Proceedings of the
WESTERN CONFERENCE
ON LINGUISTICS

Volume Five

WECOL 92

Edited by
Joel Ashmore Nevis
Vida Samiian

Perlmutter, D. 1972. "Evidence for Shadow Pronouns in French
    Relativization." In The Chicago which hunt, Parabteau, P.M.
    et al. (eds.) Chicago. Chicago Linguistic Society.
Pinker, S. 1989. Learning and Cognition: The Acquisition of
    Argument Structure. Cambridge, MA. MIT Press.
Rumelhart, D.E. and J.L. McClelland. 1986. "On Learning the past
    tenses of English verbs." In Parallel Distributed
    Processing: Explorations in the Microstructure of Cognition.
    Vol. 2. Rumelhart, D.E., J.L. McClelland and PDP Research
    Group. (eds.) Cambridge, MA. Bradford Books/MIT Press.
Saito, M. 1982. "Case Marking in Japanese: A Preliminary Study."
    ms. MIT.
--------. 1985. Some Asymmetries in Japanese and Their Theoretical
    Implications. Ph.D. dissertation. MIT.
Stowell, T. 1981. Origins of Phrase Structure. Ph.D. dissertation.
    MIT.

QUASI-ADJUNCTS AS SENTENTIAL ARGUMENTS

Keiko Murasugi and Mamoru Saito
Kinjo Gakuin University and University of Connecticut

1. Introduction

This paper is concerned with the exact nature of the typical ECP-type asymmetry illustrated in (1)-(2). (See Huang 1982 for detailed discussion.)

(1)a. who_i t_i bought what
   b. *who_i t_i bought the book why / *who_i t_i solved the problem how
(2)a. ?$what_i$ does John wonder [whether Mary bought t_i]
   b. *why_i does John wonder [whether Mary bought the book t_i]

As shown in (1), an object wh what can be left in situ, but adjunct wh-phrases such as why and how cannot be. Further, as shown in (2), an object wh can marginally be extracted out of an island, but such extraction of an adjunct wh results in total ungrammaticality. As far as we know, there are two major approaches to this asymmetry that are proposed in the literature. The first one, proposed by Huang 1982, hypothesizes that it is an argument/non-argument asymmetry. (See also Lasnik and Saito 1984, and Chomsky 1986.) The second, proposed by Aoun 1985 and Aoun, et al. 1987, attributes the contrast to the referential/non-referential distinction. (See also Rizzi 1990 and Cinque 1990.)

These two approaches lead us to different accounts for the examples in (3).

(3)a. who_i t_i bought the book where
   b. who_i t_i bought the book when

The first will say that (3a-b) are allowed because where and when, like what in (1a), have argument status. A specific version of this hypothesis can be found in Huang 1982. He assumes that locative/temporal phrases in examples such as (3) are adjuncts. But noting the following contrast, he also assumes that where/when, as opposed to why/how, are NPs:

(4)a. from where / since when
   b. *for why / *by how

(4a) shows that where/when can be the object of P, and thus, indicates that they are NPs. Then, given this categorial distinction between where/when and why/how, Huang suggests that where/when in (3) are objects (and hence, arguments) of an empty P. According to this analysis, the more precise structure of (3a) is as in (5).

(5) who_i t_i bought the book [pp[pe] where]

The examples in (1b) cannot have a similar structure because why/how are not NPs, and hence, cannot be an object of P. This analysis is quite attractive since it accounts for (3) and (6) in exactly the same way.

(6)a. who_i $\underline{t_i}$ bought the book for what reason
  b. who_i $\underline{t_i}$ solved the problem by which method

(3) and (6) are allowed because the wh-phrases in these examples are objects of P.

The approach to (1)-(2) based on referentiality, on the other hand, will say that (3a-b) are allowed because where/<u>when</u>, like <u>what</u> and unlike why/how, are referential. One motivation for this analysis is given by the fact that there are pronouns corresponding to where/when, i.e., <u>there/then</u>, but why/how do not have any pronominal form.

In this paper, we will pursue the first approach, and present supporting arguments for Huang's argument/non-argument distinction. At the same time, however, we will argue against the empty P analysis. Instead, we will entertain the hypothesis, suggested by Rizzi 1990 and Murasugi 1991, among others, that where/when in (3) are arguments of INFL or the event predicate. In the following section, we will discuss some facts of relativization in Japanese as evidence against the empty P analysis. In Section 3, we will consider extraction out of NPs in English, and argue that the relevant facts indicate that where/when in (3) in fact are arguments of INFL/event predicate. This conclusion, we argue, provides support for Huang's 1982 overall approach to explain (1)-(3) in terms of the argument/non-argument distinction. Then, in Section 4, we will consider the examples of amount quantification discussed in detail in Rizzi 1990 and Cinque 1990, and propose an account based on the argument/non-argument distinction. The appendix deals with some issues related to the analysis suggested in Section 4.

