SOME ASYMMETRIES IN JAPANESE AND THEIR THEORETICAL IMPLICATIONS

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ABSTRACT

This thesis argues for scrambling in Japanese as an instance of S-structure Move-alpha, and examines its properties. More specifically, I argue that scrambling is an S-structure adjunction operation. It is shown that given this hypothesis, the properties of scrambling can for the most part be deduced from the interactions of the basic language-particular properties of Japanese and the principles of Universal Grammar. Thus, the discussion in this thesis suppports not only this hypothesis on scrambling but also the general principles that are crucially assumed to derive the properties of scrambling.

Chapter 2 presents evidence for the configurational analysis of Japanese, and hence for an analysis of the "free word-order" facts in this language in terms of scrambling. In addition to those facts that clearly support the configurational analysis, I discuss some phenomena that seem problematic to this analysis and argue that they are expected under the hypothesis that scrambling is an S-structure adjunction operation.

Chapter 3 examines further properties of scrambling. I first argue that the relative restrictedness of "long-distance" scrambling should be accounted for on independent grounds, and hence, contrary to the recent proposals in the literature, there are no reasons to treat it separately from clause-internal scrambling. Secondly, I show that the non-scramblability of subject NPs follows straightforwardly from the nature of nominative Case marking in Japanese. Finally, I speculate on the proper characterization of scrambling itself. It is suggested that any node is a possible adjunction site for scrambling, and that successive-cyclic scrambling is possible.

Chapter 4 discusses the implications of our findings on scrambling for some traditional problems in Japanese grammar. The first problem has to do with the fact that

scrambling, but not topicalization, is subject to Subjacency in Japanese. It is shown that this contrast between scrambling and topicalization is expected, given that Japanese is a PRO-drop language and that scrambling is a regular adjunction operation. The second problem has to do with the derivation of the topic construction in Japanese. I argue that contrary to the common belief, the topic construction can be derived by movement, and further, that the movement operation involved here is a subcase of scrambling.

Thesis Supervisor: Noam Chomsky
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Chapter 1

Introduction

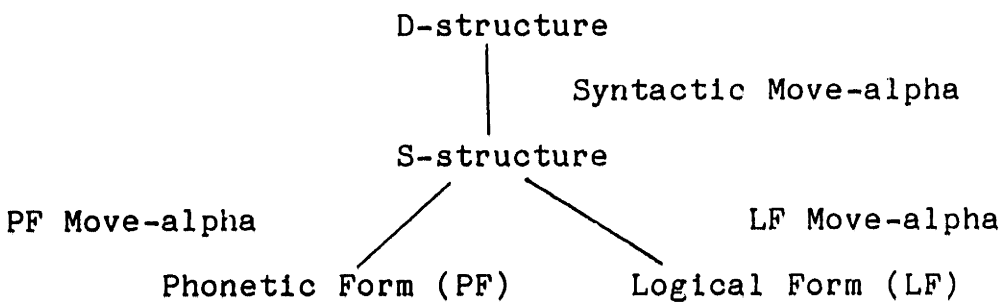
It has often been said that the difficulty in developing a grammar of Japanese in a parallel way to that of English is caused by the lack of interesting movement rules in Japanese. It is certainly true that the examination of the movement operations has played a major role in the development of theoretical syntax. And it is also certainly true that Japanese lacks syntactic wh-movement and it appears that this language lacks raising as well. Thus, it is quite understandable when a Japanese syntactician expresses his frustration that many of the recent analyses of European languages cannot be applied directly to Japanese.

The main purpose of this thesis is to defend the existence of scrambling in Japanese, and to show that it has the characteristics expected of a syntactic movement operation, or more specifically, of an adjunction operation. Harada (1977) already argued that scrambling has the bounding

properties of movement rules and hence, concluded that it is a "well-behaved transformation." (Cf. also Haig, 1976.) This thesis, thus, can be viewed as an extension of his work. Once we know that scrambling has the basic properties of Move-alpha, then it becomes possible to use the facts of scrambling to make contributions in the study of the general constraints on movement and the distribution of empty categories. This thesis is intended to be a preliminary study for this goal, and is written with this goal in mind.

In this study, I will assume the basic features of the EST (Extended Standard Theory) and the GB (Government adn Binding) Theory. In particular, I will assume the following model of core grammar:

(1)



As shown above, the four levels of representations are related through the single rule, Move-alpha, which states "Move anything anywhere."[1] Under this model, the D-structure, S-structure and LF representations of the

sentence in (2) are roughly as in (3).

(2) Who bought what?

(3)a. D-structure

$[_{S'}[_{COMP}][_{S}$who bought what]]

b. S-structure

$[_{S'}[_{COMP}$who$_i][_S$t$_i$ bought what$_j$]]

c. Logical Form

$[_{S'}[_{COMP}$what$_j$ who$_i$] $[_S$t$_i$ bought t$_j$]]

The D-structure, S-structure and LF representations are constrained by the Projection Principle, which states, informally, that theta-marking properties of each lexical item must be represented categorically at each of these levels.

The representations of sentences and the rule Move-alpha are constrained by further principles, which fall into the following subsystems:

(4)a. X-bar theory

b. Theta-theory

c. Case theory

d. Binding theory

e. Bounding theory

f. Control theory

g. Government theory

The principles that are relevant to the discussion in this thesis will be introduced at the appropriate places. For a detailed discussion of the principles, as well as the components, assumed in the GB theory, the reader is refered to Chomsky (1981). For brief surveys of the basic assumptions of GB, the reader is refered to the introductory chapters of Chomsky (1982) and some recent theses written in the GB framework, e.g., Stowell (1981), Huang (1982), Pesetsky (1982), Koopman (1983) and Travis (1984).

The purpose of Chapter 2 is to defend the analysis of the "free word-order" facts in Japanese in terms of scrambling, and hence, scrambling itself as a movement operation. I will first discuss the non-configurational analysis of the "free word-order" facts in Japanese, which includes a proposal to do away with scrambling entirely. (Cf. Hale, 1980, Farmer, 1980.) Then, I will briefly go over some of

the arguments against the non-configurational analysis that have been proposed in the literature, and argue for the configurational analysis of Japanese, as well as for the scrambling operation.[2] The analysis of the "free word-order" facts in Japanese defended here is very much in line with the research on word-order found in Emonds (1979, 1981), Koopman (1983) and Travis (1984). In the latter part of Chapter 2, I will discuss some phenomena which may seem problematic for the scrambling analysis of the "free word-order" facts in Japanese. More specifically, I will discuss the apparent lack of weak crossover effects with scrambling and the fact that scrambling does not allow resumptive pronouns. I will argue that the relevant facts are not only consistent with the scrambling analysis but also provide further evidence that scrambling is an S-structure adjunction operation. Finally, I will take up the recent proposal that some languages are in some sense immune from the effects of the Projection Principle. (Cf. for example, Hale, 1982.) There, I will suggest an alternative account of the relevant facts, and defend the Projection Principle as a universal principle of core grammar.

In Chapter 3, I will examine the interaction of scrambling

with some constraints on movement. The first issue to be discussed in this chapter is whether scrambling is clause-bound or not. The issue here, more specifically, is whether what we may call "long-distance preposing" should be considered as a subcase of scrambling or not. It has been argued in the literature that "long-distance preposing" is more restricted than clause-internal scrambling, and hence, that these two operations cannot be analyzed as two instances of the same operation. (Cf. for example, Tonoike, 1980; Miyara, 1981, 1982.) I will first argue that "long-distance" preposing has the basic properties of scrambling, and hence, should be analyzed as a subcase of scrambling. Then, I will show that the ungrammatical examples that are discussed in the literature as evidence that "long-distance preposing" is more restricted than clause-internal scrambling are to be ruled out on independent grounds, and hence, do not constitute evidence that scrambling is clause-bound.

In the second section of Chapter 3, I will first propose a descriptive generalization that subject NPs can never be scrambled. Then, I will discuss some subject/object asymmetries with respect to Case assignment in Japanese, and show that given the nature of nominative Case assignment in Japanese, the non-scramblability of subject NPs follows from

a condition which requires that variables be Case marked. The third section contains a brief discussion on the proper characterization of scrambling. First, I will examine the adjunction sites (in the sense of Baltin, 1982a) for scrambling, and suggest that scrambling in principle can adjoin phrases to any node. Secondly, I will argue that the non-scramblability of VPs is to be accounted for on independent grounds. This leads us to the hypothesis that scrambling in principle can move any maximal projection. And finally, I will briefly discuss the bounding properties of scrambling, and argue that scrambling can take place successive-cyclically. In particular, I will show that given the hypothesis that successive-cyclic scrambling is possible, the bounding properties of scrambling follow straightforwardly from the Subjacency Condition and Huang's (1982) CED (Condition on Extraction Domain).

Chapter 4 is concerned with some traditional problems of topicalization in Japanese. I will show that our findings on the nature of scrambling enables us to clarify and solve those problems of Japanese topicalization. The first problem has to do with the fact that scrambling, but not topicalization, is constrained by Subjacency. In Perlmutter (1972), the insensitivity of topicalization to Subjacency is attributed to the fact that Japanese is a PRO-drop

language. However, an objection is raised to this account in Haig (1976) on the basis of the fact that scrambling is subject to Subjacency. I will defend Perlmutter's account first by arguing for Kuno's (1973a) analysis of Japanese topicalization, and then by showing that given the impossibility of resumptive pronouns with scrambling, Perlmutter's PRO-drop account should not extend to the case of scrambling.

The second issue to be discussed in Chapter 4 has to do with the derivation of topic constructions in Japanese. A movement analysis of this construction is proposed in Kuroda (1965b). However, it is shown convincingly, I believe, in Kuno (1973a) that topic in Japanese can be base-generated in the sentence-initial position, and that this construction need not involve movement. I will first argue that Kuroda's movement analysis can be maintained consistently with Kuno's base-generation hypothesis, and further, that Kuroda's movement rule should be considered as a subcase of scrambling. Secondly, I will show that PP topicalization, as opposed to NP topicalization, has the basic properties of scrambling. I will argue on the basis of this fact that topicalization by scrambling should be possible, and hence, that topic in Japanese can be base-generated in the sentence-initial position as suggested in Kuno (1973a) but

can also be moved to that position as proposed in Kuroda (1965b).

Throughout this thesis, I will examine the interaction of scrambling with the principles of Universal Grammar. It will be shown that given the hypothesis that scrambling is an S-structure adjunction operation, the properties of scrambling follow for the most part from those principles and the basic language-particular properties of Japanese. This result supports not only our hypothesis on scrambling but also those principles that are assumed to derive the properties of scrambling. Aside from this conclusion, as mentioned above, the examination of scrambling in this thesis leads us to solutions to some traditional problems in Japanese grammar, e.g., whether scrambling is clause-bound, why scrambling is constrained by Subjacency, and whether topicalization involves movement.

Footnotes Chapter 1

1. Or alternatively, through the rule Affect-alpha, which states "Do anything to anything."

2. Among the works arguing for the configurational analysis of Japanese that are discussed here are Kuroda (1980, 1983), Whitman (1982), Saito (1983a).

Chapter 2

On the Problem of Configurationality

Since Hale (1980) and Farmer (1980), Japanese has often been cited as a typical example of a non-configurational language. A number of works have appeared in the last few years on this hypothesis that Japanese is non-configurational. In this chapter, I will discuss some of those works, and examine their implications for the general problem of configurationality. In particular, I will go over some of the proposed arguments against the non-configurational analysis of Japanese, and argue that there is good reason to assume that the so called "free word-order" phenomenon in Japanese is due to a movement rule, which I will, following Ross (1967), refer to as the scrambling rule. The main purpose of this chapter is to lay down the motivation for the investigation in the subsequent chapters, where the scrambling rule is assumed to be an instance of Move-alpha, and its interaction with various principles are examined.

What led to Hale's proposal of the configurationality parameter is his observation that some languages have a particular set of properties not found in English. For example, he notes in Hale (1982) that the following superficial characteristics are often mentioned in close association with the label "non-configurational":

(1)a. "free" word order
   b. the use of discontinuous expressions
   c. free or frequent "pronoun drop"
   d. lack of NP movement transformations
   e. lack of pleonastic NPs (like it, there, il, ...)
   f. use of a rich Case system
   g. complex verb words or verb-cum-AUX systems

English clearly lacks all of these properties. Thus, given that a group of languages have all, or at least some, of these properties, a question naturally arises as to why there are such differences between those languages and the English-type languages, i.e., configurational languages. Hale hypothesizes that those differences between the two types of languages can be attributed, at least in part, to a deeper difference between them. (Cf. Hale, 1982, 1983). What we mean by the configurationality parameter is precisely the statement of this deeper difference at the appropriate level of abstraction.

