

ASYMMETRIES IN ENGLISH AND JAPANESE

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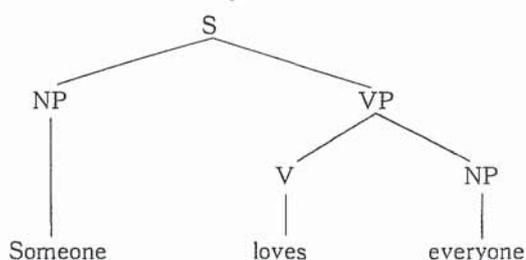
0. Introduction

It has often been claimed that Japanese has no subject-object asymmetries. It is true that Japanese lacks asymmetries of the English type, which favors the object over the subject, but it seems to me that Japanese does exhibit asymmetries, though in a direction opposite to English, namely, ones favoring the subject over the object. In this paper I will discuss a variety of scope phenomena in English and Japanese that manifest subject-object asymmetries and argue that they are best accounted for not by the ECP but by a tree-geometric constraint that I provisionally call the "Peripherality Condition."

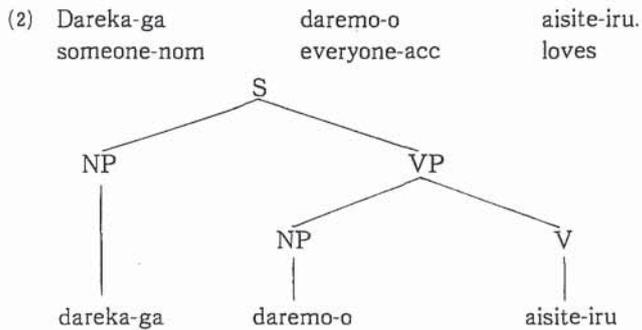
1. Multiply quantified sentences

It appears not uncommon in natural languages that an item X can take scope over another item Y even if X is asymmetrically c-commanded by Y at S-structure. Thus, consider the following English sentence containing multiple quantifiers:

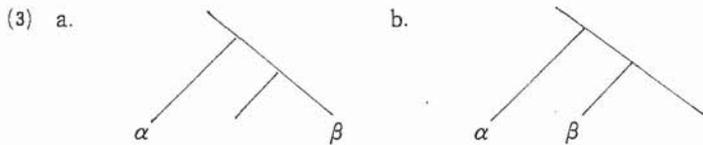
(1) Someone loves everyone.



As is well-known, the sentence is ambiguous: either quantifier can have wide scope with respect to the other, though the wide scope construal of the universal quantifier seems somewhat marked. By contrast, its Japanese counterpart is not ambiguous, as observed by Kuroda (1970) and discussed in detail by Hoji (1985).



This sentence has only the reading where the existential *dareka* has broader scope than the universal *daremo*. To deal with this disparity between English and Japanese, let us adopt a surface descriptive condition such as the following:



(4) The c-commanded item β can be ambiguously interpreted as taking either wide scope or narrow scope with respect to the c-commanding item α only if the former is located at the *periphery* of the scope of the latter at S-structure.

(5) The scope of α consists of all and only nodes that it c-commands.

(6) Node α c-commands node β if neither α nor β dominates the other and the first branching node that dominates α dominates β . (Reinhart (1976))

The "Peripherality Condition (PC)" (4) is satisfied in (1), but not in (2). Of course, things are really not that simple and counterexamples are easy to find. Later I will attempt to reduce the effects of the PC to certain privileged properties of adjunction structure. But for the time being, let us proceed with this rather pre-theoretical notion of peripherality.

2. Multiple wh-questions

In this section, I will consider multiple wh-questions in English and Japanese. Consider first the following celebrated example from Baker (1970):

(7) Who remembers where we bought which books?

Baker notes that sentences like (7) are ambiguous (cf. Kuno and Masunaga (1986)). The

ambiguity can be brought out by the two possible answers they can invite.

- (8) a. John remembers where we bought which books.
b. John remembers where we bought the physics book and Bill remembers where we bought the novel.

On the primary reading of (7), where (8a) would be an appropriate answer, *which books* is construed together with *where* to constitute an embedded multiple wh-question. On its second reading, which seems marginal for many people, (7) is interpreted with *which books* taking matrix scope together with *who*, so that the question might be answered, for example, by (8b). Let us now turn to the corresponding Japanese multiple wh-questions. Consider the following sentence:

- (9) Dare-ga [dare-ga nani-o katta ka] siritagatte-iru no?
who-nom who-nom what-acc bought +WH wants to know +WH

“(Lit.) Who wants to know what who bought?”

This sentence is ambiguous, but not the way the corresponding English multiple wh-question sentence is (cf. Saito (1987)). Not surprisingly, (9) has the reading where the second *dare* “who” and *nani* “what” are construed together as having embedded scope. In contrast to English, however, no reading is possible where the embedded object *nani* takes matrix scope. Instead, the sentence has the reading on which the embedded subject *dare* takes matrix scope and gets paired with the matrix subject *dare*. This wide scope reading of the embedded subject seems quite marginal for many people, but the point is that it is better than the wide scope reading of the embedded object wh-phrase¹. Why is it that in Japanese the embedded subject, but not the embedded object, can take matrix scope, whereas in English the embedded object, but not the embedded subject, can take matrix scope? The Empty Category Principle (ECP) does not work for this asymmetry in Japanese.