2. Relative Clauses and Empty Pronouns in Japanese

As is well known, Japanese relativization does not exhibit Subjacency effects.[1] The following example from Kuno 1973 shows that relativization out of a relative clause is possible:

(7) $[_{IP}[_{NP}[_{IP}e_i$ $\underline{e_j}$ kiteiru] $yoohuku_j]$-ga yogoreteiru] $sinsi_i$
      is-wearing clothes -nom is-dirty   gentleman
  (the $gentleman_i$ who_i [[the suit that he_i is wearing] is dirty])

An explanation for this absence of Subjacency effects is offered in Perlmutter 1972. He points out that Japanese allows pro in any argument position, and hence, that e_i in (7), for example, need not be a trace but can be a pro. Then, the relative clause in (7) need not involve movement, and consequently, no Subjacency effects are expected.

However, relativization in Japanese is not totally free. As shown in (8)-(9), relativization of reason/manner adjuncts out of an island results in total ungrammaticality.

(8) $[_{IP}[_{NP}[_{IP}\underline{e_j}$ *$(sore_i$ de) kubi ni natta] $hito_j]$-ga minna
              it   for was-fired   person-nom all
  okotteiru] $riyuu_i$
  is-angry   reason
  (the $reason_i$ that [[all the people who are fired for it_i] are angry])

(9) $[_{IP}[_{NP}[_{IP}\underline{e_j}$ *$(sore_i$ de) mondai -o   toita] $hito_j]$-ga minna siken
              it   by problem-acc solved person-nom all   exam
  ni otiru] $hoohoo_i$
  in fail   method
  (the $method_i$ that [[all the people who solve problems by it_i] fail the exam])

(8)-(9) are fine with overt resumptive pronouns, but are totally out without them. This result is expected if pro is allowed only in argument positions in Japanese. Then, pro cannot appear in the position of <u>sore de</u> in (8)-(9), and hence, cannot save the examples from Subjacency effects.

Let us now consider the examples in (10)-(11).

(10) $[_{IP}[_{NP}[_{IP}\underline{e_j}$ e_i siken-o   uketa] $gakusei_j]$-ga minna ukatta]
              exam -acc took   student -nom all   passed
  $kyoositu_i$
  classroom
  (the $classroom_i$ that [[all the students who took the exam $there_i$] passed])

(11) $[_{IP}[_{NP}[_{IP}\underline{e_j}$ e_i mensetu -o   uketa] $gakusei_j]$-ga minna ukatta]
              interview-acc had   student -nom all   passed
  hi_i
  day
  (the day_i that [[all the students who took the oral exam $then_i$] passed])

These examples involve relativization of locative/temporal phrases out of an island. Since they are perfectly fine, they indicate that pro is allowed in the locative/temporal positions. And given our generalization that pro is allowed only in argument positions, this implies that locative/temporal phrases have argument status.

Here, it may be thought that the relevant generalization on the distribution of pro in Japanese is not that it can appear only in argument positions, as we argued above, but rather that it can occur only in NP positions. This, however, seems to be incorrect. In Japanese, temporal phrases can in fact occur as bare NPs, but locative phrases, like reason/manner phrases, cannot.[2] This is shown below in (12)-(13).

(12)a. Taroo-ga sono hi (ni) mensetu -o   uketa
         -nom that day on interview-acc had
     (Taroo had the oral exam that day)
   b. Taroo-ga soko *(de) siken-o   uketa
         -nom there in exam -acc took
     (Taroo took the exam there)
(13)a. Taroo-ga sore *(de) kubi ni natta
         -nom it   for was-fired
     (Taroo was fired for it)
   b. Taroo-ga sore *(de) sono mondai -o toita
         -nom it   by that problem-acc solved
     (Taroo solved the problem by it)

Hence, the locative phrase e_i in (10) must be of the category PP. Further, it is implausible that this empty PP has the internal structure in (14) with an empty P.

(14) [pp pro [pe]]

This structure would enable one to maintain the generalization that pro is allowed only in NP positions in Japanese. But once we assume that an empty P is possible in Japanese locative phrases, it is not clear why it is not allowed in examples like (12b). We, therefore, conclude that e_i in (10) is pro of the category PP, and is licensed because of its argumenthood.

We argued above that locative/temporal phrases, by themselves, have argument status in sentences. This conclusion makes Huang's 1982 empty P hypothesis for the examples in (3) redundant. Given this conclusion, his argument vs. non-argument approach predicts those examples to be grammatical without the postulation of empty P.