It is not the purpose of this chapter to discuss Hale's dichotomy of language into the two groups, configurational

and non-configurational. Whether this dichotomy can be maintained remains to be seen. But, more importantly, a number of interesting works on configurationality have already appeared, and I believe that Hale's research project, which is based on this dichotomy, has already proven to be fruitful. The main concerns of this chapter, instead, are the existent specific proposals concerning the issue of configurationality and the proposed non-configurational analyses of Japanese. More specifically, I will argue that given the kind of data that have been discussed with respect to the configurationality issue for Japanese, there is very little reason to postulate a level of syntactic representation where sentences have "flat structure," and hence, which is immune from the effect of the Projection Principle.

In the following section, I will briefly review the aspects of the non-configurationality hypothesis for Japanese that are relevant for the purpose of this chapter. Since the discussion there will be brief, the reader is refered to such works as Hale (1980, 1982, 1983), Farmer (1980), Whitman (1979), Miyagawa (1980), Kitagawa (1982, 1983), Jelinek (1983) for various proposals concerning the non-configurational analysis of Japanese. In the second section, I will discuss some of the arguments against the

non-configurationality hypothesis for Japanese that have been proposed in the literature, and examine their implications for the models of grammar that have been proposed to accommodate non-configurational languages. Then, in the third section, I will discuss other significant issues that have come up in the last few years in relation to the problem of configurationality.

2.1 The Non-configurationality Hypothesis for Japanese

2.1.1 Free Word-Order and the Lack of VP

What has motivated the non-configurational analysis of Japanese is the fact that word-order is relatively free in this language. For example, (2b)-(2f) are all varients of (2a).

(2)a. John-ga naihu-de Bill-o sasita
-nom knife-with -acc stabbed

(John stabbed Bill with a knife)

b. John-ga Bill-o Naihu-de sasita

c. Naihu-de John-ga Bill-o sasita

d. Naihu-de Bill-o John-ga sasita

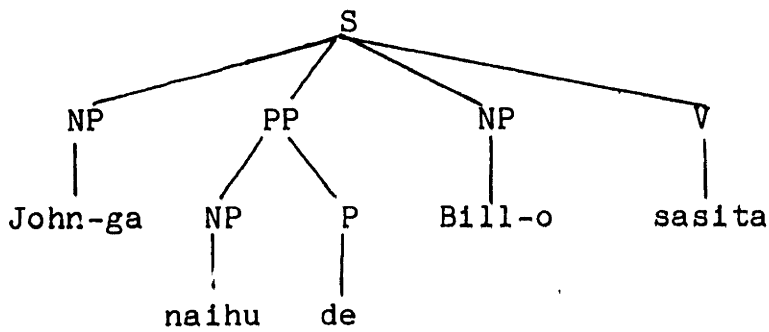
e. Bill-o John-ga naihu-de sasita

f. Bill-o naihu-de John-ga sasita

(Muraki, 1974, p.86)

Another factor that is relevant for the non-configurational analysis of Japanese is the widely accepted hypothesis that this language lacks VP. Hinds (1973) considers possible arguments for establishing a constituent VP in any language, and argues that each argument is either invalid or not applicable to Japanese. He goes on to argue that Japanese lacks VP at both the level of surface structure and the level of semantic representation. It is largely due to this work that it has been widely assumed that Japanese lacks VP and that (2a), for example, has the structure shown in (3).

(3)



The two properties mentioned above, free word-order and the lack of VP, were considered to be independent from each other before the non-configurational analysis was proposed. It was assumed that what is responsible for the relative free word-order is a scrambling rule of the form found in

Ross (1967). (Cf. for example, Muraki, 1974, N. A. McCawley, 1976). Muraki's (1974) formulation of the scrambling rule for Japanese is shown in (4).

(4) Scrambling (Muraki, 1974)

$X_1\ [_S\ X_2\ X_3\ V_1]\ X_4 \dashrightarrow X_1\ [_S\ X_3\ X_2\ V_1]\ X_4$

where: X_2 and X_3 are sequences of constituents which are sisters of V_1

Note: Optional. Cannot apply after gapping.

The exact formulation of the scrambling rule need not concern us here. But the intended effect of this rule should be clear. It is designed to change the order of constituents to account for the free word-order phenomenon.

The non-configurational analysis of Japanese was proposed to account for the free word-order phenomenon without appealing to a scrambling rule. Hale (1980) and Farmer (1980) propose to directly generate all of the sentences in (2) by means of a phrase structure rule of the following form:

(5) $\overline{X} \dashrightarrow \overline{X}^*\ X$

(5) is a phrase structure rule schema that expresses the fact that Japanese is head-final. 'X' stands for any syntactic category, and 'X^*' means any number of Xs. Some of

the instantiations of (5) are shown in (6).

(6)a. $\bar{V}$(=S) --→ $\bar{N}$(=NP) $\bar{P}$(=PP) $\bar{N}$(=NP) V

b. $\bar{V}$ --→ $\bar{P}$ $\bar{N}$ $\bar{N}$ V

c. $\bar{V}$ --→ $\bar{N}$ $\bar{N}$ $\bar{P}$ V

(2a) and (2f) can be base-generated through (6a), (2c) and (2d) through (6b), and (2b) and (2e) through (6c).

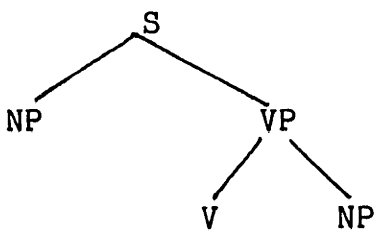
It is important to note that under the assumption that basic word-order is determined by phrase structure rules, the non-configurational analysis of Japanese is a direct consequence of the hypothesis that this language lacks VP. English has strict S(ubject) V(erb) O(bject) word-order. This follows if we assume that English sentences are generated by phrase structure rules of the following form:[1]

(7)a. S --→ NP VP

b. VP --→ V NP

The rules in (7) generate the following tree:

(8)



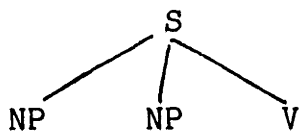
If we take the NP that is hierarchically closer to the verb to be the object, then the NP following the verb must be the object and the one preceding the verb must be the subject. Thus, the rules in (7) give us the SVO order.

On the other hand, if a language lacks VP, it is impossible to fix the order of the subject and the object in this way. Suppose Japanese sentences are generated by a phrase structure rule of the following form:

(9) S --> NP NP V

This rule generates the tree in (10).

(10)



The criterion used to decide which of the two NPs is the object in (8) does not provide us with an answer in the case of (10). For (8), we have taken the NP hierarchically closer to the verb, i.e., the NP following the verb, to be the object. But in (10), neither of the two NPs is hierarchically closer to the verb than the other. Hence, we can conclude that either of the two NPs can be the object. If we take the first NP to be the object, then the second is the subject. If the second NP is the object, then the first

NP is the subject.

Thus, once we assume that basic word-order is determined by phrase structure rules, and that Japanese sentences are generated by the phrase structure rule in (9), the free word-order between the subject and the object is already given, and hence, the scrambling rule seems totally redundant.

We have seen above that the non-configurational analysis of Japanese, in particular, its attempt to do away with the scrambling rule, can be viewed as a direct consequence of the hypothesis that Japanese lacks VP. The correlation between the lack of VP and free word-order discussed above can be maintained if it is assumed that the basic word order is determined by phrase structure rules. As Hale (1983, pp. 10-11) notes, it is not clear that this correlation can be maintained under the recent proposals to do away with phrase structure rules themselves (cf. Chomsky, 1981, Stowell, 1981).[2] But the non-configurational analysis can still be viewed as the first serious attempt to relate the free word-order phenomenon to the hypothesis that Japanese lacks VP. This analysis predicts that the free word-order obtains only clause-internally. That is, in more traditional terms, under this analysis, we expect scrambling

to be clause-bound. Whether scrambling is clause-bound or not has been controversial. I will come back to this issue in Chapter 3.

2.1.2 Dual Syntactic Representations

The non-configurational analysis of Japanese not only can be viewed as a direct consequence of the hypothesis that this language lacks VP, but also depends crucially on this hypothesis. If Japanese sentences have VP, then this analysis cannot be maintained. On the other hand, it has been pointed out, contrary to Hinds (1973), that Japanese sentences must have VP at some level of representation.

It has been hypothesized that a verb assigns Theta-roles (or semantic roles) to the object and to the subject in different ways. That is, a verb assigns a Theta-role directly to its object, but it assigns a Theta-role to the subject compositionally with its complements. (Cf. Chomsky, 1981). Let us consider the following example:

(11) Mary handed a book to John

The hypothesis is that the direct object a book is assigned the Theta-role, theme, by the verb hand, and the subject Mary is assigned the Theta-role, agent, compositionally by

the VP, hand a book to John. In the terminology of Williams (1981), the object is an internal argument and the subject is an external argument of the verb. A number of arguments for this hypothesis are provided in Marantz (1981a).

This external/internal asymmetry with respect to Theta-role assignment is attributed to the lexical property of verbs. Thus, given a theory like the GB Theory that takes the lexical properties of verbs as basic, and regards phrase structure of sentences to be to a large extent derivative of such properties (cf. Chomsky, 1981 and references cited there), we do not expect that verbs can differ from language to language with respect to the external/internal asymmetry. That is, we expect the external/internal asymmetry with respect to Theta-role assignment to be universal. In particular, we expect that in Japanese also, verbs directly Theta-mark their object, but only indirectly Theta-mark their subject. In fact, it is shown in Hasegawa (1981) that some of Marantz's arguments for the external/internal asymmetry are directly applicable to Japanese. First of all, in Japanese also, we find idioms consisting of a transitive verb and the object, but not those consisting of a transitive verb and the subject. Secondly, the semantic role of the subject often depends on the choice of the object, but the semantic role of the

object is determined only by the lexical property of the verb and independently of the choice of the subject.[3] These facts indicate that Japanese sentences must have VP at the level of representation where Theta-role assignment takes place.[4] But given the Projection Principle, this implies that Japanese sentences must have VP at every syntactic level, that is, not only at LF but also at D-structure and S-structure. The Projection Principle states, informally, that the Theta-marking properties of each lexical item must be represented categorially at each syntactic level: at LF, S-structure and D-structure. This conclusion that Japanese sentences must have VP at every syntactic level seems to be in direct conflict with the non-configurational analysis of Japanese.

One way of resolving this conflict is suggested in Chomsky (1981). He writes,

> ...We may think of D- and S-structure as being pairs (α, β), where α is a formal syntactic structure and β is a representation of associated GFs [grammatical functions]...: For English, β is derived from α by abstraction from order, etc. For Japanese, α is a "flat" structure formed by (1) [i.e., a phrase structure rule of the form $\bar{X}$ --- $\bar{X}^*$ X] and β is essentially the same as the corresponding element in English. (p.132)

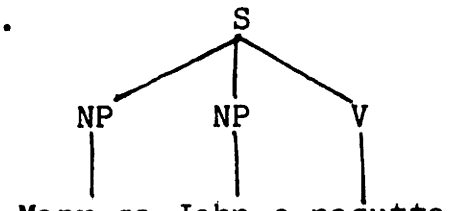
Let us consider the following example in the light of Chomsky's suggestion:[5]

(12) Mary-ga John-o nagutta (koto)
-nom -acc hit fact

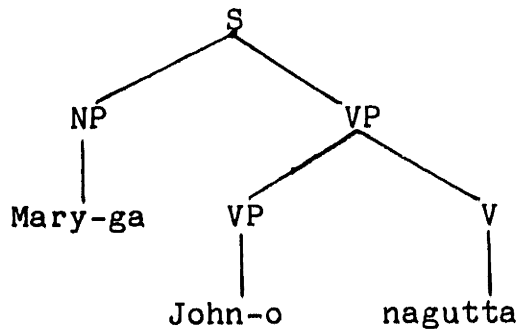
(Mary hit John)

According to Chomsky's suggestion, the sentence in (12) is represented as the pair of (13a) and (13b) both at D-structure and S-structure.

(13)a.



b.



(13a) is what Chomsky calls α, and (13b) is what he calls β. I will refer to the β-representation as the lexical structure and to the α-representation as the constituent structure. Similar ideas of dual syntactic representation are proposed and developed in Marantz (1981a,b), Hasegawa (1981), Hale (1983) and Mohanan (1983).

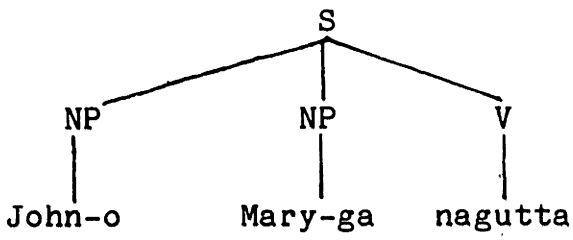
The linear order of constituents is represented in the constituent structure. Thus, the constituent structure of (14), a scrambled version of (12), is distinct from that of (12).

