclusion is based in part on examples like (32)-(33).

(32) a. [IP Taroo-ga [CP [IP Hanako-ga nani-o katta] ka siritagatteiru] (koto)
           -nom   -nom what-acc bought Q want-to-know fact
      (the fact that Taroo wants to know what Hanako bought)

   b. ?[IP Nani-o, [IP Taroo-ga [CP [IP Hanako-ga t, katta] ka
          what-acc   -nom   -nom   bought Q
      siritagatteiru] (koto)
      want-to-know fact

(33) *[IP Dare-ga [CP [IP Hanako-ga sore-o katta] ka siritagatteiru](koto)
          -nom   -nom it-acc bought Q want-to-know fact
      want-to-know fact

(Lit. the fact that who wants to know Hanako bought it)

(32a) and (33) show that a Wh-phrase must be within the CP where it takes scope. (32b), however, indicates that a Wh-phrase can be scram-

bled out of the relevant CP. Given this fact, it is proposed in Saito (1989) that scrambling can be freely undone in LF. 'Nani' in (32b) then can move back to its D-structure position at this level. Under the 'copy + deletion' theory, this "undoing" can be interpreted as the deletion of all the copies created by scrambling, as in (34).

(34) $NP_i, \ldots, NP_i, \ldots, NP_i$
      $|$ $|$ $|$
      ϕ ϕ NP_i
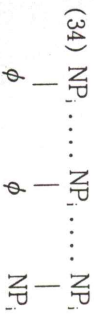
The analysis of functional Wh presented above implies that there are cases where this "undoing" can only be partial. If the movement in (21b), for example, can be totally undone in LF, there would be no way to distinguish this example from (21a) at the point the ECP applies at LF. Thus, given the movement in (31), the undoing of the QR part must be prohibited. Note that even if the scrambling portion is undone, the Wh-phrase is in an adjunct position, and hence, (21b), with the functional Wh interpretation, is still rules out in the same way as (30). "Undoing," then, must apply only to the part of the movement which does not establish an operator-variable (e.g. a quantifier-variable) relation.

This conclusion provides support for Kuroda (1988) and Takahashi's (1993) hypothesis that Japanese has optional syntactic Wh-movement. They argue that when a Wh-phrase is scrambled to the position where it takes scope, the movement counts as Wh-movement. Given the conclusion reached above, this must be exactly what happens in examples like (32b), and (35)–(36) below.

(35) ?$[_{IP}$ Nani-o, $[_{IP}$ John-ga $[_{CP}$ $[_{IP}$ $[_{NP}$ Taroo to Hanako]-ga t_i katta] ka
     what-acc   -nom   and   -nom bought Q
     siritagatteiru]] (koto)
     want-to-know   fact
(the fact that John wants to know what Taroo and Hanako bought)

---

(36) ?$[_{IP}$ Naze, $[_{IP}$ John-ga $[_{CP}$ $[_{IP}$ Taroo-ga t_i sore-o katta] ka
     why   -nom   -nom   it-acc bought Q
     siritagatteiru] (koto)
     want-to-know   fact

(the fact that John wants to know why Taroo bought it)

In (35), 'nani' moves through the embedded CP SPEC on the way to the IP-adjoined position. Since it takes scope at this CP SPEC, the movement to this position establishes a proper operator-variable (i.e. Wh-variable) relation. Hence, this movement should count as Wh-movement, in the same way that VP-adjunction of a quantificational Wh counts as QR. The scrambling, strictly speaking, starts from the embedded CP SPEC, and only the scrambling part can be undone in LF.

Note also that (35) allows the functional Wh interpretation of 'nani'. With this interpretation, the initial adjunction to the embedded VP counts as QR, and the Wh-movement to the embedded CP SPEC starts from this position. The movement then consists of three parts, QR, Wh-movement, and scrambling. After the final scrambling part is undone, the LF representation of the embedded CP will be exactly like that of (37) with the functional Wh reading.

(37) What, did Taroo and Hanako buy t_i.

Similarly, in (36), the movement of 'naze' to the embedded CP SPEC should count as Wh-movement, and the created A'-chain should be retained at LF. There is no ECP violation since the LF of the embedded CP will be exactly like that of the English (38).

(38) Why, did Taroo buy it t_i.

5. Conclusion

In this paper, I examined the Wh-Q "scope interaction" in English and Japanese, and argued that QR exists as a syntactic operation. It takes place "accidentally" as the initial part of Wh-movement in Japanese. I also suggested on the basis of Japanese data that neither QR nor argument Wh-movement applies in LF, as proposed by Kitahara (1993) and Chomsky (1992). Finally, I argued that scrambling can "accidentally" establish a proper operator-variable relation, and when it does, it is not semantically vacuous in the sense of Saito (1989). This conclusion is in line with the hypothesis proposed by Kuroda (1988) and Takahashi (1993) that Japanese has optional Wh-movement.

NOTES

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1. See also Kroch (1974) for a proposal on quantifier interpretation without quantifier raising.
2. Watanabe (1992) argues that syntactic Wh-movement (empty operator movement) is obligatory in Japanese. I will not discuss this hypothesis in this paper, but as far as I can see, it is consistent with the data and the analysis presented here.

3. See also Abe (1993) for much relevant discussion.
4. I am indebted to Andy Barss (p.c., 1993) for pointing out the potential relevance of Chierchia's theory in this context. Here, I will only illustrate his theory in a very sketchy way. See Chierchia (1992) for his actual arguments for the functional Wh analysis.
5. As discussed in detail in Nishigauchi (1986) and Watanabe (1992), a sentence is marginal when a Wh-phrase is contained in a Wh-island. I will abstract away from this effect in the discussion in the text.
6. This type of data, as well as their theoretical significance, was pointed out to me by Daiko Takahashi (p.c., 1994). The conclusion he drew, however, was different from the one presented here.
7. This of course suggests that a Wh-phrase in an adjunct position, as opposed to that in an argument position, must move in LF to the relevant CP SPEC to be licensed, and that examples like (30) are ruled out by the ECP, as proposed in Huang (1982).

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On Gapping and Right Node Raising*

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1. Introduction

This paper concerns an elision of a verb (accompanied by an optional elision of other phrases) in two types of languages; head initial languages like English and head final languages like Korean or Japanese. Let us start our discussion by looking at this verb elision phenomenon in English. There are several types of missing verb constructions in English. The following English examples illustrate one of them, a so-called gapping phenomenon, which is our main concern.

(1) a. *Bill, Sue. (After someone said, "John likes Mary.")

   b. John likes Mary, and Bill, Sue.

     (=John likes Mary and Bill likes Sue.)

   c. *John, Mary, and Bill likes Sue.

Gapping is distinguished from other verb elision contexts like VP deletion or pseudo gapping in that no auxiliary verb is required. Also gapping is special since it is allowed only in limited contexts; that is, only in coordinate structures. For example, the sequence (1a) is not allowed unless it is put in the conjunction as in (1b). Note that the antecedent in a previous sentence would not help, as shown in (1a). It is well known that we have to interpret this sentence in a specific way. More precisely, the elided verb must be the same as the verb in the first conjunct as indicated in the parenthesis.