3. Movement of Locative/Temporal Phrases out of NPs

As noted in Section 1, the basic premise that led Huang 1982 to the empty P hypothesis is that locative/temporal phrases are adjuncts. We argued against this basic assumption in the preceding section. But Huang 1982, not surprisingly, does present some evidence for his assumption. For example, he discusses the following paradigm:

(15)a. of which city$_i$ did you witness [the destruction t_i]
   b. *on which table$_i$ did you buy [the books t_i]
   c. *from which city$_i$ did you meet [the men t_i]

(15a) involves extraction of an object out of an NP. On the other hand, in (15b), a locative PP is moved out of an NP. The latter example is even worse than the CED (Subjacency) violation in (16b), and has the status of an ECP violation.

(16)a. who$_i$ did you see [a picture of t_i]
    b.?*who$_i$ did you destroy [a book [about t_i]] (Chomsky 1977)

And as Huang points out, the ungrammaticality of (15b) can be attributed to the ECP only if the extracted locative phrase is an adjunct.<3>

Huang's argument based on (15b), it seems to us, is quite convincing. But at the same time, it seems to pose a problem for his empty P hypothesis. Let us first consider the examples in (17).

(17)a.?*which basket$_i$ do you like [the food in t_i]
    b. *in which basket$_i$ do you like [the food t_i]
       (cf. in which basket$_i$ do you like [the food] t_i)

This contrast is nicely predicted by Huang's analysis. Since locative phrases are adjuncts, (17a) involves extraction out of an adjunct, and hence, is ruled out by the CED (Subjacency). On the other hand, (17b), which is even worse, is ruled out by the ECP, since an adjunct is moved out of an NP exactly as in (15b-c). But let us consider (18).

(18) *where$_i$ do you like [the food t_i]
       (cf. where$_i$ do you like [the food] t_i)

This example, it seems to us, has the same status as (17b), and hence, should be considered an ECP violation. But given the empty P hypothesis, it should merely be a CED (Subjacency) violation. If where can be a complement of an empty P, this example should be able to have the following structure:

(19) where$_i$ do you like [the food [pp[pe] t_i]]

(19), like (17a), violates the CED (Subjacency) since a wh-phrase is moved out of an adjunct. But, again, like (17a), it is not an ECP violation, because the trace is in the object position of P. On the other hand, if there is no empty P, we correctly predict (18) to have the same status as (17b), since then, both examples involve extraction of an adjunct out of an NP.

A similar argument against the empty P hypothesis can be constructed with wh in situ. Let us consider the following examples:<4>

(20)a. who$_i$ t_i read [the books on which shelf]
    b. *who$_i$ t_i read [the books where]
    c. *who$_i$ t_i remembered [the TV shown when]

We expect (20a) to be grammatical, because, as in (1a), the wh in situ, which shelf, is in the object position. What is crucial here is the ungrammaticality of (20b-c). If an empty P is possible, nothing seems to prevent (20b), for example, from having the structure in (21).

(21) who$_i$ t_i read [the books [pp[pe] where]]

In this structure, where is in the object position of P. We, thus, predict falsely that (20b) should be perfect exactly like (20a).

Examples such as (20b-c) seem to provide strong evidence against the empty P hypothesis. At the same time, they provide strong support for Huang's 1982 conclusion, based on examples such as (15b), that locative/temporal phrases are adjuncts in NPs. These two conclusions, together with the well-formedness of (3a-b), repeated below, indicate that locative/temporal phrases can have argument status in sentences but not in NPs.

(3)a. who$_i$ t_i bought the book where
    b. who$_i$ t_i bought the book when

We conclude, then, that where/when in (3) are arguments of INFL or the event predicate associated with V. Note also that the contrast between (3a-b) and (20b-c) suggests that the grammaticality of the former cannot be attributed simply to the referentiality of the wh-phrases. If (3a-b) are allowed because where/when are referential, then (20b-c) should be allowed for the same reason.<5> Thus, this contrast, we believe, provides support for Huang's 1982 basic approach to explain (1)-(3) in terms of the argument/non-argument distinction.

4. Amount Quantification and the Argument/Non-Argument Distinction

So far, we presented evidence against Huang's 1982 empty P hypothesis, and at the same time, argued for his overall approach to (1)-(3) based on the argument/non-argument distinction. If this distinction indeed plays a fundamental role in the account of the data discussed above, then a question should be raised as to whether other distinctions are needed at all to account for the ECP-type phenomena. In this section, we will consider the examples of amount quantification discussed by Rizzi 1990 and Cinque 1990 to motivate the referential/non-referential distinction. We will show that they, too, can be analyzed quite naturally in terms of the argument/non-argument distinction.

4.1. Quantificational Wh-Phrases

Let us first consider the following contrast:

(22)a. ?what$_i$ does John wonder [whether Mary bought t_i] (=(2a))
    b. *how much$_i$ does John wonder [whether the book costs t_i]

Rizzi 1990 notes first that contrasts like this are quite similar to the one between (2a) and (2b). (2b) is repeated below.