(14) John-o Mary-ga nagutta (koto)
-acc -nom hit fact

(Mary hit John)

The constituent structure of (14) is shown in (15).

(15)



On the other hand, the lexical structure represents only the hierarchical relation among the constituents and is abstracted away from linear order. Thus, the lexical structures of (12) and (14) are identical. The non-configurational analysis of Japanese applies directly to the constituent structure, and the Projection Principle is satisfied trivially by the lexical structure. The mapping between the two structures is assumed to be mediated by such mechanisms as Farmer's (1980) Case linking rules or Hale's (1982) evaluation of argument positions.

2.2 Arguments for a Scrambling Rule

In the preceding section, we have seen how the non-configurational analysis was reconciled with the Projection Principle. Each sentence has dual syntactic representations at both D-structure and S-structure. The non-configurational analysis applies to one of the two representations and the Projection Principle is satisfied by the other. This approach preserves the basic view of the non-configurationality hypothesis that the free word-order phenomenon is not a result of a scrambling rule, or for that matter, any movement rule.

In the last few years, a number of arguments were proposed against the non-configurational analysis of Japanese. Most of these arguments are directed at what we may call the extreme non-configurationality hypothesis, which assumes that Japanese sentences lack VP at every level of syntactic representation. In this section, I will go over some of those arguments and discuss their implications for the problem of configurationality. The proposed arguments against the extreme non-configurationality hypothesis can be divided into two groups: those for VP and those for an

analysis of the free word-order phenomemon in terms of a movement rule. If there is good reason to assume a scrambling rule of some form in Japanese, the motivation for the non-configurational analysis of the free word-order phenomenon is weakened considerably. Thus, I believe that the arguments in the latter group apply not only to the extreme non-configurationality hypothesis, but also to the dual syntactic representation approach outlined in Section 1.2.

In Section 2.1, I will go over some of the arguments against the non-configurational analysis of Japanese.[6] More specifically, I will first discuss the argument based on the facts of pronominal coreference in Japanese in some detail, and then, I will simply repeat Kuroda's (1980, 1983) and Haig's (1980) argument, which is based on the pattern of the interaction between "quantifier floating" and scrambling. In Section 2.2, I will examine in the light of the discussion in Section 2.1 the models of core grammar that have been proposed to accommodate non-configurational languages. There, I will briefly discuss some well known facts of causative constructions in Japanese, and speculate on the nature of dual syntactic representation.

2.2.1 Scrambling as an Instance of Move-alpha

2.2.1.1 Pronominal Coreference

The existence of VP shows up phenomenally in the form of various subject/object asymmetries. One such asymmetry was mentioned above. The object is Theta-marked directly by the verb, whereas the subject is Theta-marked compositionally by the verb and its complements. Another well known subject/object asymmetry in English is found in pronominal coreference. The paradigm is shown in (16).

(16)a. $[_{S}John_{i}\ [_{VP}loves\ [_{NP}his_{i}\ mother]]$

b.*$[_{S}He_{i}\ [_{VP}loves\ [_{NP}John's_{i}\ mother]]]$

c. $[_{S}[_{NP}John's_{i}\ mother\ [_{VP}loves\ him_{i}]]$

d. $[_{S}[_{NP}His_{i}\ mother][_{VP}loves\ John_{i}]]$

This paradigm is straightforwardly accounted for by the following condition of the Binding Theory:[7]

(17) A pronoun cannot c-command its antecedent.

Among the examples in (16), only (16b) violates (17). That is, only in (16b) does a pronoun c-command its antecedent. I will assume, following Chomsky (1981), that (17) applies

at S-structure.

Note that the existence of VP is crucial for (16c). If English lacked VP, then him would c-command John in this example, and hence, the intended coreference should be impossible. This means that (17) makes different predictions depending on whether a language has VP or not. In particular, if Japanese lacks VP at the level of representation relevant for (17), then the counterpart of (16c) in this language should be ungrammatical.[8] But as Whitman (1982) points out, this prediction is not borne out. (Cf. also Huang, 1982, Saito, 1983a.) In fact, he shows that Japanese exhibits exactly the same paradigm as (16) with respect to pronominal coreference. The Japanese paradigm is shown below.

(18)a. John$_i$-ga [$_{NP}$Mary-ga kare$_i$-ni okutta tegami]-o mada
-nom -nom he -to sent letter-acc yet

yonde inai (koto)
read have-not fact

(John has not read the letter Mary sent to him)

b.*Kare$_i$-ga [$_{NP}$Mary-ga John$_i$-ni okutta tegami]-o mada
he -nom -nom -to sent letter-acc yet

yonde inai (koto)
read have-not fact

(*He does not read the letter Mary sent to John)

c. [$_{NP}$John$_i$-kara okane-o moratta hito]-ga kare$_i$-o
-from money-acc received person-nom he -acc

suisensita (koto)
recommended fact

(The person who received money from John
recommended him)

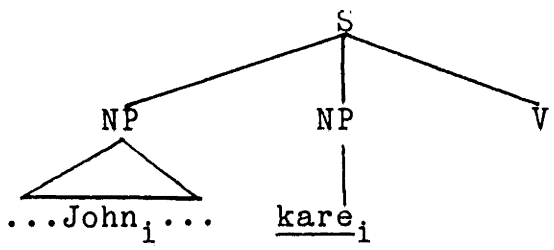
d. [$_{NP}$Kare$_i$-kara okane-o moratta hito]-ga John$_i$-o
he -from money-acc received person-nom -acc

suisensita (koto)
recommended fact

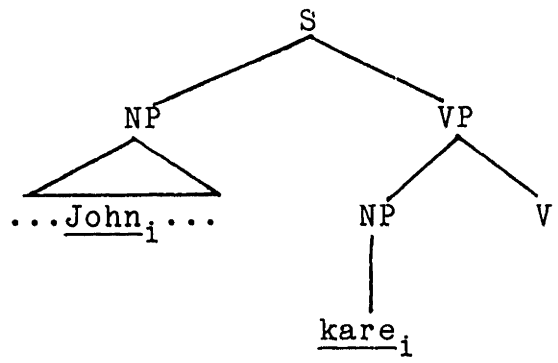
(The person who received money from him
recommended John)

As noted above, the Japanese counterpart of (16c), i.e., (18c), provides us with the crucial case with respect to whether Japanese has VP or not. If Japanese lacks VP at the relevant level of representation, then (18c) has the structure in (19a) at this level, and hence, this example should be ruled out by the condition in (17).

(19)a.



b.



On the other hand, if Japanese has VP, then (18c) has the structure in (19b). Since kare (he) does not c-command John in (19b), we correctly predict that (18c) is grammatical. Thus, as pointed out in Whitman (1982), the grammaticality of (18c) indicates that Japanese does have VP (at the level of representation relevant for the condition in (17)). (Cf. also Saito, 1983a.)

So far, we have seen how the condition in (17) leads us to an argument for VP in Japanese. It is noted in Whitman (1982) and Saito (1983a) that this condition also leads us to an argument for an analysis of the free word-order phenomenon in terms of a movement rule. Let us first consider the following examples:[9]

(20)a.*Kare$_i$-ga [$_{NP}$Mary-ga John$_i$-ni okutta tegami]-o mada
he -nom -nom -to sent letter-acc yet

yonde inai (koto)
read have-not fact (=(18b))

(*He has not read the letter that Mary sent to John)

b. [$_{NP}$Mary-ga John$_i$-ni okutta tegami]-o kare$_i$-ga mada yonde inai (koto)

(The letter that Mary sent to John, he has not read)

An (20a) kare (he) clearly c-commands John, and hence, this example is straightforwardly ruled out by (17). (20b), on the other hand, shows that word-order affects the possibility of coreference. More specifically, it shows that when the object precedes the subject, it is in a position the subject does not c-command. If the subject NP, kare (he) c-commands the object NP and hence John in (20b), then this example should be ruled out by (17) exactly as in the case of (20a). As Whitman (1982) points out, the grammaticality of (20b) follows if we assume that this sentence is derived by a scrambling rule which is exactly like topicalization in English.

In Saito (1983a), it is suggested specifically that scrambling involves adjunction to S. How English topicalization should be analyzed has been controversial. (Cf. Chomsky, 1981, Baltin, 1982a and references cited there.) But if we adopt the analysis in Baltin (1982a), where it is argued that topicalization is best analyzed as adjunction to S, then the S-adjunction analysis of

scrambling is in complete agreement with Whitman's (1982) proposal. One of the motivations for this analysis of scrambling lies in the fact that multiple scrambling is possible in Japanese. For example, as shown in (21), the direct object and the indirect object can both precede the subject in this language. (Cf. also (2).)

(21)a. Mary-ga John-ni sono hon-o watasita (koto)
-nom -to that book-acc handed fact

(Mary handed that book to John)

b. Sono hon-o John-ni Mary-ga watasita (koto)

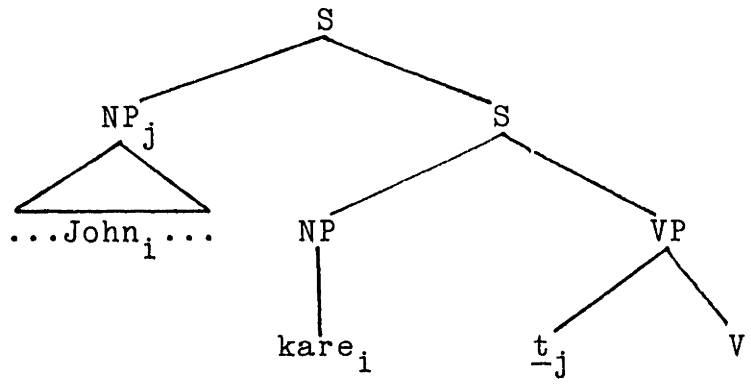
c. John-ni sono hon-o Mary-ga watasita (koto)

The S-adjunction analysis allows a fairly straightforward analysis of (21b)-(21c). Under this hypothesis, the derivations of these examples involve the adjunction of both sono hon-o (that book-acc) and John-ni (John-to) to S. The structure of (21b), for example, will be as in (22).

(22) $[_S$Sono hon-o$_i$ $[_S$John-ni$_j$ $[_S$Mary-ga t_j t_i watasita]]] (koto)

Given the S-adjunction analysis of scrambling, the facts of pronominal coreference in (20) are straightforwardly accounted for. The S-adjunction analysis implies that the structure of (20b) is as in (23).

(23)



In (23), the pronoun kare does not c-command its antecedent John. Thus, (20b) does not violate (17), and hence, we correctly predict that this sentence is grammatical.

We have seen above how the pronominal coreference facts in Japanese lead us to the postulation of a scrambling rule. This rule, needless to say, may be considered as an instance of the general rule, Move-alpha (i.e., move anything anywhere). Before I briefly go over a couple more arguments for the same conclusion, I will discuss a possible objection to the argument presented above. I believe that such discussion is appropriate, since this argument, which has been presented in the most complete form in Whitman (1982), seems to me to be of great theoretical significance.

The argument for a scrambling rule discussed above crucially relies on the condition in (17), which is repeated below as (24).

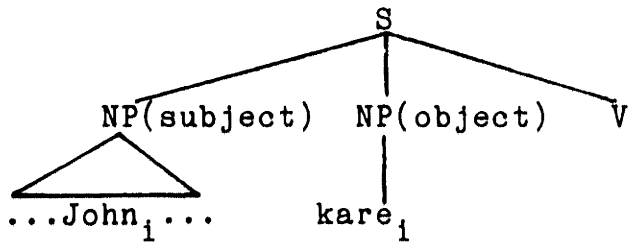
(24) A pronoun cannot c-command its antecedent.

The possible objection that I have in mind has to do with whether (24) is the correct formulation of the relevant condition. More specifically, it has to do with whether we can state this condition solely in terms of the relation, c-command, without refering to linear precedence-relations. Note that in the crucial examples cited above, i.e., in (18c) and (20b), the antecedent John precedes the pronoun kare. Thus, if the correct formulation of the relevant condition is, say, as in (25), then we should expect those examples to be grammatical even if they have "flat structures" at the relevant level of representation.[10]

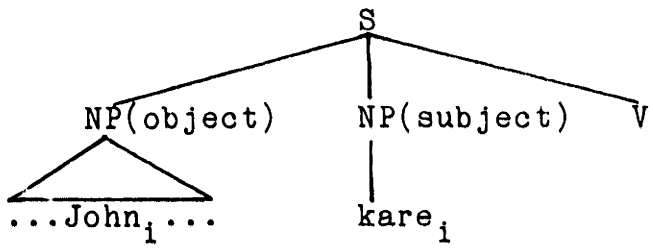
(25) A pronoun cannot precede and c-command its antecedent.