- (10) The Empty Category Principle (ECP):
A nonpronominal empty category must be properly governed.

- (11) α properly governs β iff α governs β and
a. α is a lexical category X^0 ($X \neq \text{Agr}$) or
b. α is coindexed with β .

While it might be debatable whether the subject in Japanese is properly governed, it is hardly controversial that the object is properly governed. If we were to hold on to the ECP to deal with the above data, we would have to claim that in Japanese the subject is properly governed but the object is not, which is highly unlikely. If anything, the reverse should be the case. One possible alternative comes from the idea suggested in section 1 for multiple quantification: the

Peripherality Condition (PC).

But before we present our own analysis, there are two things to bear in mind. First, although we have so far been talking as if the relevant distinction were between subject and object, this does not seem right. Consider the sentences below under the matrix scope interpretation of the postpositional phrase *doko-de* "at what place":

- (12) a. Dare-ga [John-ga doko-de nani-o katta ka] siritagatte-iru no?
who-nom -nom what place-at what-acc bought +WH wants to know +WH
“(Lit.) Who wants to know what John bought where?”
- b. Dare-ga [doko-de John-ga nani-o katta ka] siritagatte-iru no?
who-nom what place-at -nom what-acc bought +WH wants to know +WH

I find (12b) easier to interpret as a matrix multiple wh-question than (12a), where *doko-de* is not clause-initial. This shows that what is really at stake is the peripheral vs. non-peripheral distinction².

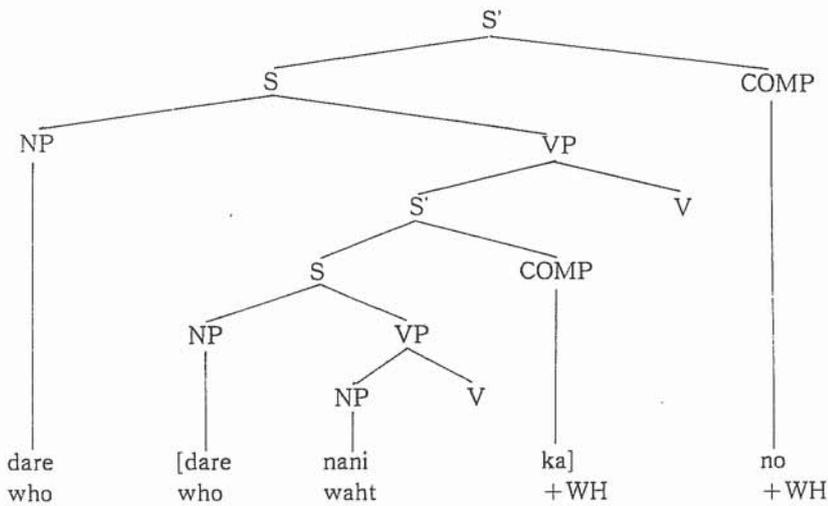
Second, some words about Japanese “wh-words” may be in order here. It should be borne in mind that they can be used not only as interrogative words but as negative polarity items as well.

- (13) a. as interrogative words
dare ... ka “who”
nani ... ka “what”
doko ... ka “where”
- b. as negative polarity items
dare (...) mo ... nai “not ... anyone”
nani (...) mo ... nai “not ... anything”
doko (...) mo ... nai “not ... anywhere”

Although these words are usually considered to be inherently interrogative, they might be more appropriately characterized as a kind of free variables that acquire quantificational force only when they are placed in the scope of the question morpheme *ka* or the negative morpheme *mo...nai*. This idea is originally due to Kuroda (1965) and has been extensively pursued in Nishigauchi (1987). Part of the reason why Japanese lacks syntactic wh-movement may thus come from this peculiar status of Japanese “wh-words,” because interrogative scope is already definable at S-structure by the question morpheme *ka*, base-generated in COMP.

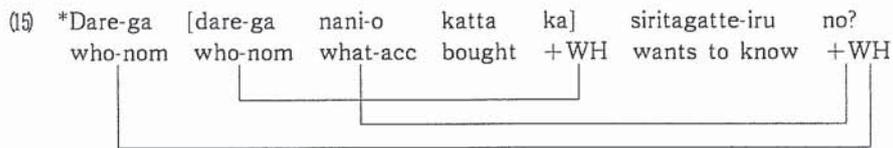
Let us now see how the asymmetry observed in (9) is accounted for by the PC in conjunction with the idea just mentioned about the Japanese alleged wh-words. The S-structure configuration of (9) might look like (14) below as far as the wh-*ka* relation is concerned.