(2)b. *why$_i$ does John wonder [whether Mary bought the book t_i]

Then, he points out that contrasts of this kind cannot be explained straightforwardly in terms of the argument/non-argument distinction, since the wh-phrases originate in the object position, for example, in both (22a) and (22b). He proposes that the ungrammaticality of examples like (22b) should be attributed to the non-referential nature of the wh-phrase. Or more precisely, he hypothesizes that how much in (22b) as well as why in (2b) fail to receive a "referential θ-role," and for this reason, cannot be extracted out of an island.

Cinque 1990 (Chapter 1), on the other hand, shows that the unacceptability of (22b) is related to the quantificational nature of the wh-phrase.<6> He discusses examples such as the following, attributed to Longobardi (1987):

(23)a. how many books$_i$ does John think that everyone bought t_i
    b.??how many books$_i$ does John wonder whether everyone bought t_i

(23a) is ambiguous in the same way that (24a) is.

(24)a. what$_i$ did everyone buy t_i
    b. who$_i$ t_i saw everyone

As discussed in detail in May 1985, (24a) seems to exhibit scope ambiguity between what and everyone, but in (24b) only the wide scope reading of the wh-phrase is possible. The ambiguity, then, seems to arise when the quantified NP c-commands the wh-phrase at D-structure. Since everyone c-commands how many books at D-structure in (23a), this example is expected to be ambiguous.

The interesting case is (23b). In this example also, the

quantified NP c-commands the wh-phrase at D-structure. But the expected ambiguity does not obtain, and how many books necessarily takes wide scope over everyone. Here, Cinque argues that how many books can be non-quantificational, and hence referential. In this case, the wh-phrase does not scopally interact with everyone, and as a result, we obtain the interpretation equivalent to the wide scope reading of the wh-phrase. On the other hand, the wh-phrase must be interpreted quantificationally if it is to scopally interact with everyone and have narrow scope with respect to this quantified NP. But when the wh-phrase is interpreted as a quantifier, it is non-referential. And when it is non-referential, it, like why in (2b), cannot be moved out of an island. Thus, the lack of the narrow scope reading of how many books in (23b) follows.

The phenomenon instantiated by (23) seems to be quite general. For example, the same contrast obtains even when the wh-phrase is what, as shown in (25).

(25)a. what$_i$ does John think that everyone bought t_i
    b. ?what$_i$ does John wonder whether everyone bought t_i

Everyone can take wide scope over the wh-phrase what in (25a) but not in (25b). A similar contrast obtains in Japanese, as the examples in (26) show.

(26)a. nani-o$_i$ kimi-wa [[John to Mary]-ga t_i katta to] omotteru no
      what-acc you -top   and   -nom   bought COMP think
      (what do you think that John and Mary bought)
    b. ?nani-o$_i$ kimi-wa [[John to Mary]-ga t_i katta kadooka]
      what-acc you -top   and   -nom   bought whether
      siritai   no
      want-to-know
      (what do you want to know whether John and Mary bought)

The plural NP John and Mary can take wide scope over the wh-phrase what in (26a), but not in (26b). Thus, if Cinque's account, which is certainly elegant, is correct, the referential/non-referential distinction seems to be well motivated.

In the following subsection, we will present an alternative account, based on the argument/non-argument distinction, for the contrast in (23). We will relate the contrast to the properties of QR, following the suggestions in Kroch 1989 and Frampton 1991, and extend the analysis of (24) proposed in Lasnik and Saito 1992 to this contrast.<7>

4.2. Scope Rigidity

It is argued in Hoji 1986, and Lasnik and Saito 1992 that examples such as (24a), repeated below, are not actually scopally ambiguous.

(24)a. what$_i$ did everyone buy t_i

According to them, everyone necessarily takes wide scope, and the

apparent narrow scope reading of this quantified NP is due to the "group interpretation" of this NP. Examples such as the following provide supporting evidence for this conclusion:

(27) what$_i$ did everyone$_j$ buy t_i for Max with his$_j$ bonus money

When everyone binds the singular pronoun his, the only available interpretation is the wide scope reading of this quantified NP. This indicates that when everyone is interpreted quantificationally, it necessarily takes wide scope over what.

Then, building on the works by Kuroda 1971, Huang 1982, and Hoji 1985, among others, Lasnik and Saito 1992 propose the following rigidity condition to account for this fact:

(28) <u>Rigidity Condition on Quantifier Raising (QR)</u>
(a) Suppose that Q1 and Q2 are Operators. Then, Q1 cannot take wide scope over Q2 if $t2$ c-commands $t1$ (where $t1$ and $t2$ are variables).
(b) QR adjoins a quantified NP to a minimal node to satisfy (a).

According to their analysis, (24b), repeated in (29a), must have the LF representation in (29b).