The non-configurational representations of (18c) and (20b) are shown below.

(26)a. (corresponding to (18c))



b. (corresponding to (20b))



It is argued in Reinhart (1976, 1981) that syntactic constraints on anaphoric relations are to be stated solely in terms of c-command. But since this hypothesis is still controversial, the possible objection stated above seems to be a reasonable one.

Here it should be made clear that it is not crucial for our argument that precedence does not play any role at all in the Binding Theory. That is, even if precedence-relations do affect the possibility of pronominal coreference, our argument can be maintained as long as (27) holds.

(27) A pronoun cannot c-command its antecedent even if the latter precedes the former.

If (27) is true, then (18c) does show that Japanese has VP at the relevant level, and (20b) does provide us with evidence that at that level, when the object precedes the subject, it is in a position the subject does not

c-command.

Recently, it has been argued that contrary to Reinhart (1976, 1981), precedence does play some role in Binding Theory. (Cf. for example, Carden, 1981, Kuno, 1983, Carden & Campbell, 1984.) For example, Kuno cites examples such as the following:[11]

(28)a. John showed Mary$_i$ herself$_i$ in the mirror

b.*John showed herself$_i$ Mary$_i$ in the mirror

Whether examples of this kind establish the relevance of the precedence-relation to the Binding Theory or not, it is not clear tnat such data are directly relevant to our argument. On the other hand, as far as I know, no data that clearly contradict (27) have been cited as evidence for the relevance of the precedence-relation. Furthermore, there are some data that seem to support (27). Let us first consider the following Japanese examples:

(29)a. [$_{NP}$kare$_i$-no okaasan-ga genki-datta koro]-no John$_i$
he -gen mother -nom well -was time -gen

(Lit. John of the time when his mother was well = John as he was when his mother was well)

b.?[$_{NP}$kare$_i$-no okaasan-ga genki-datta koro]-no kare$_i$

c.*[$_{NP}$John$_i$-no okaasan-ga genki-datta koro]-no kare$_i$

(29b) is somewhat marginal, probably due to the fact that a pronoun is modified. But it is still far better than (29c). (29c) is completely out despite the fact that the name John precedes the pronoun kare.

Secondly, as Reinhart (1981) points out herself, Malagasy, a VOS language, provides strong support for (27). If (27) is false, that is, if a pronoun can c-command its antecedent as long as it follows its antecedent, then we expect the Malagasy counterpart of '*He loves John's mother' to be grammatical. However, the Malagasy paradigm is identical to the English one. I am indebted to Lisa Travis for the following examples:

(30)a. Nahita ny reniny Rasoa
past-see the mother-her/his

(Rasoa saw her mother)

b.*Nahita ny renin-d Rasoa izy
she/he

(*She saw Rasoa's mother)

c. Nahita azy ny renin-d Rasoa
her/him

(Rasoa's mother saw her)

d. Nahita Rasoa ny reniny

(Her mother saw Rasoa)

(30b) is ungrammatical despite the fact that the pronoun izy

follows its antecedent Rasoa in this example.

The exact implications of the data in (29) and (30) remain to be seen. However, given such data, and the absence of evidence to the contrary, it seems reasonable to assume that (27) indeed does hold. And as stated above, as long as (27) is correct, our argument for a configurational analysis can be maintained.

2.2.1.2 Crossover

Let us now turn to other arguments for a movement analysis of the free word-order phenomenon in Japanese. The second argument also has to do with pronominal coreference, but is independent of the condition in (24). Consider the following examples:

(31)a. John$_i$-no sensei-ga kare$_i$-o (zibun-de) syookaisita
-gen teacher-nom him -acc self-by introduced

(koto)
fact

(John's teacher introduced him (to the audience))

b.??/?*John$_i$-no sensei-o kare$_i$-ga (zibun-de)
-gen teacher-acc he -nom self -by

syookaisita (koto)
introduced fact

(??/?*John's teacher, he introduced (to the audience))

(32)a. John$_i$-no hahaoya-ga kare$_i$-o aisite iru (koto)
-gen mother -nom he -acc love fact

(John's mother loves him)

b.?*John$_i$-no hahaoya-o kare$_i$-ga aisite iru (koto)
-gen mother -acc he -nom love fact

(??/?*John's mother, he loves)

The contrast in (31) and (32) suggests that a subject pronoun cannot take a name contained in the object as its antecedent regardless of the linear order. But we know already that this generalization cannot be maintained as such. As noted above, the examples such as the following (=(20b)) are perfectly grammatical:

(33) [$_{NP}$Mary-ga John$_i$-ni okutta tegami]-o kare$_i$-ga mada yonde
-nom -to sent letter -acc he -nom yet read

inai (koto)
have-not fact

(The letter that Mary sent to John, he has not read)

The correct generalization, instead, seems to be as follows:

(34) When the object precedes the subject, a pronoun in the subject position can take a name contained in the object as its antecedent only if the name is embedded "deeply enough" within the object.

This suggests that (31b) and (32b) are instances of "crossover" in the sense of Postal (1971). It is well known

that when a pronoun c-commands its antecedent at D-structure but this c-command relation does not obtain at S-structure due to movement to an A'-position, the sentence is grammatical only if the antecedent is embedded "deeply enough" in the moved phrase.[12] (Cf. for example, Wasow, 1979, de Fourier, 1980, van Riemsdijk & Williams, 1981 and references cited there.) Thus, there is a clear contrast between (35a) and (35b), which are taken from van Riemsdijk & Williams (1981).

(35)a.*Mary, [John's$_i$ picture of whom]$_j$ he$_i$ likes $\underline{t}_j$

b. [Which picture that John$_i$ saw]$_j$ did he$_i$ like $\underline{t}_j$ best

Whatever the correct explanation of this phenomenon may be, such phenomenon is found only when the phrase containing the antecedent is moved to an A'-position. Thus, the contrast between (31b) and (32b) on the one hand and (33) on the other suggests that when the object appears sentence-initially in Japanese, it is moved to that position.

It should be noted that (31b)-(32b) are better than examples such as those in (36), as indicated by the judgements.

(36)a.*Kare$_i$-ga John$_i$-no sensei-o (zibun-de) syookaisita
he -nom -gen teacher-acc self-by introduced

(koto)
fact

(*He introduced John's teacher (to the audience))

b.*Kare$_i$-ga John$_i$-no hahaoya-o aisite iru (koto)
he -nom -gen mother-acc love fact

(*He loves John's mother)

In addition, we find variation in speakers' judgement with respect to the examples in (31b)-(32b). But these facts do not seem to be problematic. As indicated in the translations of the Japanese examples, in the case of English topicalization also, those sentences that are used as translations of (31b)-(32b) seem better than those that are used as translations of (36a-b). Furthermore, there also seems to be some variation among speakers' judgement on the topicalization sentences corresponding to (31b)-(32b).[13] It should also be mentioned that (31b) and (32b) improve somewhat when strong stress is placed on sensei (teacher) and hahaoya (mother) respectively. This also seems to be the case with their English counterparts.

The argument discussed above is of course not decisive, since how the contrast in (35) should be accounted for is still controversial. But the Japanese data presented above

certainly suggest that scrambling involves movement to an A'-position. Thus, they provide support not only for a movement analysis of the free word-order phenomenon, but also for the hypothesis that scrambling is an adjunction operation.

2.2.1.3 Quantifier Floating

The third argument for a movement analysis of the free word-order phenomenon, which is presented in Kuroda (1980, 1983) and Haig (1980), is based on a certain subject-object asymmetry found in "quantifier floating". It has been noted that a quantifier can "float out of an NP" in Japanese.[14] Thus, the (a) sentence and the (b) sentence are roughly synonymous in (37)-(38).

(37)a. Sannin-no gakusei-ga sake-o nonde iru
3person-gen student-nom sake-acc drinking

(Three students are drinking sake=There are three students drinking sake)

b. Gakusei-ga sannin sake-o nonde iru

(38)a. John-ga sanbon-no sake-o motte kita
-nom 3bottle-gen sake-acc came -with

(John came with three bottles of sake)

b. John-ga sake-o sanbon motte kita

Whether the (b) sentences are actually derived by a

quantifier movement of some sort does not concern us here. What is interesting for our purpose is the fact that an NP and a quantifier cannot be related when another NP argument intervenes between them. That is, in more traditional terms, a quantifier can "float" out of an NP, but not across another NP argument. Thus, the examples in (39) are both ungrammatical.

(39)a.*Gakusei-ga sake-o sannin nonde iru
student-nom sake-acc 3person drinking

(compare with (37b).)

b.*Gakusei-ga hon-o sannin katta
student-nom book-acc 3person bought
(Kuroda, 1983, p.154)

(Three students bought books)

Given this fact, we might expect that it should be impossible to relate a "floating" quantifier with the object NP when the subject NP intervenes between them. However, as Kuroda and Haig point out, this prediction is not borne out. Sentences such as the following are perfectly grammatical:

(40)a. Sake-o John-ga sanbon motte kita
sake-acc -nom 3bottle came-with

(Compare with (38b).)

b. Hon-o gakusei-ga sansatu katta
book-acc student-nom 3book bought
(Kuroda, 1983, p.154)

(The students bought three books)

Noting the facts in (39)-(40), Kuroda and Haig argue that this asymmetry can be straightforwardly accounted for if we assume that the OSV order in Japanese is derived from the SOV order by scrambling. Under our hypothesis that scrambling involves S-adjunction, the structure of (40a), for example, is as follows:

(41) $[_S$Sake-o$_i$ $[_S$John-ga $[_{VP}$ t_i sanbon motte kita]]]

Thus, we can maintain the generalization that a "floating" quantifier cannot be related to an NP across another NP argument, and still account for the grammaticality of (40a). Sanbon (three bottles) in (41) cannot be directly related to sake-o (sake-acc), but it can be related to the trace of this NP and hence, can be related to this NP indirectly.

Given that the "quantifier floating" phenomenon is not completely understood, Kuroda's and Haig's argument is of course not decisive.[15] But the point of the argument should be clear. Kuroda (1983, pp.153-154) writes,

> Word order is quite free in Japanese. This is obvious. But to transform this trivial observation of a phenomenon into a grammatical principle is another matter. There are good indications that the linear order of certain constituents is grammatically relevant, if one pays attention to the interaction between so-called word order and certain other grammatical phenomenon.

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2.2.2 Implications for the Models of Core Grammar

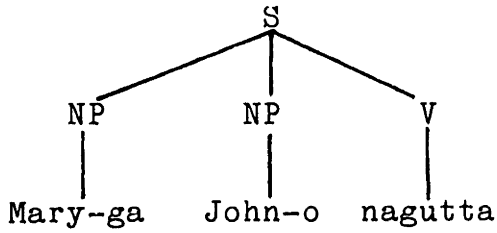
In Section 1.2, I briefly mentioned Chomsky's (1981) suggestion to consider the D-structure and the S-structure of a sentence as pairs of representations. According to this suggestion, (42), for example, has the S-structure

representations in (43a) and (43b).

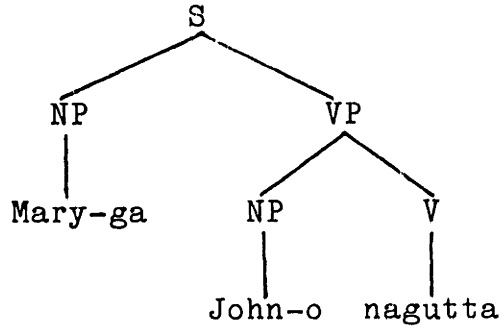
(42) Mary-ga John-o nagutta (koto)
-nom -acc hit fact

(Mary hit John)

(43)a. Constituent Structure



b. Lexical Structure

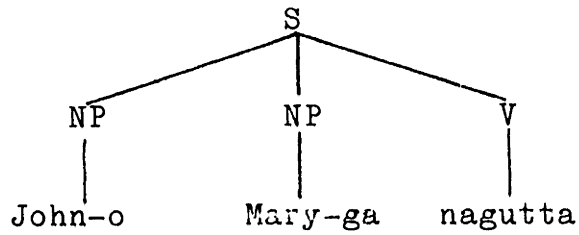


The non-configurational analysis applies to the constituent structure. Thus, (44) has the same lexical structure as (42), but has the constituent structure in (45).

(44) John-o Mary-ga nagutta (koto)
-acc -nom hit fact

(Mary hit John)

(45)



It should be clear that the discussion in the preceding section can be taken as arguments against not only the extreme non-configurationality hypothesis, which assumes that Japanese sentences lack VP at every syntactic level, but also against Chomsky's suggestion. The arguments from the "crossover" facts and the "quantifier floating" facts indicate that the OSV order in Japanese is derived from the SOV order through the movement of the object. Hence, they suggest that the constituent structure is redundant, since this structure was postulated to account for the free word-order facts without appealing to a movement rule. If (44) is derived from (42) by movement anyway, then we might as well assume that Japanese sentences have a single S-structure representation in which the linear order of constituents and their hierarchical relations are simultaneously represented.