(14)

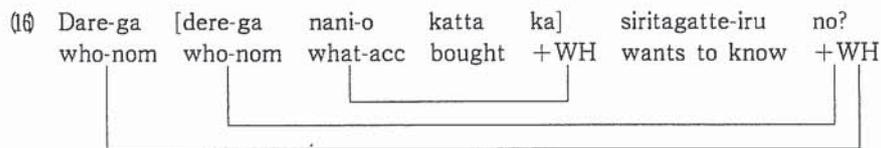


Thus, I would claim that the embedded subject wh-word *dare* in (9) can take matrix scope and get licensed by the matrix question morpheme *ka*, because it is located at the periphery of the scope of the embedded question morpheme.

One might object here that there is no real asymmetry involved in (9), because, as Saito (1987) observes, if the embedded object wh-word *nani* "what" took matrix scope, it would end up violating the so-called "Crossing Constraint" or the Nested Dependency Constraint (NDC) of Fodor (1978).



When the embedded subject wh-word takes matrix scope, the relevant dependencies are nested, so that the sentence is correctly predicted to be good.



But it does not necessarily follow from this that our account is to be abandoned in favor of the crossing-based account. The two sentences of (12), for example, cannot be accounted for by the Crossing Constraint alone, because both sentences observe the constraint. Consider also the following pair of sentences:

- (17) a. Dare-ga [dare-ga kinoo Ginza-de nani-o katta ka] siritagatte-iru no?
 who-nom who-nom yesterday -at what-acc bought +WH wants to know +WH
 "(Lit.) Who wants to know what who bought at Ginza yesterday?"
- b. Dare-ga [kinoo Ginza-de dare-ga nani-o katta ka] siritagatte-iru no?
 who-nom yesterday -at who-nom what-acc bought +WH wants to know +WH

The two sentences are the same except that in (17a) the embedded subject wh-word *dare* "who" occupies the initial position of the embedded clause, whereas in (17b) *dare* is preceded by an adverbial and hence is not peripheral with respect to the embedded question morpheme. Although judgments are delicate, there seems to be a contrast between the two sentences; it is harder to interpret the embedded *dare* in (17b) as taking matrix scope. The NDC cannot be the right account for the contrast here, because the relevant dependencies are nested in both sentences. The data in (17) thus appear to lend further support for the necessity of the proposed condition PC; in order to take matrix scope, a wh-phrase has to occupy the peripheral position of the embedded question morpheme *ka*. On the other hand, this does not imply that NDC is entirely superfluous in describing Japanese data. On the contrary, the facts seem to suggest that both the PC and the NDC are needed as independent constraints. The matrix scope construal of the embedded object *nani* "what" in (9) is definitely worse than the matrix scope construal of the embedded subject *dare* "who" in (17b), indicating that the former construal violates both the NDC and the PC, whereas the latter is only in violation of the PC.

3. Asymmetry in negation

3.1. Kayne (1979)

In *Two Notes on the NIC* (1979), Kayne observes that in such French sentences as (18), the negative word *personne* "no one" can take scope over the matrix clause, whereas such a wide scope reading is harder to get for the negative in (19).

- (18) ? Je n'ai exigé qu'ils arrêtent personne.
 "I have required that they arrest no one."

- (19) *Je n'ai exigé que personne soit arrêté.
 "I have required that no one be arrested."

He further points out that an essentially similar phenomena is found in English.

- (20) ? In all these weeks, he's suggested that they write not a single term paper.
- (21) ?*In all these weeks, he's suggested that not a single term paper be written.

Kayne's analysis of these data goes as follows. Suppose that these negative items undergo the Quantifier Raising (QR) at LF. Then, the LF representations for (18) and (19) would roughly look like the following:

(22) (for (18))
 [personne, [je ne ai exigé [que [ils arrêtent e_i]]]]

(23) (for (19))
 [personne, [je ne ai exigé [que [e_i soit arrêté]]]]

The ECP correctly predicts (19) to be worse than (18) because QR of the negative word leaves behind a trace not properly governed, as shown in (23). How is this contrast between (18) and (19) captured on our approach? First, let us assume that *exiger* defines scope over the embedded clause³. Then, we can say that *personne* in (18) can take matrix scope because it is located at the periphery of the scope of *exiger*, whereas *personne* in (19) cannot be interpreted as taking scope over the matrix clause because it is not peripheral with respect to *exiger*.

Rizzi (1980; 1982) gives similar data from Italian. Look at the following examples:

(24) Non pretendo che tu arresti nessuno.
 "(1) neg require that you arrest nobody."

(25) Non pretendo che nessuno ti arresti.
 "(1) neg require that nobody arrest you."

He says that when *nessuno* has wide scope, (24) is acceptable (though marginal for some people) but (25) is not. This is exactly the same type of asymmetry as that observed for French by Kayne. What is of more interest to us is Rizzi's observation that if the subject is placed in a postverbal adjoined position, which is freely allowed in Italian, (25) becomes acceptable under the wide scope interpretation of *nessuno*.

(26) Non pretendo che e [[ti arresti] nessuno].