(29)a. who$_i$ t_i saw everyone
b. who$_i$ t_i [$_{VP}$everyone$_j$ [$_{VP}$saw t_j]]

This is so since the VP node is the minimal node that everyone can adjoin to, satisfying (28a). (24a), on the other hand, must have the LF in (30).

(30) [$_{CP}$everyone$_j$ [$_{CP}$what$_i$ [did [t_j [$_{VP}$buy t_i]]]]]

If everyone adjoins to IP, for example, the resulting representation violates (28a). Thus, it must adjoin to CP, and take scope over what. (23a) will be analyzed in the same way. In order to satisfy (28a), everyone must adjoin to the matrix CP in LF, and take scope over how many books. The LF representation of this example is then as in (31).

(31) [$_{CP}$everyone$_j$ [$_{CP}$how many books$_i$ does John think that t_j bought t_i]]

The "narrow scope" reading of everyone is attributed to its "group interpretation."

Here, we would like to suggest a slightly modified account for (23a). Note that the account in Lasnik and Saito 1992 assumes that how many books as a quatifier takes scope at the same position it takes scope as a wh-phrase. Since this phrase clearly contains a quantificational part x many books and a wh part how, this assumption is not necessary. We may assume that this phrase, as a quantifier, takes scope within its own clause and scopally interact with everyone in the embedded clause. According to this analysis, the LF of (23a) will be as in (32).<8>

(32) [$_{CP}$how$_k$ [does John think that [$_{IP}$everyone$_j$ [$_{IP}$t$_j$ [$_{VP}$[t_k many books]$_i$ [$_{VP}$bought t_i]]]]]]]

This analysis enables us to maintain that QR is in general "clause-bound." Further, it seems to make much sense under the copy theory of movement suggested in Chomsky 1992. In order to account for "reconstruction effects," Chomsky proposes that movement actually involves copying, as illustrated in (33a).

(33)a. [$_{CP}$[whose brother] [did [$_{IP}$[whose brother] [$_{IP}$he [$_{VP}$[whose brother] [$_{VP}$see [whose brother]]]]]]]
b. [$_{CP}$who$_i$ [did [$_{IP}$he [$_{VP}$see [t_i's brother]]]]]

After the deletion of the appropriate parts of the chain, the desired operator-variable relation is derived as in (33b). And according to this theory, no extra mechanism is needed to construct the how-tk and tk many books-ti relations in (32). We can simply delete many books in the matrix CP SPEC, how in the embedded VP-adjoined position, and how many books in the embedded object position. Note that according to this analysis, the initial movement of how many books to the embedded VP-adjoined position is QR, and the wh-movement originates from this position.

Let us now apply this analysis to (23b), repeated below.

(23)b.??how many books$_i$ does John wonder whether everyone bought t_i

If how many books is to scopally interact with everyone, it must first undergo QR and adjoin to the embedded VP. Then, it undergoes wh-movement from this position to the matrix CP SPEC. Thus, the wh-movement is from a non-argument position. Since this movement involves extraction out of an island, we predict, on the basis of the argument/non-argument distinction, that it is illicit exactly as the wh-movement in (2b). Hence, the lack of scope interaction between how many books and everyone in (23b) is expected solely on the basis of the argument/non-argument distinction. This account for (23b) can be readily extended to (25b), if we assume that what contains a wh part and a quantificational part (wh + somthing), along the lines suggested in Kuroda 1968. Then, what in this example, like how many books in (23b), adjoins to the embedded VP by QR, before moving to the matrix CP SPEC by wh-movement.

The ungrammaticality of (22b), repeated below, can be accounted for in the same way.

(22)b. *how much$_i$ does John wonder [whether the book costs t_i]

Since how much in this example is interpreted quantificationally, it must first adjoin to the embedded VP by QR, and then, wh-move to the matrix CP SPEC. The resulting LF representation, after the LF deletion of the appropriate parts of the chain, will be as follows:

(34) how$_k$ does John wonder whether the book [$_{VP}$[t_k much]$_i$ [$_{VP}$costs t_i]]

Since the wh-movement is from a non-argument position, and involves extraction out of an island, we expect it to be illicit. Thus, the ungrammaticality of this example is also accounted for on the basis of the argument/non-argument distinction. This account for (22b), it should be noted, is virtually identical to the account for (35b) proposed in Lasnik and Saito 1992.