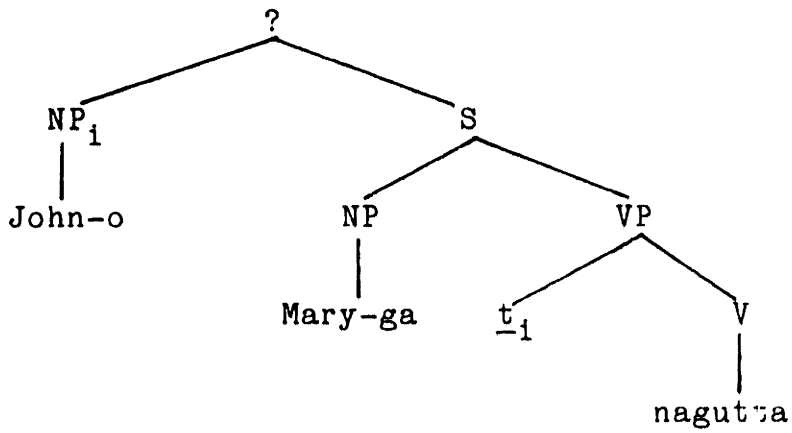
The argument from the pronominal coreference facts points to the same conclusion. We have seen above that Japanese sentences must have VP at the level of representation where

the following condition applies:

(46) A pronoun cannot c-command its antecedent.

Under Chomsky's suggestion, this implies that the condition in (46) applies at the level of lexical structure. And we have also seen that when the object preceded the subject in a sentence, the sentence must have a structure in which the subject does not c-command the object at the level where (46) applies. This implies that the lexical structure of (44), for example, must be as follows:[16]

(47)

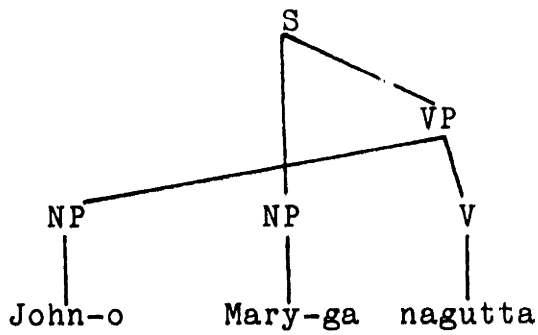


But this means that not only the hierarchical relations among the constituents but also their precedence relations can be represented in the lexical structure. Thus, it seems that the constituent structure is totally redundant as a level to represent the linear precedence relation among the constituents.

From the viewpoint of comparative syntax, the core of Chomsky's (1981) suggestion, as well as that of Hale's (1983) proposal, is the idea that the difference between configurational and non-configurational languages lies in the relation of the lexical structure and the constituent structure. For English, the lexical structure of a sentence can be obtained from its constituent structure simply by abstracting away from linear precedence relations. For languages like Japanese, the relation between the lexical and the constituent structures is a little more complex.

Suggestions have been made to provide formal foundations for this idea. For example it is suggested in Zubizarreta & Vergnaud (1982), Higginbotham (1983b) that the lexical structure (or its equivalent) of (44) is as follows:

(48)



As it should be clear from the representation in (48), the linear precedence relation is brought back into the level of lexical structure. The basic idea is that Japanese allows

the OSV order because VP need not be continuous in this language. This idea is quite attractive since the degree of freedom in word-order in a language can be directly expressed once we specify which categories can be discontinuous in that language. (E.g., NPs can be discontinuous in Warlpiri but not in Japanese.)

I will not discuss these suggestions in detail here. But it should be clear that the discussion in the preceding section presents difficulty to this analysis of Japanese word-order as well.[17] To repeat, the following is the conclusion we drew from the discussion in the preceding section:

(49)a. The OSV order in Japanese derives from the SOV order by movement of the object.

b. When the object precedes the subject, it is in a position the subject does not c-command at the level relevant for (46).

If the OSV order is possible in Japanese because VP need not be continuous in this language, we do not expect either of the conclusions in (49). Note also that the pronominal coreference facts discussed above constitute evidence against the view that scrambling is a stylistic rule applying in the PF component, if it is indeed the case, as I have been assuming, that (46) applies at S-structure. We

will see more evidence that scrambling is an S-structure rule in the subsequent chapters.

Going back to Chomsky's suggestion for dual syntactic representations, we have seen above that the constituent structure seems totally redundant as a level specifically designed to represent the linear precedence relations among the constituents. However, it should be noted that the dual representation hypothesis was proposed not only for the free word-order facts but also for some facts concerning the causative construction in Japanese. It is well known that causative sentences in Japanese with the causative morpheme <u>sase (make, let)</u> are simple sentences at the surface structure level. Examples of the construction are shown in (50).

(50)a. Mary-ga John- ni/o hasir-ase-ta (koto)
-nom - to/acc run-make-past fact

(Mary made John run)

b. Mary-ga John- *ni/o suugaku-o benkyoos-ase-ta
-nom - to/acc mathematics-acc study-make-past

(koto)
fact

(Mary made John study mathematics)

Aside from the obvious fact that sequences such as hasiraseta (made-run) and benkyoosaseta (made-study) are single lexical items, it is known that causative sentences behave as simple sentences with respect to the so called "double-o" constraint. As shown in (50a), the causee in this construction can be marked either by the accusative Case marker o or by the so called dative marker ni. But, as shown in (50b), the causee must be marked by ni when another NP is marked by o.[18] This is assumed to be due to a constraint which states that there cannot be two NPs marked by o in a simple sentence. (Cf. Harada, 1973, Shibatani, 1973, Kuroda, 1978.)[19] It has been argued that the relevant constraint should be stated as a constraint on abstract Case assignment. (Cf. Saito, 1982a, Poser, 1983, Kuroda, 1978.) According to this hypothesis, the constraint will be as in (51).

(51) A verb can assign objective Case to at most one NP.

If this is correct, then a V-sase compound behaves as a single verb at the level relevant for abstract Case assignment.

On the other hand, it has been assumed since the earliest days of the generative study of Japanese, that causative sentences in Japanese have complex structures at some level

of representation. (Cf. Kuroda, 1965a, Inoue, 1969.) At this level, the structure of (52) is as in (53).[20]

(52) Mary-ga John-ni Bill-o hihans-ase-ta (koto)
-nom -to -acc criticize-make-past fact

(Mary made John criticize Bill)

(53) $[_S$Mary-ga John$_i$-ni $[_{S'}$PRO$_i$ Bill-o hihans]-ase-ta] (koto)

Such complex structure is required for the purpose of Binding Theory. Let us, for example, consider the following condition:

(54) A pronominal is free in its governing category.
(Chomsky, 1981, p.188)

Among the data accounted for by this condition are those in (55).

(55)a.*John$_i$ criticized him$_i$

b. John$_i$ thinks that Mary saw him$_i$

A pronoun in the object position cannot be coreferential with the subject of its clause. But a pronoun in the embedded object position can be coreferential with the matrix subject. The same facts, not surprisingly, hold in Japanese as well, as shown below.

(56)a.*John$_i$-ga kare$_i$-o hihansita (koto)
-nom he -acc criticized fact

(*John criticized him)

b. John$_i$-ga Mary-ga kare$_i$-o mita to omotte iru (koto)
-nom -nom he -acc saw COMP think fact

(John thinks that Mary saw him)

As shown in Oshima (1979), causative sentences behave as complex sentences with respect to the facts discussed above.[21] Thus, in the following sentence, the object pronoun can be coreferential with the subject:

(57) Mary$_i$-ga John-ni kanozyo$_i$-o hihans-ase-ta (koto)
-nom -to she -acc criticize-make-past fact

(Mary made John criticize her)

(57) shows that causative sentences must have complex structures at the level (54) applies, for otherwise, this sentence will be ruled out exactly like (56a). Thus, causative sentences in Japanese must have simple structures for the purpose of Case Theory, but they must have complex structures for the purpose of Binding Theory. These facts naturally lead us to the hypothesis that those sentences do nave dual syntactic representations. This point is discussed in detail in Marantz (1981a).[22]

2.2.2.1 Quantifier Floating

The third argument for a movement analysis of the free word-order phenomenon, which is presented in Kuroda (1980, 1983) and Haig (1980), is based on a certain subject-object asymmetry found in "quantifier floating". It has been noted that a quantifier can "float out of an NP" in Japanese.[23] Thus, the (a) sentence and the (b) sentence are roughly synonymous in (37)-(38).

(37)a. Sannin-no gakusei-ga sake-o nonde iru
3person-gen student-nom sake-acc drinking

(Three students are drinking sake=There are three students drinking sake)

b. Gakusei-ga sannin sake-o nonde iru

(38)a. John-ga sanbon-no sake-o motte kita
-nom 3bottle-gen sake-acc came -with

(John came with three bottles of sake)

b. John-ga sake-o sanbon motte kita

Whether the (b) sentences are actually derived by a quantifier movement of some sort does not concern us here. What is interesting for our purpose is the fact that an NP and a quantifier cannot be related when another NP argument intervenes between them. That is, in more traditional terms, a quantifier can "float" out of an NP, but not across

another NP argument. Thus, the examples in (39) are both ungrammatical.

(39)a.*Gakusei-ga sake-o sannin nonde iru
student-nom sake-acc 3person drinking

(compare with (37b).)

b.*Gakusei-ga hon-o sannin katta
student-nom book-acc 3person bought
(Kuroda, 1983, p.154)

(Three students bought books)

Given this fact, we might expect that it should be impossible to relate a "floating" quantifier with the object NP when the subject NP intervenes between them. However, as Kuroda and Haig point out, this prediction is not borne out. Sentences such as the following are perfectly grammatical:

(40)a. Sake-o John-ga sanbon motte kita
sake-acc -nom 3bottle came-with

(Compare with (38b).)

b. Hon-o gakusei-ga sansatu katta
book-acc student-nom 3book bought
(Kuroda, 1983, p.154)

(The students bought three books)

Noting the facts in (39)-(40), Kuroda and Haig argue that this asymmetry can be straightforwardly accounted for if we assume that the OSV order in Japanese is derived from the

SOV order by scrambling. Under our hypothesis that scrambling involves S-adjunction, the structure of (40a), for example, is as follows:

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Thus, we can maintain the generalization that a "floating" quantifier cannot be related to an NP across another NP argument, and still account for the grammaticality of (40a). Sanbon (three bottles) in (41) cannot be directly related to sake-o (sake-acc), but it can be related to the trace of this NP and hence, can be related to this NP indirectly.

Given that the "quantifier floating" phenomenon is not completely understood, Kuroda's and Haig's argument is of course not decisive.[24] But the point of the argument should be clear. Kuroda (1983, pp.153-154) writes,

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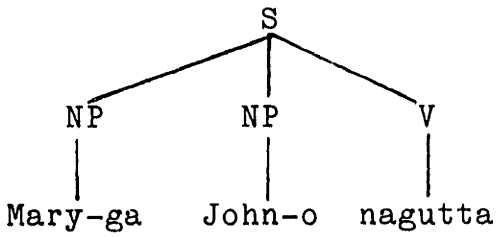
(43)a. Constituent Structure



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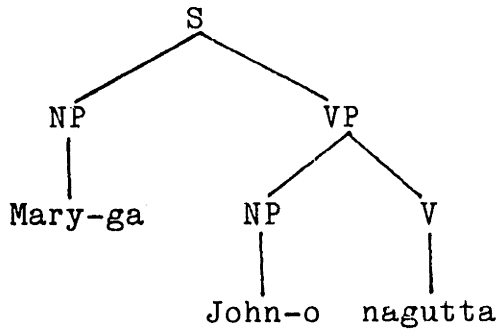

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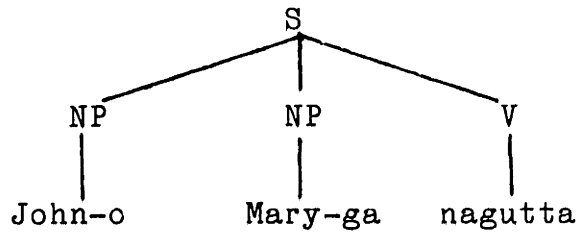

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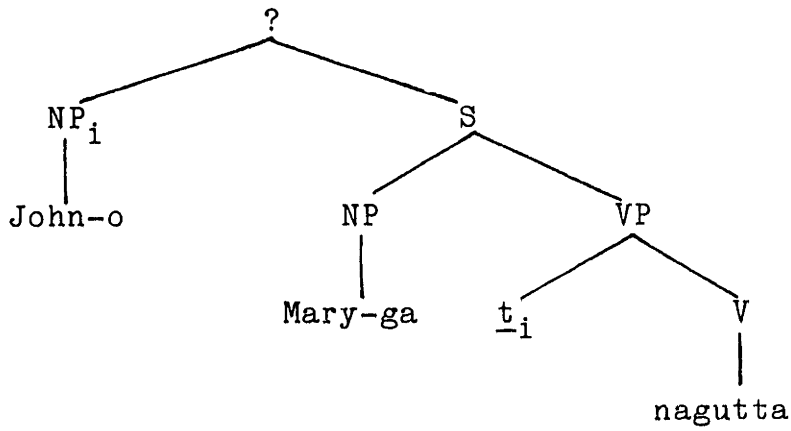

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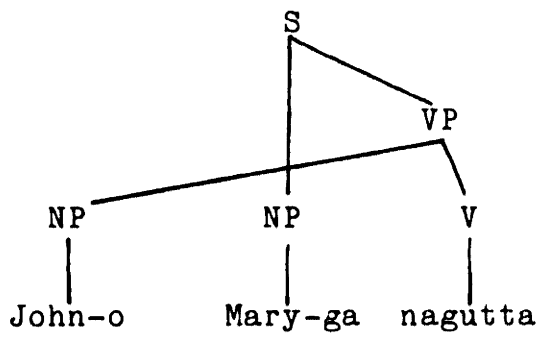

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If the OSV order is possible in Japanese because VP need not be continuous in this language, we do not expect either of the conclusions in (49). Note also that the pronominal coreference facts discussed above constitute evidence against the view that scrambling is a stylistic rule applying in the PF component, if it is indeed the case, as I have been assuming, that (46) applies at S-structure. We will see more evidence that scrambling is an S-structure rule in the subsequent chapters.