He claims that in (26) *nessuno* is properly governed by the verb, thus escaping ECP violation. This claim seems dubious, however. It is questionable whether a phrase in such an adjoined position as in (26) is lexically governed by the verb. This is particularly so if government entails c-command. For example, if the anti-c-command condition were a necessary condition on a parasitic gap construction, the object trace, hence the verb as well, would not c-command the parasitic gap in an adjunct phrase. This means that an adjunct is generally not c-commanded by the verb. Also, the so-called *ne*-cliticization is impossible from this postverbal adjunct position, indicating that the position is not c-commanded by AUX, the target of this

cliticization. If so, that implies that the postverbal adjunct position is not c-commanded by the verb, which is structurally lower than AUX. On our account, the postposed negative phrase *nessuno* can have wide scope, because it is located at the periphery of the scope of *pretendere* (see footnote 3).

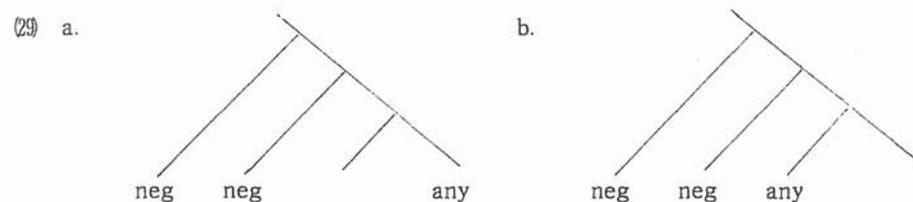
3. 2. Polarity *Any*

We have seen in the previous section how the asymmetry in negation is handled by the ECP or the PC, and it has turned out from the consideration of Italian data that the ECP account does not necessarily fare better. In this section we will consider the behavior of polarity *any* in English, which seems to have been puzzling to some linguists (cf. Kayne (1979)). Unlike such inherent negatives as *personne*, or *not a single term paper*, it seems at first sight that polarity *any* exhibits no subject-object asymmetry. If it were a universal quantifier taking the widest scope, as has sometimes been claimed, and had to move at LF, the following pair of examples should show a contrast in ECP violation, which they in fact do not.

- (27) a. John doesn't think Mary loves anyone.
 b. John doesn't think anyone loves Mary.

Therefore, Kayne concludes that *any* is not subject to LF-movement that would assign it wide scope over the matrix clause. I think we need to look at polarity *any* in a different perspective, though the conclusion that it is not a universal quantifier seems correct (cf. Ladusaw (1979) and Chomsky (1981, 239)). Let us check the following: whether *any* can take wide scope with respect to a negative element when there is another negative trigger higher up in the tree. This can be tested by comparing sentences like the following:

- (28) a. I don't believe it impossible that John saw anyone.
 (1) "I believe it is possible that John saw at least one person."
 (II) ? "I believe of each person that it is possible that John saw him."
 b. I don't believe it impossible that anyone saw John.
 (1) "I believe it is possible that at least one person saw John."
 (II) ? * "I believe of each person that it is possible that he saw John."



(29a) and (29b) are simplified schematic representations of the *neg-any* relations found in (28a) and (28b), respectively. Our analysis predicts that in (28a) *anyone* can have broader scope than

the lower negative *impossible* and be licensed by the higher negative *not*, because it is positioned at the periphery of the scope of the lower negative, as shown by (29a). By contrast, *anyone* in (28b) is not allowed to have wider scope than the lower negative because it is not peripheral with respect to that negative, as shown by (29b). This prediction seems to be borne out, as indicated. Thus, polarity *any* is no exception: it shows asymmetry of the same kind as do negative phrases like French *personne* or English *not a single term paper*.

4. Interaction of quantifiers and wh-phrases in Japanese

Hoji (1985) makes a very interesting observation concerning the quantifier-wh interaction in Japanese. Consider the following sentence:

- (30) ? * Daremo-ga dare-o aisite-iru no?
 everyone-nom who-acc loves +WH
 "(Lit.) Everyone loves who?"

The sentence is very awkward; in particular, it can never be interpreted as a question inducing a multiple paired answer. Hoji's generalization is that a quantifier and a wh cannot interact within the same clause in such a way that the quantifier takes wide scope with respect the wh. However, it is interesting to note that (30) improves a lot if embedded, as in (31).

- (31) ? Mary-wa [daremo-ga dare-o aisite-iru ka] sitte-iru.
 -top everyone-nom who-acc loves +WH knows
 "Mary knows who everyone loves."

As it turns out, however, this example does not undermine Hoji's claim but rather provides further support for it. I claim that in (31) the peripheral universal takes matrix scope, while the wh-word takes embedded scope, so that there is no direct scope interaction between the two. In support of this claim, compare the following pair:

- (32) a. ? Mary-wa [daremo-ga kinoo doke-e itta ka] sitte-iru.
 -top everyone-nom yesterday where went +WH knows
 "Mary knows where everyone went yesterday."
 b. ? * Mary-wa [kinoo daremo-ga doko-e itta ka] sitte-iru.