(35)a.??what$_i$ does John wonder who$_j$ t$_j$ bought t$_i$
    b. *what the hell$_i$ does John wonder who$_j$ t$_j$ bought t$_i$

As discussed in detail in Pesetsky 1987, the extraction of wh-phrases like what the hell out of an island results in a severe violation. In order to account for this fact, Lasnik and Saito 1992 propose that those wh-phrases must undergo focus movement and adjoin to the embedded VP before moving on to the CP SPEC position. Thus, according to their analysis, the wh-movement in (35b) originates in a non-argument position, and this is why this example has the same status as (2b). Given Chomsky's 1992 copying + deletion analysis, we may assume that (35b) has the following LF representation:

(36) what$_k$ does John wonder who$_j$ t$_j$ [VP[t$_k$ the hell]$_i$ [VPbought t$_i$]]

The account for (22b) and (23b) presented above is based on Cinque's 1990 insight in that it appeals to the quantificational properties of how much and how many books. At the same time, however, it does not refer to the notion of referentiality, and is based solely on the argument/non-argument distinction. Hence, if it is successful, it raises doubt as to whether the referential/non-referential distinction plays any role in the analysis of the ECP-type phenomenon.

5. Conclusion
    In this paper, we first discussed where/when and argued that they can have argument status in sentences, though not in NPs. We argued against Huang's 1982 empty P hypothesis, but at the same time, argued for his overall approach to account for the ECP-type phenomenon on the basis of the argument/non-argument distinction. Then, we discussed examples of amount quantification, and argued that they can be accounted for on the basis of this distinction. Our analysis suggests that this distinction plays a fundamental role also in the analysis of the facts that motivated the notion of referentiality.

Appendix: Some Related Issues
    In this appendix, we will briefly discuss two issues related to the account we proposed in Section 4 for the examples of amount quantification. The first has to do with the rigidity condition on quantifier scope. We will show that this condition leads us to an additional argument for Mahajan's 1989 hypothesis that clause-internal scrambling, but not long-distance scrambling, can be A-movement. The second issue has to do with the exact derivations of examples such as (22b) and (23b). We will suggest that those examples provide us with additional evidence for Chomsky's 1989 Economy Principle on derivation.
    The account of (22b) and (23b) suggested above relies crucially

on the rigidity condition on quantifier scope. As noted in Lasnik and Saito 1992, this condition seems to apply strictly to examples such as (37a), but to impose only preference to others like (37b).

(37)a. some woman loves everyone
    b. someone loves everyone

As discussed in detail in Kuroda 1971 and Hoji 1985, this condition seems to apply rather strictly in Japanese. Thus, dareka takes wide scope over daremo in (38).<9>

(38) dareka -ga daremo -o aisiteiru
      someone-nom everyone-acc love
      (someone loves everyone)

However, Kuroda and Hoji note one potential problem in Japanese for this condition. When the object NP is scrambled over the subject NP, either NP can take scope over the other. For example, (39a-b) are both completely ambiguous.

(39)a. dareka -o$_i$ daremo -ga t$_i$ aisiteiru
        someone-acc everyone-nom   love
        (everyone loves someone)
    b. daremo -o$_i$ dareka -ga t$_i$ aisiteiru
        everyone-acc someone-nom   love
        (someone loves everyone)

If scrambling is A'-movement, then these examples will constitute clear counterexamples to the rigidity condition. Since the variable in the subject position asymmetrically c-commands that in the object position in LF, the condition predicts falsely that the subject quantified NP must take wide scope.
    But it is argued in Mahajan 1989 that clause-internal scrambling can be either A- or A'-movement, while long-distance scrambling is necessarily A'-movement. And this hypothesis, together with the rigidity condition, predicts correctly that the examples in (39) are scopally ambiguous. If the scrambled object NP is in A-position, then it takes wide scope over the subject NP. On the other hand, if it is in A'-position, the subject NP takes wider scope. Mahajan's hypothesis, with the rigidity condition, predicts that when an NP is scrambled over a subject NP by long-distance scrambling, the latter takes wide scope. This is so since according to his hypothesis, long-distance scrambling is necessarily A'-movement. The prediction is in fact borne out as noted by Hiroaki Tada (p.c.) and Oka (1989). The strongly prefered reading of (40) is the one in which dareka takes wide scope over daremo.

(40) daremo   ni$_i$ dareka -ga [John-ga t$_i$ atta to] omotteiru
      everyone to someone-nom   -nom   met COMP think
      (someone thinks that John met everyone)

Thus, the rigidity condition and the scope facts in Japanese provide

us with an additional supporting argument for Mahajan's 1989 hypothesis on scrambling.

The second issue to be discussed in this appendix has to do with the exact derivations of (22b) and (23b).<10> (23b) is repeated below.

(23)b.??how many books$_i$ does John wonder whether everyone bought t_i

It was hypothesized above that how many books adjoins to the embedded VP by QR, and then, wh-moves from this position to the matrix CP SPEC. More precisely, the syntactic movement creates the representation in (41), and then, after LF deletion, the representation in (42) results.