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(50)a. Mary-ga John- ni hasir-ase-ta (koto)
o
-nom - to run-make-past fact
acc

(Mary made John run)

b. Mary-ga John- ni suugaku-o benkyoos-ase-ta
*o
-nom - to mathematics-acc study-make-past
acc

(koto)
fact

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Aside from the obvious fact that sequences such as hasiraseta (made-run) and benkyoosaseta (made-study) are single lexical items, it is known that causative sentences behave as simple sentences with respect to the so called "double-o" constraint. As shown in (50a), the causee in this construction can be marked either by the accusative Case marker o or by the so called dative marker ni. But, as

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(51) A verb can assign objective Case to at most one NP.

If this is correct, then a V-sase compound behaves as a single verb at the level relevant for abstract Case assignment.

On the other hand, it has been assumed since the earliest days of the generative study of Japanese, that causative sentences in Japanese have complex structures at some level of representation. (Cf. Kuroda, 1965a, Inoue, 1969.) At this level, the structure of (52) is as in (53).[29]

(52) Mary-ga John-ni Bill-o hihans-ase-ta (koto)
-nom -to -acc criticize-make-past fact

(Mary made John criticize Bill)

(53) $[_S$Mary-ga John$_i$-ni $[_{S'}$PRO$_i$ Bill-o hihans]-ase-ta] (koto)

Such complex structure is required for the purpose of Binding Theory. Let us, for example, consider the following condition:

(54) A pronominal is free in its governing category.
(Chomsky, 1981, p.188)

Among the data accounted for by this condition are those in (55).

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b. John$_i$ thinks that Mary saw him$_i$

A pronoun in the object position cannot be coreferential with the subject of its clause. But a pronoun in the embedded object position can be coreferential with the matrix subject. The same facts, not surprisingly, hold in Japanese as well, as shown below.

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(*John criticized him)

b. John$_i$-ga Mary-ga kare$_i$-o mita to omotte iru (koto)
-nom -nom he -acc saw COMP think fact

(John thinks that Mary saw him)

As shown in Oshima (1979), causative sentences behave as complex sentences with respect to the facts discussed

above.[30] Thus, in the following sentence, the object pronoun can be coreferential with the subject:

(57) Mary$_i$-ga John-ni kanozyo$_i$-o hihans-ase-ta (koto)
-nom -to she -acc criticize-make-past fact
(Mary made John criticize her)

(57) shows that causative sentences must have complex structures at the level (54) applies, for otherwise, this sentence will be ruled out exactly like (56a). Thus, causative sentences in Japanese must have simple structures for the purpose of Case Theory, but they must have complex structures for the purpose of Binding Theory. These facts naturally lead us to the hypothesis that those sentences do have dual syntactic representations. This point is discussed in detail in Marantz (1981a).[31]

Chomsky's (1981) dual representation hypothesis, as well as the proposal in Zubizarreta & Vergnaud (1982), was also designed to capture this property of causative constructions. Causative sentences in Japanese have simple constituent structures but have complex lexical structures.[32]

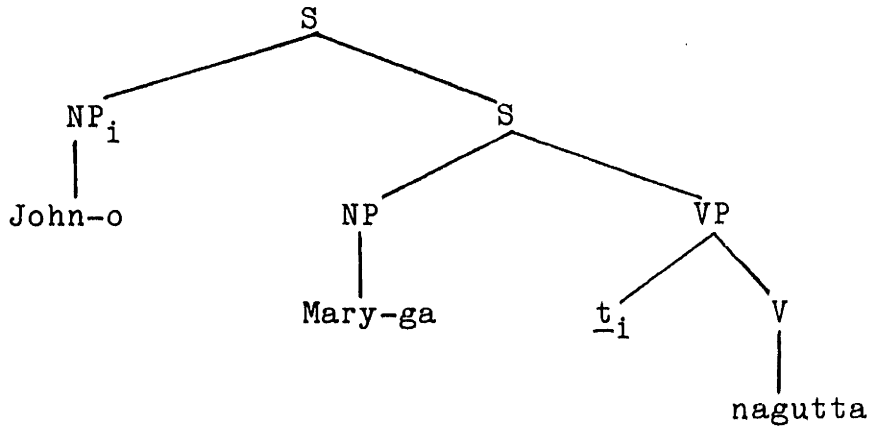
The discussion in the preceding section does not have anything to do with this motivation for parallel

representations. Thus, I will assume that Japanese sentences do have dual representations at D-structure and S-structure. But now, the dual representation hypothesis is motivated solely on the basis of the causative construction, and does not have much to do with the free word-order phenomenon. Thus, there does not seem to be any reason to assume that the constituent structures of Japanese sentences lack VP and that the two representations are radically different. Since the discussion so far suggests that the dual representation hypothesis becomes relevant only in the case of causative constructions, and that the only important distinction between the two representations is that causative sentences have simple structures in one and complex structures in the other, I will assume that the constituent structure and the lexical structure of a sentence differ only in the case of causative (and other similar) constructions. Given our hypothesis that scrambling involves S-adjunction, this assumption implies that (59) is both the constituent structure and the lexical structure of (58).

(58) John-o Mary-ga nagutta (koto)
-acc -nom hit fact

(Mary hit John)

(59)

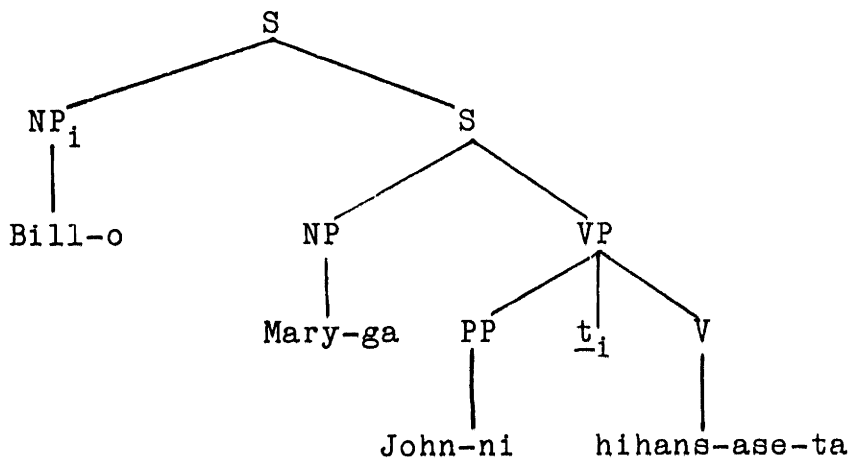


The constituent structure and the lexical structure of the causative sentence (60) are shown in (61a) and (61b) respectively.[33,34]

(60) Bill-o Mary-ga John-ni hihans-ase-ta (koto)
-acc -nom -to criticize-make-past fact

(Mary made John criticize Bill)

(61)a.



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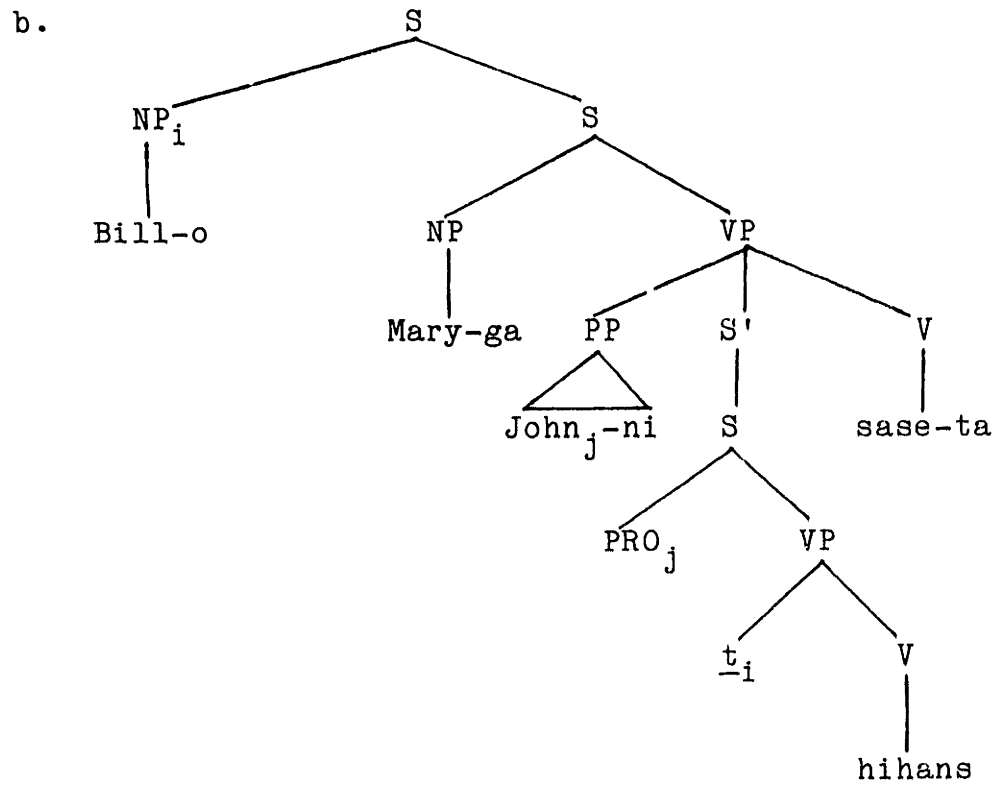


2.3 Some Related Issues

In Section 2, I discussed some arguments against the non-configurational analysis of Japanese and for an analysis of the free word-order phenomenon in this language in terms of movement. In particular, I suggested that scrambling takes place in the mapping between D-structure and S-structure, and that it involves adjunction to S.[35] In this section, I will discuss some facts which may be taken as

evidence for the non-configurationality hypothesis, and argue that they can be considered at least equally well as evidence for a configurational analysis. In Section 3.1, I will discuss the apparent lack of weak crossover effects with scrambling. There, I will argue that scrambling does exhibit weak crossover effects, and that when it does not, there is good reason that it does not. The discussion in 3.1, which is basically a summary and extension of some parts of Saito & Hoji (1983), provides us with further evidence for the movement analysis of the free word-order phenomenon in Japanese. In Section 3.2, I will discuss the fact that scrambling does not allow resumptive pronouns. I will argue that this is expected under our hypothesis that scrambling involves adjunction.

As noted above, once we assume a scrambling rule, there does not seem to be any reason to postulate a level of representation that is immune to the Projection Principle in order to account for the free word-order facts. Given that the Projection Principle is such a fundamental principle in the theory, this is probably one of the most desirable consequences of our scrambling analysis of the free word-order phenomenon in Japanese. However, as pointed out in Hale (1982, 1983), there is a piece of evidence from Navajo that suggests that non-configurational languages have

a level of representation that is not constrained by the Projection Principle. In section 3.3, I will discuss the relevant facts in Navajo, and suggest an alternative solution to the problem raised by those facts.