(32b) is just as bad as (30) under the intended interpretation, because the universal does not occur at the initial position of the embedded clause. A similar observation holds in English.

- (33) a. Who inspected every school?
 b. Which school did everybody inspect?

As May (1985) points out, (33a) can only be understood with *who* having broad scope. However, Ruth Kempson has claimed that if the sentence is embedded, the universal can take scope over the wh word.

(34) She told me who inspected every school.

May's answer to this apparent puzzle in (34) is that in reality the universal does not directly interact with the wh but rather it takes matrix scope, as paraphrased by (35).

(35) She told me of each school_i who inspected it_i.

As for (33b), May says that *everybody* cannot have matrix scope even if the sentence is embedded.

Thus, it has proved that peripherality plays a crucial role both in English and Japanese when a quantifier in an embedded clause is interpreted as taking matrix scope. This result also leads us to raise the question whether quantifier interpretation is really clause-bounded or not.

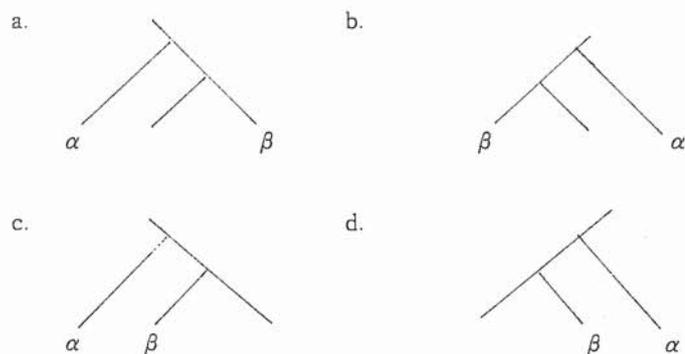
5. The Peripherality Condition

Up to this point I have crucially relied upon the notion of periphery which has remained at a quite intuitive level at best. Let us try to give it more precise form.

(36) The Peripherality Condition (PC):

When α asymmetrically c-commands β , β can take wide scope with respect to α only if β is located at the periphery of the scope of α , where periphery is defined as follows:
 β is at the periphery of the scope of α iff for every node x between β and α that is in the scope of α , either

- (i) x is the X-most node or
- (ii) x is lexically governed with government working in the X direction (X=right or left)⁴.



Suppose here that β is dependent for its proper interpretation on α ; for example, take β as a quantifier and α as another quantifier or take β as polarity *any* and α as a negative item.

Then, in cases (a) and (b), β can have broader scope than α because it is located at the periphery of the scope of α , whereas in cases (c) and (d) β can only take narrow scope with respect to α because it is not peripheral with respect to α . If it were correct, this would be the simplest possible unified account of asymmetries in English and Japanese. Clause (ii) of (36), a kind of directionality restriction like the Connectedness Condition of Kayne (1983), was added to deal with clear counterexamples to the PC as formulated with clause (i) alone in (36). Look at the following sentences:

(37) I don't believe it impossible that John considers anyone stupid.
 α β

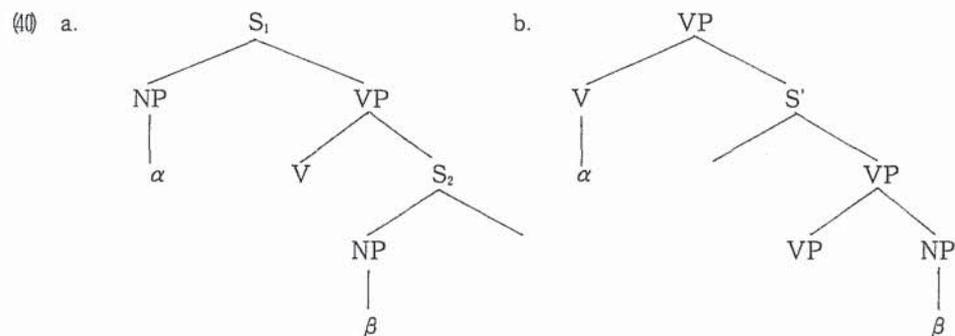
(38) Someone believed everyone to be nice.
 α β

Neither in (37) nor in (38) is the relevant item β located at the periphery of the scope of α in the sense of (36(i)). Nevertheless, β can take wide scope with respect to α in either sentence. The point is obvious: a dependent item β can have broader scope than its locally c-commanding licenser α only if it is lexically governed, even though it is not peripheral with respect to α in the sense of (36(i)).

(39) α lexically governs β iff α governs β and α is a lexical category X^0 ($X \neq \text{Agr}$).

This might sound at first as if we had to give in to the ECP account. But remember that the Japanese data we have seen systematically show subject-object asymmetry favoring the subject over the object, or to be more exact, peripheral vs. nonperipheral asymmetry. At present there seems little evidence to show that the subject in Japanese is properly governed. Still less evidence is there that an adjunct phrase is properly governed, though it can take wide scope if it occupies the sentence-initial position. Therefore, it seems hopeless to pursue a solution along the lines of the classical ECP.