(41) [how many books] [... [$_{VP}$[how many books] [$_{VP}$bought [how many books]]]]
(42) [how]$_k$ [............. [$_{VP}$[t_k many books]$_i$ [$_{VP}$bought t_i]]]

Thus, according to this hypothesis, the movement creates a single A'-chain, and the two operator-variable pairs are created by deletion.

However, there is an alternative derivation of (42). It was simply assumed above that the initial movement of how many books to the VP-adjoined position counts as QR. But suppose that it does not, and the QR takes place in LF. Then, since the wh-movement originates in the object position, it becomes unclear why how many books cannot scopally interact with everyone in (23b). Hence, our analysis of (23b) implies that this alternative derivation is blocked on independent grounds.

Let us consider the problematic derivation in more detail. From (41), we first apply deletion to derive (43).

(43) [how]$_k$ [............. [$_{VP}$bought [t_k many books]]]

Then, we apply QR to the embedded object and adjoin it to VP to derive (42). This derivation, unlike the one we assumed in Section 4, involves two independent A'-movements to create the operator-variable relations in (42). Thus, the Economy of Derivation would be the natural candidate to rule out this derivation. This principle blocks this derivation since there is another derivation that involves only one instance of "form chain."<11> Thus, the analysis of (22b) and (23b) suggested in Section 4, if correct, provides additional support for Chomsky's 1989 Economy Principle.

FOOTNOTES

* The material in this paper was presented at WECOL 22, and also in colloquia at UC Irvine, University of Delaware, and Harvard University. We have benefited from discussions with many people; we would like to thank in particular Chris Collins, Jim Huang, Howard Lasnik, Roger Martin, Tim Stowell, Hiroaki Tada, and Daiko Takahashi.

1. See Murasugi 1991, 1992 for more detailed discussion of the material in this section.
2. More precisely, a locative phrase can be a bare NP, but only when it is a locative goal as in (i).

(i) [$_{IP}$[$_{NP}$[$_{IP}$e$_i$ soke (ni) ikitai] hito$_i$]-wa, ...]
    there to want-to-go person-top
(those who wish to go there ...)
3. For an ECP account of examples such as (15b) under the DP hypothesis, see Stowell 1989 and the references cited there. Rizzi 1990 and Cinque 1990 discuss similar examples and attribute their ungrammaticality to the head government requirement on traces. (Their account crucially assumes that N, as opposed to V and A, is not a proper head governor.) Although their analysis has many attractive features, we will not pursue it in this paper.
4. We thank Tim Stowell for (20c).
5. Rizzi 1990 and Cinque 1990 discuss examples such as (15b) in this context. Since they consider locative phrases referential, they conclude that those examples cannot be ruled out on the basis of the non-referentiality of the wh-phrase, and propose an alternative account. See Fn.3 above for relevant discussion.
6. He argues that quantificational wh-phrases are non-referential, and ultimately appeals to the referential/non-referential distinction. Kroch 1989 and Frampton 1991, on the other hand, suggest that the quantificational nature of the wh-phrase itself, rather than its referentiality, should be the relevant property. See also Ishii 1990 for relevant discussion.
7. Our approach to (23) is quite similar to the one pursued in Frampton 1991, although the actual analysis is different from his in some crucial respects.
8. See Frampton 1991 for a similar proposal.
9. This also may be a matter of very strong preference. Although the wide scope reading of daremo is virtually impossible in (38), it is still easier in this example than in (i).
   (i) dareka -ga [John-ga daremo -o aisiteiru to] omotteiru
       someone-nom   -nom everyone-acc love   COMP think
       (someone thinks that John loves everyone)
Interestingly, such reading is even more difficult in (ii).
   (ii) dareka -ga [daremo -ga John-o aisiteiru to] omotteiru
        someone-nom everyone-nom   -acc love   COMP think
        (someone thinks that everyone loves John)
See Kayne 1981 for relevant discussion.
10. We would like to thank Hiroaki Tada and Chris Collins for helpful discussion on this issue.
11. See Collins 1992 for much relevant discussion. Note that this analysis assumes that the creation of operator-variable relation by deletion, as opposed to that by movement (+ deletion), is "costless."

REFERENCES

Aoun, J. (1985) Generalized Binding, Foris Publications, Dordrecht.
Aoun, J., N. Hornstein, D. Lightfoot and A. Weinberg (1987) "Two Types of Locality," Linguistic Inquiry 18.
Chomsky, N. (1977) "On Wh-Movement," in P. Culicover, T. Wasow and A. Akmajian, eds., Formal Syntax, Academic Press, New York.
Chomsky, N. (1986) Barriers, MIT Press, Cambridge, Mass.
Chomsky, N. (1989) "Some Notes on Economy of Derivation and Representation," MIT Working Papers in Linguistics 10.

Chomsky, N. (1992) A Minimalist Program for Linguistic Theory, MIT Occasional Papers in Linguistics 1.

Cinque, G. (1990) Types of A'-Dependencies, MIT Press, Cambridge, Mass.