2.3.1 Weak Crossover Effects with Scrambling

2.3.1.1 An Apparent Problem for the Configurational Analysis

I have hypothesized in the preceding section that scrambling involves S-adjunction, and consequently, that (62), for example, has the structure in (63).

(62) John-o Mary-ga nagutta (koto)
-acc -nom hit fact

(Mary hit John)

(63) $[_S John_i\text{-o} [_S Mary\text{-ga } \underline{t}_i \text{ nagutta}]]$

According to this hypothesis, scrambling is a movement to A'-position, and hence, we should expect it to exhibit strong crossover effects as in the case of wh-movement in English. This prediction is borne out as shown in (64).

(64)a.*$[_S Kare_i\text{-ga } John_i\text{-o}$ syookaisita] (koto)
he -nom -acc introduced fact

(*He introduced John (to the audience))

b.*[$_S$John$_i$-o [$_S$kare$_i$-ga t_i syookaisita]] (koto)

(64a) is, again, straightforwardly ruled out by the condition in (46), which is repeated below as (65).

(65) A pronoun cannot c-command its antecedent.

But in (64b), John is scrambled and adjoined to S. Thus, the pronoun kare does not c-command John in this example. However, kare c-commands the trace of John, and hence, (64b) is ruled out as an instance of strong crossover exactly as in the case (66).[36]

(66) *[$_S$,Who$_i$ [$_S$does he$_i$ love t_i]]

It is known that in addition to strong crossover, wh-movement exhibits weak crossover as well. Compare (67) with (68).

(67) [$_S$,Who$_i$ [$_S$$t_i$ [$_{VP}$loves his$_i$ mother]]]

(68)?*[$_S$,Who$_i$ [$_S$does his$_i$ mother [$_{VP}$love t_i]]]

In (67), the trace of wh-movement c-commands the pronoun his. But in (68), neither the trace nor the pronoun c-commands the other. It is in such an environment that weak crossover effects are found.[37]

If weak crossover, as well as strong crossover, is to be

found with any kind of movement to an A'-position, we should expect scrambling to exhibit weak crossover effects as well, exactly as in the case of wh-movement. However, sentences such as the following are perfectly grammatical:

(69) $[_S John_i$-o $[_S kare_i$-no hahaoya-ga $[_{VP} t_i$ aisite iru]]] (koto)
-acc he -gen mother-nom love fact

(His mother loves John)

(69) suggests that weak crossover effects do not show up in the case of scrambling, and hence, may be considered problematic for the hypothesis that scrambling is an instance of Move-alpha.

A solution to this problem is suggested in Saito & Hoji (1983).[38] Note that one difference between (68) and (69) is that only in the latter, the moved phrase is referential. Thus, if we assume that a referential NP can be the antecedent of a pronoun even when it is in A'-position, the grammaticality of (69) can be accounted for by stating the weak crossover constraint as follows:[39]

(70) A variable cannot be the antecedent of a pronoun that it does not c-command
(Reinhart, 1976. Cf. also Chomsky, 1976.)

In (69), if the pronoun kare takes the variable t as its antecedent, then the constraint in (70) will be violated.

But since the scrambled phrase John(-o) is referential, the pronoun can instead take this phrase as its antecedent. Thus, there is a way for (69) to escape the condition in (70).

What is implicit in this argument is the assumption that a pronoun in English cannot take a quantifier (quantifier or wh-phrase) as its direct antecedent. If his in (68) can take the wh-phrase in COMP as its direct antecedent, then (68) should be able to escape (70) exactly as in the case of (69). The crucial notion here is that of "direct antecedent." What is meant by "X is the direct antecedent of Y" is equivalent to "Y is linked to X" in the sense of Higginbotham (1983a). Compare the following examples:

(71)a. $[_S$,Who$_i$ $[_S$t$_i$ saw his$_i$ mother]]

b.*$[_S$,Who$_i$ [did Mary see his$_i$ mother]]

In (71a), the variable t c-commands his, and thus, can be the antecedent of this pronoun. This variable in turn has the quantifier who as its antecedent. Hence, if we define the relation "antecedent-of" as a transitive relation as in Higginbotham (1983a), then who is an antecedent of his in (71a). However, this relation between who and his in (71a) is established through the mediation of the variable t, and

hence, we may say that who is not the direct antecedent of his in this example. On the other hand, there is no such "mediator" in (71b). Thus, the pronoun his is forced to take the quantifier who as its direct antecedent.

Our assumption that a pronoun in English cannot take a quantifier as its direct antecedent is very similar to one of Higginbotham's (1983a) assumptions on "linking." He assumes that the relation of linking is established by the rule,

(72) Link X to Y

where (72) applies freely between argument positions at S-structure, and automatically in the case of movement rules (p.402). This implies that his cannot be linked to who in (68) and (71b), since the quantifier is not in an argument position. However, Higginbotham's assumptions imply that a pronoun, unless it is a phonetically realized trace, cannot be linked to an A'-position in general. The claim in Saito & Hoji (1983) is that such linking is possible if (and only if) the phrase in A'-position is referential. This hypothesis implies that the pronoun kare can be linked to the scrambled phrase in (69), but his cannot be linked to the wh-operator in COMP in (68) and (71b).[40]

A question may arise with respect to sentences such as the following:

(73) Everyone$_i$ thinks that he$_i$ is a genius

If it is true that a pronoun in English cannot have a quantifier as its direct antecedent, we may expect that (73) should be out since the quantifier everyone is the only possible antecedent of the pronoun in this sentence. However, there seem to be at least a couple of ways out. One is to assume that the relevant constraint on possible antecedents of a pronoun applies only at LF and not at S-structure. In LF, Quantifier Raising (QR, cf. May, 1977) applies, and consequently, the LF representation of (73) is as in (74).

(74) [$_S$Everyone$_i$ [$_S$ t$_i$ thinks that he$_i$ is a genius]]

In (74), the pronoun he can take the variable t as its antecedent, and hence, the quantifier everyone need not be its direct antecedent. Another way to account for the grammaticality of (73), which seems to me to be more promising, is to assume that quantified NPs in A-positions are not quantifiers. That is to say, a quantified NP such as everyone acquires the properties of a quantifier only when it is moved to an A'-position, and when it is in an

A-position, it behaves as a referential NP. If this is the case, then nothing prevents he from taking everyone as its direct antecedent in (73). This approach enables us to preserve Higginbotham's (1983a) assumption that a pronoun can be linked to any phrase in an A-position at S-structure. Furthermore, as we saw above, (73) is not problematic in any sense at LF. Thus, we can assume that a pronoun cannot take a quantifier as its direct antecedent at any level, where by "quantifier," we now mean "quantified NP in A'-position." In (69), the pronoun kare can take the scrambled phrase as its direct antecedent since the scrambled phrase is in an A'-position but is not a quantified NP.

The hypothesis that a pronoun in English cannot have a quantifier as its direct antecedent is closely related also to the discussion of resumptive pronouns in Chao & Sells (1983). They argue that English is not a "true resumptive pronoun language" in the sense that resumptive pronouns in this language cannot be interpreted as bound variables. According to their analysis, the pronouns in the examples in (75) are subject to E-type interpretation in the sense of Evans (1980).

(75)a.[?]This is the man that Mary couldn't remember if she had seen him before

b.[?]Which of the applicants couldn't the secretary remember whether she had scheduled him for an interview

Chao & Sells note contrasts such as the following as part of the evidence for their claim:

(76)a.[?]I'd like to meet the linguist that Mary couldn't remember if she had seen him before

b. *I'd like to meet every linguist that Mary couldn't remember if she had seen him before

(77) *No woman that Bill wonders whether he should date her is really interested in him

As Chao & Sells note, resumptive pronouns are in general only marginally allowed in English. But they point out that in (76b), for example, "the semantics of the NP every linguist requires a bound variable interpretation of the resumptive pronoun, which is not possible; and the sentence is ungrammatical" (p.49).

We can restate Chao & Sells' observation in our terms as follows. In (76a), the relative head the linguist is not a quantifier, and hence, can be the direct antecedent of him. On the other hand, in (76b) and (77), the only possible antecedent for the underlined pronoun is the relative head, which is a quantified NP. If the pronoun does not take the

relative head as its antecedent, then the sentence is ruled out because of vacuous quantification exactly as in the case of (78).

(78) *the man that Mary met Susan

But if the pronoun takes the relative head as its antecedent, then the constraint on possible antecedents of a pronoun is violated.

Whether the position of relative head is an A-position or an A'-position is not clear. If it is an A'-position, as argued in Vergnaud (1974), Barss (1984a), then (76b) and (77) violate the constraint at S-structure. In (76b), for example, every linguist is a quantified NP in A'-position, and hence, cannot be the direct antecedent of the pronoun him. If the position of relative head is an A-position, then there is nothing wrong with (76b) and (77) at S-structure, since we decided that quantified NPs in A-position are not quantifiers. But in LF, the object NP of (76b) and the subject NP of (77) are quantifier raised. The LF representation of (76b) is roughly as follows:

(79) $[_S[_{NP}$every linguist $[_S$, that Mary couldn't remember if she had seen him before$]]_i$ $[_S$I'd like to meet $t_i]]$

Here, the NP, every linguist...before, is adjoined to S, and hence, is in an A'-position. The relative head every linguist is the head of this NP in an A'-position. Thus, it seems reasonable to assume that the relative head is itself in an A'-position at this level. This implies that the relative head cannot be the direct antecedent of him at LF. But again, it is the only possible antecedent for him. Thus, the constraint on possible antecedents of a pronoun is violated at LF. This analysis implies that the wh-phrase in (75b) is interpreted as being referential in some sense with respect to the resumptive pronoun. This is basically equivalent to saying in Chao & Sells' (1983) terms that the wh-phrase in this example somehow can be an antecedent of an E-type pronoun.[41]

Let us now go back to the account of (69) suggested in Saito & Hoji (1983). (69) is repeated below as (80).

(80) $[_S$John$_i$-o $[_S$kare$_i$-no hahaoya-ga $[_{VP}$t$_i$ aisite iru]]] (koto)
-acc he -gen mother -nom love fact

(His mother loves John)

The suggestion was that (80) is exempted from weak crossover because the pronoun kare need not take the variable t as its antecedent in this example. Since the scrambled phrase is referential, and hence not quantificational, it can be the

direct antecedent of the pronoun.

This account of (80) makes a number of predictions. One of them is that not only in Japanese but also in English, even when a structure has the configuration of weak crossover, i.e., the configuration in (81), the weak crossover effects disappear if the pronoun need not take the variable as its antecedent.

(81) [Operator$_i$[. . .pronoun$_i$. . .$\underline{t}_i$. . .]],
where neither the pronoun nor the variable c-commands the other.

As we will see directly, this prediction seems to be borne out by examples such as the following discussed in Chomsky (1982, fn.11):

(82)??[$_{NP}$the man$_i$[$_S$who$_i$[$_S$his$_i$ mother loves $\underline{t}_i$]]]

It is known that the weak crossover effects are much weaker in relative clauses compared to the cases of wh-questions. Thus, (82) contrasts with (83).

(83)?*Who$_i$ does his$_i$ mother love $\underline{t}_i$

Here, recall Chao & Sells' (1983) observation with respect to the examples in (76)-(77). A resumptive pronoun is possible in relative clauses only if the relative head is

not a quantified NP. As noted above, this fact can be accounted for if we assume that resumptive pronouns cannot take a quantifier as their direct antecedent. This account predicts the following contrast:

(84)a.???[$_{NP}$the man$_i$ [$_S$who$_i$ [$_S$his$_i$ mother loves John]]]

b. *[$_S$who$_i$ [$_S$does his$_i$ mother love John]]

(85)a.??[$_{NP}$the man$_i$ [$_S$who$_i$ [$_S$Mary likes his$_i$ mother]]]

b. *[$_S$which man$_i$ [$_S$does Mary like his$_i$ mother]]

(Cf. fn. 31)

In both (84a) and (84b), the wh-phrase cannot be the direct antecedent of his since it is a quantifier. But in (84a), his can take the relative head the man as its antecedent. Thus, (84a), which is itself extremely marginal, is better than (84b).

If this analysis is correct, then we naturally expect the contrast between (82) and (83).[42] In (82), the relative head the man can be the direct antecedent of his. thus, the pronoun need not take the variable as its antecedent. On the other hand, in (83), the wh-phrase who cannot be the direct antecedent of his since it is a quantifier. Consequently, the pronoun is forced to take the variable as its antecedent, and hence, this example violates the weak

crossover constraint in (70). Given this account of the contrast between (82) and (83), we predict that weak crossover effects show up in relative clauses when the relative head is a quantified NP. In such cases, the relative head cannot be the direct antecedent of the pronoun, and consequently, the pronoun must take the variable as its antecedent. This prediction is borne out by the following examples:

(86)a.?*[$_{NP}$every man$_i$ [$_{S'}$who$_i$ [$_S$his$_i$ mother loves $\underline{t}_i$]]]

b.?*[$_{NP}$no one$_i$ [$_{S'}$who$_i$ [$_S$his$_i$ mother loves $\underline{t}_i$]]]

The contrast between wh-question and relative clauses with respect to weak crossover discussed above shows up also in the case of wh-questions and topic sentences. (87a) is even better than (82).