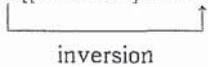
Let us see in more detail how the sentences (37) and (38) are accounted for by the Peripherality Condition as formulated as in (39).



Think of (40a) as an ECM construction where β is the subject of the embedded clause, lexically governed by the matrix verb. This is illustrated by (38), repeated here.

(41) [_{S1} Someone [_{VP} believed [_{S2} everyone to be nice]]].

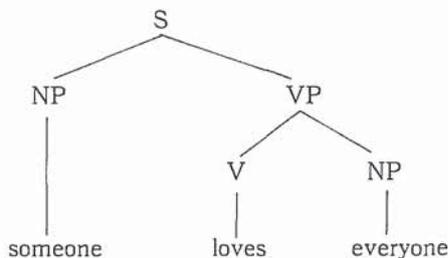
By the PC (36), the universal can have wider scope than the existential, because every node that is between the two quantifier and is in the scope of α , i.e. NP, S₂, VP, is either the rightmost node or lexically governed with government going to the right. (40b) is illustrated by the Italian sentence with a negative quantifier we have discussed before.

(42) Non pretendo che e [[ti arresti] nessuno]


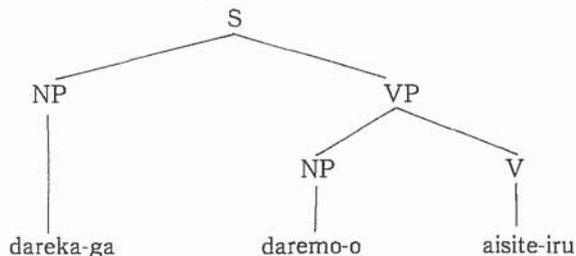
We have argued above that it is unlikely that the VP-adjoined postverbal subject is lexically governed by the verb, yet our PC allows it to take matrix scope because every node between it and the verb *pretendere* that is in the scope of the verb, is uniformly on a right branch, thus satisfying (36(1)).

Let us next see how the PC as given above can account for the cases of multiple quantification discussed before. Consider again the following sentences:

(43) a. Someone loves everyone.



b. Dareka-ga daremo-o aisite-iru.
 someone-nom everyone-acc loves



In the English multiply quantified sentence (43a), every node between *everyone* and *someone* that is in the scope of the former is either on a right branch or lexically governed with government going to the right, thus guaranteeing that the universal can take broad scope with respect to the existential. On the other hand, the PC is not satisfied in the Japanese version (43b), because the object NP node is not on a right branch or lexically governed with government working to the right, so that the universal is predicted to be unable to have wide scope, which is correct.

6. Deriving the PC

Yet one might question the status of the Peripherality Condition as a grammatical principle. While it is intuitively clear, the notion of periphery is rather difficult to define precisely in structural terms. It would be desirable if possible to derive its effect from other general principles of grammar. In this section I will explore the possibility of reducing them to some special properties of adjunction structure. The idea we will use is originally due to May (1985) and adopted by Chomsky (1986). It will turn out that we can reduce the PC to this idea only in part, so that the major part of the PC is still needed.

Consider (44) below, a typical adjunction structure with α adjoined to γ :

(44) $\dots \delta \dots [_{\gamma} \alpha [_{\gamma} \dots \beta \dots]]$

According to Chomsky, α in (44) is not dominated by the category γ ; rather, γ consists of two "segments," and a category is dominated by γ only if it is dominated by both of these segments. In this case, α governs β even if γ is a barrier, where the notion of barrier is to be defined.

(45) α governs β iff α m-commands β and there is no γ , γ a barrier for β , such that γ excludes α .

(46) α excludes β if no segment of α dominates β .

If γ is a barrier in (44), then δ does not govern β , because there is a barrier γ that dominates β and excludes δ . On the other hand, α governs β in this case, since γ does not exclude α . See Chomsky (1986) for more details.

The intuitive idea we would like to utilize is that in such a configuration as (44), α is ambiguously construed either as being still inside γ or as being already outside γ . We will extend this idea to adjunction structure in general, whether derived by movement or base-generated. For example, it has sometimes been pointed out in the literature that some adverbials behave ambiguously, either as VP adverbials or as sentence adverbials. Consider (47).

(47) [_{IP} John I [_{VP} file the paper] without reading it]]

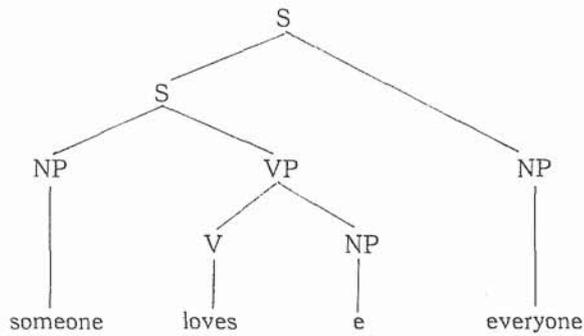
By the above idea concerning adjunction structure, the adjunct PP can be regarded in place either as a VP adverbial or a sentence (=IP) adverbial.