Collins, C. (1992) "Economy of Derivation and the Generalized Proper Binding Condition," ms. MIT.

Frampton, J. (1991) "Relativized Minimality, A Review," ms. Northeastern University.

Hoji, H. (1985) Logical Form Constraints and Configurational Structures in Japanese, Ph.D. dissertation, University of Washington.

Hoji, H. (1986) "Scope Interpretation in Japanese and its Theoretical Implications," WCCFL 5.

Huang, C.-T. J. (1982) Logical Relations in Chinese and the Theory of Grammar, Ph.D. dissertation, MIT.

Ishii, Y. (1990) "Half-Relatives in Japanese and Related Issues," MIT Working Papers in Linguistics 12.

Kayne, R. (1981) "ECP Extensions," Linguistic Inquiry 12.

Kroch, A. (1989) "Amount Quantification, Referentiality, and Long Wh-Movement," ms. University of Pennsylvania.

Kuno, S. (1973) The Structure of the Japanese Language, MIT Press, Cambridge, Mass.

Kuroda, S.-Y. (1968) "English Relativization and Certain Related Problems," Language 44.

Kuroda, S.-Y. (1971) "Remarks on the Notion of Subject," reprinted in Journal of Japanese Linguistics 11 (1986).

Lasnik, H. and M. Saito (1984) "On the Nature of Proper Government," Linguistic Inquiry 15.

Lasnik, H. and M. Saito (1992) Move Alpha, MIT Press, Cambridge, Mass.

Longobardi, G. (1987) "Extraction from NP and the Proper Treatment of Head Government," ms. Scuola Normale Superiore, Pisa.

Mahajan, A. (1989) "On the A/A' Distinction: Scrambling and Weak Crossover in Hindi," ms. MIT.

May, R. (1985) Logical Form, MIT Press, Cambridge, Mass.

Murasugi, K. (1991) Noun Phrases in Japanese and English: A Study in Syntax, Learnability and Acquisition, Ph.D. dissertation, University of Connecticut.

Murasugi, K. (1992) "Locative/Temporal vs. Manner/Reason Phrases," Papers in English Linguistics and Literature, Kinjo Gakuin University.

Oka, T. (1989) "On the SPEC of IP," ms. MIT.

Perlmutter, D. (1972) "Evidence for Shadow Pronouns in French Relativization," in Chicago Which Hunt, CLS, Chicago.

Pesetsky, D. (1987) "WH-in Situ: Movement and Unselective Binding," in E. Reuland and A. ter Meuren, eds., The Representation of (In)definiteness, MIT Press, Cambridge, Mass.

Rizzi, L. (1990) Relativized Minimality, MIT Press, Cambridge, Mass.

Stowell, T. (1989) "Subjects, Specifiers, and X-Bar Theory," in M. Baltin and A. Kroch, eds., Alternative Conceptions of Phrase Structure, University of Chicago Press, Chicago.

A Note on Case Positions in Japanese

Naoko Nemoto

University of Connecticut

1. Introduction

The possibility that scrambling can be A-movement has been raised in the literature (Kuroda 1986, Mahajan 1989, Webelhuth 1989, Tada 1990, Saito 1992, among many others). In this paper, I will be concerned with the characteristics of scrambling to the position between the subject and the indirect object, and show that the hypothesis that this position is an A-position (see Mahajan 1989, Tada 1990, and Miyagawa 1991) accounts for a reconstruction issue which seems to be otherwise mysterious.

Mahajan (1989) argues that clause-internal scrambling can be A-movement in Hindi[1], as he shows, for example, that the scrambled phrases can bind a reflexive. The relevant examples are cited in (1).

(1)
a. ? mohan$_1$-ko apne   baccoN-ne   t$_1$ ghar se   nikaal diyan
      Mohan(DO)   self's children(SUB)   house from throw out
      (Mohan$_1$, self$_1$'s children threw out from the house)

b.   raam$_1$-ne ser$_2$ apne$_{1/2}$ baccoN-ko t$_2$ dikhaayaa
      Ram(SUB)   tiger(DO) self's children   showed
      (Ram$_1$ showed a tiger$_2$ to self$_{1/2}$'s children)

Saito (class lecture 1989, 1992) observes that this is the case in Japanese too.[2]

In (1a), scrambling is to a sentence initial position, crossing the subject. In (1b), scrambling is to a position between the subject and the indirect object. Let us call the former position the pre subject position and the latter position the post subject position for ease of exposition.

As noted in Mahajan (1990:46) (see also Saito (1992)), the grammaticality of the following example indicates that scrambling to the pre subject position can be A'-movement.

(2)
apne aap$_1$-ko raam$_1$ pasand kartaa hE
himself(DO)   Ram(SUB)   likes
(Himself, Ram likes)