Let us see how this idea accounts for the disparity between English and Japanese concerning multiple quantification.

- (48) a. Someone loves everyone.
 b. Dareka-ga daremo-o aisite-iru.

Huang (1982) attributed the ambiguity of multiply-quantified sentences like (48a) to the existence of a language-specific restructuring rule in English.

(49)



Thus, the universal quantifier in (48a) can, as a marked option, occupy the sentence-final adjoined position, which is presumably taken to be the same position as that for some extraposed phrases or some sentence adverbials.

- (50) a. A man arrived who came from Boston.
 b. What will she do when she finishes school?
 c. He knew the town well apparently.

As a small piece of evidence for the structure (49), note that it is necessary to heavily stress the object universal quantifier in order to assign it wide scope. It thus appears that Huang was basically on the right track, though his solution probably has much more generality than he originally thought.

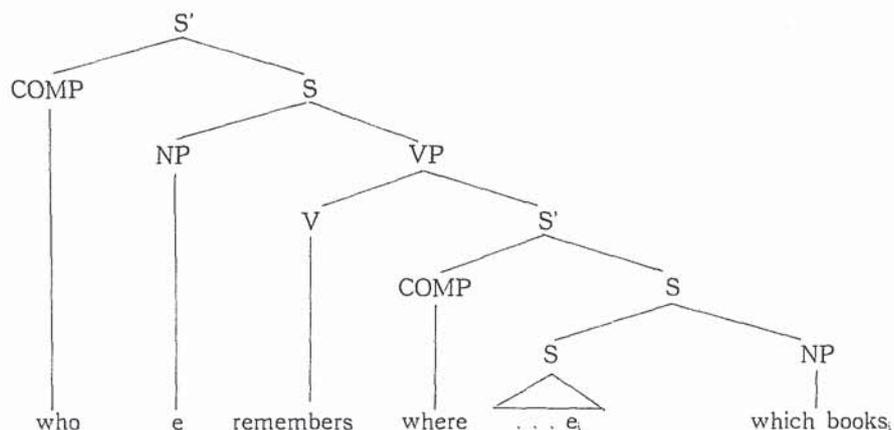
Multiple wh-question sentences may be subject to essentially the same analysis.

- (51) a. Who remembers where we bought which books?
 b. Dare-ga [dare-ga nani-o katta ka] siritagatte-iru no?
 who-nom who-nom what-acc bought +WH wants to know +WH

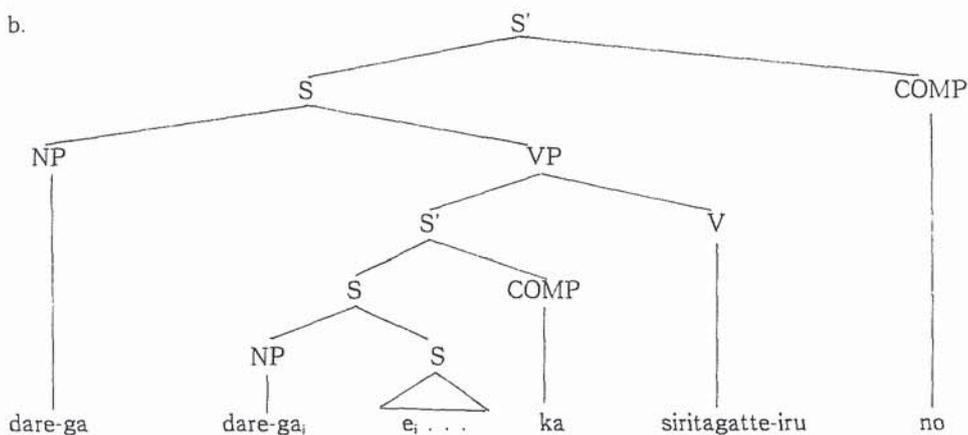
Thus, we might claim that when the embedded wh-phrases take matrix scope and interact

with the matrix wh-phrases, the sentences of (51) have the following structures:

(52) a.



b.



The embedded wh-phrase *which books* in (51a) is located at the sentence-final adjoined position, whereas *dare-ga* in (51b) occupies the sentence-initial adjoined position, which I take to be the designated position for focussed phrases. The barrierhood of the embedded S node is thus voided through this adjunction process, so that the wh-phrases in question can virtually take matrix scope. Note that these wh-phrases need to be heavily stressed in order to be interpreted as taking matrix scope.

This line of account receives some support from the following observation. Compare the following sentences as regards the wide scope interpretation of *dare-ga* "who":

- (53) a. ? Dare-ga [dare-ga kinoo nani-o katta ka] siritagatte-iru no?
 who-nom who-nom yesterday what-acc bought +WH wants to know +WH
 "(Lit.) Who wants to know what who bought yesterday?"
 b. ?*Dare-ga [kinoo dare-ga nani-o katta ka] siritagatte-iru no?
 c. *Dare-ga [KINOO dare-ga nani-o katta ka] siritagatte-iru no?

The contrast between (53a) and (53b) might vary from person to person, but it becomes clearer if the clause-initial adverbial *kinoo* is assigned heavy stress, as shown in (53c). The heavy stress unequivocally signals that *kinoo* already occupies the adjoined focus position, so that there is no chance for *dare-ga* "who" to take matrix scope via adjunction. Much the same seems to obtain in English as well. Look at the following examples:

- (54) Who remembers where we bought what YESTERDAY?
- (55) a. I don't believe it impossible that John saw anyone YESTERDAY.
 b. I don't believe it impossible that yesterday John saw anyone.
- (56) ?? What do you think that yesterday John bought?

It seems that people find the wide scope interpretation of *what* more difficult in (54) when *yesterday* takes on focal stress than when it does not. Similarly, in (55), treating the sentence-final temporal adverbial as a focus or preposing it makes the wide scope construal of *anyone* harder. David Pesetsky (p.c.) points out that wh-movement becomes worse in a preposing context, such as (56).

While it appears quite promising, this approach has one serious problem. The problem is again how to deal with the cases where the relevant items are non-peripheral. In such cases, English still allows matrix scope interpretation, whereas Japanese does not, observing strict peripherality.

- (57) Who remembers where we bought which books yesterday?
- (58) a. I don't believe it impossible that John saw anyone there.
 b. I don't believe it impossible that anyone saw John there.
- (59) Someone considers everyone insane.
- (60) Dare-ga [kinoo dare-ga nani-o katta ka] siritagatte-iru no?

Following David Pesetsky's suggestion, we might simply assume that English allows LF rightward focus movement (or LF Heavy NP Shift), whereas Japanese does not allow LF leftward focus movement for some reason. This immediately explains the variety of subject-object asymmetries in English that we have seen (e.g. (58a) and (58b)), since it is a well-known fact that Heavy NP Shift is possible from the object position but not from the subject position. The latter half of the assumption is necessary for Japanese, because otherwise we would not be able to explain why (61), for example, does not allow the object universal quantifier to have wide scope, even if it receives heavy stress.

- (6) Dareka-ga DAREMO-O aisite-iru.
 someone-nom everyone-acc loves

But why is there such a difference between English and Japanese? This is essentially the same question that was raised at the outset of this paper concerning the disparity in scope asymmetries between English and Japanese. Thus, we are back to where we started. This means that we cannot completely reduce the PC to the principle of adjunction structure, so that we still need the PC in its major part or some other version of directionality constraint anyway. Nevertheless, the idea of reducing the Peripherality effect, if in part, to some special properties of adjunction structure appears to be worth pursuing further.

FOOTNOTES

1. When *dare* is replaced by *dono* "which," the wide scope reading of the embedded subject becomes slightly easier.

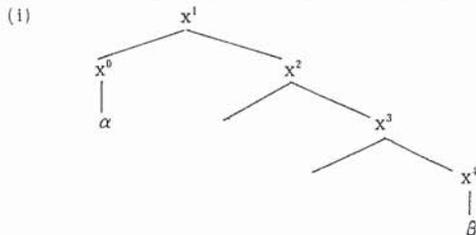
- (1) *Dono ko-ga [dono hito-ga nani-o katta ka] siritagatte-iru no?*
 which girl-nom which person-nom what-acc bought +WH wants to know +WH
 "(Lit.) Which girl wants to know what which person bought?"

Yet it is not entirely clear whether (1) is subject to genuine multiple question interpretation. It seems to me that it can only be construed under its alleged matrix multiple wh-question interpretation as asking for a single-paired answer rather than a multiple-paired answer. The same thing may be said with (9), though there appears to be some more complication for this case. If there were people who interpret (9) as a question inducing a multiple-paired answer, it might be because (9) allows group interpretation through which a multiple question-like reading can be obtained. But this is speculation at present. Much remains to be investigated about multiple wh-questions, especially about their semantics.

2. It seems that wide scope interpretation is slightly harder when the relevant wh phrase is an adverbial or postpositional phrase even if it occurs at the peripheral position than when it is a subject or a clause-initial scrambled object. I have no satisfactory explanation for this fact. I nevertheless maintain that to the extent that (12a) and (12b) contrast, the Peripherality effect is by no means illusory.

3. Alternatively, one might propose that the embedded complementizer *que* define scope over the embedded clause. Although there is admittedly some arbitrariness, I will nonetheless stipulate that *exiger* is the nearest scope-bearing element that affects the interpretation of *personne*. When *personne* has narrow scope with respect to *exiger*, the negative phrase is interpreted as part of the proposition expressed by the embedded clause, while when it has wide scope with respect to *exiger*, it substantially takes matrix scope, so that it is not the embedded clause but the matrix clause that is negated.

4. The phrase "that is in the scope of α " is intentionally added here. Take (1) for example.



The additional phrase enables us to exclude x^0 and x^1 from consideration; all we need consider is the set of nodes $\{x^2, x^3, x^4\}$. This is as it should be, because periphery means "the periphery of the scope of α ."

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