(87)a. John$_i$, his$_i$ mother loves $\underline{t}_i$

b.?*Who$_i$ does his$_i$ mother love $\underline{t}_i$

In (87a) also, the pronoun his can take the topic John as its direct antecedent, and hence, need not take the variable as its antecedent. In fact, (87a) is very similar to the scrambling case. After all, given examples like (87a), it is not surprising at all that there are no weak crossover

effects with scrambling. As we expect, topicalization does exhibit weak crossover when the topicalized phrase is quantificational, as shown below.[43]

(88)?*Everyone$_i$, his$_i$ mother loves t_i

Given our account of (87a), examples such as (89) may be considered problematic.

(89)?*His$_i$ mother loves JOHN$_i$

It is noted in Chomsky (1976) that examples like (89), with stress on John, exhibit weak crossover effects, and that these examples can be accounted for in exactly the same way as examples like (90).

(90)?*His$_i$ mother loves everyone$_i$

Since the quantifier everyone is subject to QR, the LF representation of (90) is as in (91).

(91) [$_S$everyone$_i$ [$_S$his$_i$ mother loves t_i]].

Here, since everyone is a quantified NP in A'-position, the pronoun his must take the variable t as its antecedent, and hence, (91) is ruled out by the weak crossover constraint. This example shows that the weak crossover constraint

applies at least at LF. Similarly, since JOHN in (89) is focused with stress, it seems reasonable to assume that it is subject to QR in LF. If this is the case, then the structure of (89) at LF is identical to (91), as shown below.

(92) $[_S JOHN_i\ [_S his_i$ mother loves $t_i]]$

Here, a question arises as to the difference between (92) and (87a). For (87a), I stated that his can take the topic John as its direct antecedent, and that this is why there are no weak crossover effects. If this is the case, then it may be questioned why his cannot take the focus JOHN as its direct antecedent in (92). HIS in this example should not be able to take JOHN as its direct antecedent since (89) exhibits weak crossover.

Note, however, that (87a) and (92) differ in an important respect. That is, the former is an S-structure representation and the latter is an LF representation. Thus, we do expect the difference between (87a) and (89), given Higginbotham's (1983a) hypothesis that the relations "antecedent-of" and "direct-antecedent-of" are defined between positions rather than between lexical items, and that these relations are defined at S-structure except for

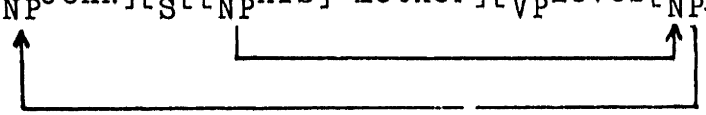
the case of operator-variable relations established by LF movement. Since (87a) is an S-structure, his in this example can take the topic John, or more precisely, the topic position occupied by John, as its direct antecedent. But in the case of (92), since it is an LF representation, we must look at its S-structure representation. According to Higginbotham's hypothesis, S-structure is the level where the antecedent of the pronoun his is determined. In the S-structure of (92), i.e., (89), the only possible antecedent for his is JOHN in the object position, or more precisely, the object position occupied by JOHN. Thus, in Higginbothams terms, the following linking is already established at S-structure:

(93) $[_{NP}[_{NP}$His] mother$][_{VP}$loves $[_{NP}$JOHN]]



In LF, JOHN is moved by QR, but since the direct antecedent of his is already determined at S-structure, the LF representation of (93), including linking, will be as follows:

(94) $[_{S}[_{NP}$JOHN$][_{S}[[_{NP}$his] mother$][_{VP}$loves$[_{NP}$e]]]]



His takes a variable, $[_{NP}$e], as its antecedent, and hence,

(94) violates the weak crossover constraint. Thus, it seems that examples like (89) do not pose a problem to our account, but instead, they provide evidence for Higginbotham's theory of linking. I have so far written informally that a pronoun takes an NP as its antecedent. If we fully adopt Higginbotham's theory, then it is the NP dominating a pronoun that takes an NP as its antecedent, as indicated in (93)-(94). I now state the constraint on possible antecedents of a pronoun more formally as follows:

(95) An NP with the feature [+pronominal] cannot have a quantified NP in A'-position as its direct antecedent.

In the discussion below, I will keep using expressions such as 'this pronoun takes John as its antecedent' informally. But Higginbotham's theory of linking will be assumed.

2.3.1.2 An Argument for the Configurational Analysis

We have seen above that the account of the lack of weak crossover effect with scrambling in Saito & Hoji(1983) is consistent with a number of facts in English. In fact, given the English facts discussed above, it would be surprising if the scrambling examples such as (80) did exhibit weak crossover. Let us now consider the configuration of weak crossover in (81) again. (81) is

repeated below as (96).

(96) [Operator$_i$[. . .pronoun$_i$. . .$\underline{t}_i$. . .]],
where neither the pronoun nor the variable c-commands the other.

Our hypothesis was that in the scrambling examples such as (80), the pronoun need not take the variable as its antecedent, and that this is why they do not exhibit weak crossover effects. Since the scrambled phrase (=the operator) is not a quantified NP in (80), the pronoun can take the scrambled phrase as its direct antecedent. We have seen above that in English also, when the pronoun need not take the variable as its antecedent in a structure satisfying the configuration in (96), the example is much better than a typical case of weak crossover. The account outlined above makes a prediction in the other direction also. That is, we predict that weak crossover effects show up in cases of scrambling, when, for some reason, the pronoun is forced to take the variable as its antecedent in the configuration in (96).

This prediction is difficult to check for an independent reason. The case that immediately comes to mind is the case where the scrambled phrase is a quantified NP. Suppose Japanese is like English with respect to (95). Then, when

scrambling creates the configuration in (96) where the scrambled phrase (the operator) is a quantified NP, the pronoun cannot take the scrambled phrase as its direct antecedent, and hence, is forced to take the variable as its antecedent. Thus, in such cases, we expect scrambling to exhibit weak crossover effects. In fact, examples satisfying the description above are ungrammatical, as shown below.[44]

(97)a.*[$_S$Dare$_i$-o [$_S$kare$_i$-no hahaoya-ga [$_{VP}$t$_i$ aisite iru no]]]
who -acc he -gen mother-nom love

(?*Who does his mother love)

b.*[$_S$Daremo$_i$-o [$_S$kare$_i$-no hahaoya-ga [$_{VP}$t$_i$ aisiteiru]]]
everyone-acc he -gen mother-nom love

(koto)
fact

(?*Everyone, his mother loves)

The examples in (97) contrast sharply with (80), which is repeated below as (98).

(98) [$_S$John$_i$-o [$_S$kare$_i$-no hahaoya-ga [$_{VP}$t$_i$ aisiteiru]]]
-acc he -gen mother-nom love

(koto)
fact

(John, his mother loves)

However, overt pronouns in Japanese are subject to a more general constraint than (95). That is, they cannot take a quantifier not only as a direct antecedent but even as an indirect antecedent. This is shown by the examples in (99).

(99)a.*Dare$_i$-ga [$_S$,kare$_i$-ga Mary-ni kirawarete iru to]
who -nom he -nom -by be-disliked COMP

omoikonde iru no
be-convinced

(Who is convinced that he is disliked by Mary)

b.*Daremo$_i$-ga [$_S$,kare$_i$-ga tensai-da to]
everyone-nom he -nom genius-cop COMP

omoikonde iru (koto)
be-convinced fact

(Everyone is convinced that he is a genius)

(99a) and (99b) become grammatical when we substitute a name, e.g., John, for kare (who) and daremo (everyone) respectively. Note that the examples in (99) are not ruled out by (95). Let us consider (99b). According to (95), kare (he) can take daremo as its direct antecedent at S-structure, since the latter is in an A-position at this level. After QR applies, the LF representation of (99b) is as follows:[45]

(100) $[_S$Daremo$_i[_S$t$_i$-ga$[_S$,kare$_i$-ga tensai-da to] omoikonde iru]] (koto)

(95) does not rule out (100), since kare can take the variable t as its antecedent, and hence, need not take the quantifier as its direct antecedent. Thus, we need an additional constraint of the following form to account for the examples in (99):[46]

(101) In Japanese, an overt NP with the feature [+pronominal] cannot have a quantified NP in A'-position as its antecedent (direct or indirect).

In (100), if kare takes t as its direct antecedent, then it must take daremo as its indirect antecedent, since daremo is the antecedent of t. Thus, (101) rules out (100).

Once we assume the constraint in (101), the examples in (97) are ruled out by this constraint. Let us consider (97a). We noted above that if Japanese obeys the constraint in (95), then kare (he) cannot take dare (who) as its direct antecedent in (97a). Since kare is subject to (101), it cannot take dare as its direct antecedent in any event. Thus, it must take the variable t as its antecedent, and hence, we expect (97a) to be a weak crossover violation. But once kare takes t as its antecedent, it also takes dare as its (indirect) antecedent, since dare is the antecedent

of t and "antecedent-of," as opposed to "direct-antecedent-of," is a transitive relation. Hence, (97a) is ruled out by (101) independently of the weak crossover constraint. Thus, the examples in (97) are consistent with the hypothesis that scrambling exists as an S-structure instance of Move-alpha, but they do not provide us with evidence that scrambling exhibits weak crossover effects.

As we saw above, it seems impossible to construct the exact srambling counterpart of the standard weak crossover example in (102), and examine the hypothesis that scrambling exists as S-structure movement. However, there are at least two sets of weak-crossover data that seem to support this hypothesis. As I noted above, an overt pronoun in Japanese cannot be construed as a variable bound by a quantifier, i.e., an overt pronoun in this language cannot take a quantifier as its antecedent. Thus, the following example is ungrammatical:

(103)*Daremo$_i$-ga [$_S$' kare$_i$-ga Mary-ni kirawarete iru to]
everyone-nom he -nom -by disliked be COMP

omoikonde iru (koto)
be-convinced fact

(Everyone is convinced that he is disliked by Mary)

However, (103) becomes grammatical under the intended reading when either a null pronoun (pro) or zibun-ga (self-nom) is substituted for kare-ga. This means that pro and zibun can be interpreted as bound variables, and hence, we are naturally led to the question of whether it is possible to construct weak crossover examples using these elements.

Let us first consider the case of pro. As shown below, it is possible to construct examples of weak crossover that involve LF movement.[47,48]

(104)a. [$_S$John-wa [$_{PP}$Mary-ga pro$_i$ yomu mae-ni]
-top -nom read before
[$_{VP}$ sono hon$_i$-o yonda]]
that book-acc read
(John read that book before Mary read it)

b.?*[$_S$John-wa [$_{PP}$Mary-ga pro$_i$ yomu mae-ni]
[$_{VP}$dono hon$_i$-o yonda] no]
which book
(Which book did John read before Mary read it)

The contrast in (104) is staightforwardly accounted for by the weak crossover constraint in (70), given the assumption that wh's in situ are moved to COMP by LF wh-movement. At S-structure, the pro in (104b) can take the wh-phrase dono

hon (which book) as its antecedent. But the wh-phrase is moved to COMP in LF. Consequently, at LF, pro takes a variable, i.e., the trace of LF wh-movement, as its antecedent, and in addition, it is not c-commanded by this variable. Hence, (104b) is ruled out by the weak crossover constraint. Weak crossover is irrelevant to (104a), simply because sono hon (that book) is not subject to LF movement. In fact, the examples in (104) are exactly like the English examples in (105), except that the LF movement that produces the configuration of weak crossover is LF wh-movement in the case of (104b) while it is quantifier raising in the case of (105b).

(105)a. His_i mother loves $John_i$

b.?*His_i mother loves $everyone_i$

Note also that (104b) provides us with additional evidence for VP in Japanese. If (104b) lacks VP, then the trace of dono hon (which book) produced by LF wh-movement c-commands pro. But we know independently that there are no weak crossover effects in such cases. For example,

(106)a. $Dare_i$-ga [$_S$, pro_i Mary-ni kirawarete iru to]
who -nom -by be-disliked COMP

omoikonde iru no
be-convinced (Cf. (99a))

b. Everyone$_i$ loves his$_i$ mother

Hajime Hoji (personal communication) reports an extremely interesting fact related to (104b). As shown below, this example becomes grammatical when dono hon-o (which book-acc) is scrambled.

(107) [$_S$Dono hon$_i$-o [$_S$John-wa [$_{PP}$Mary-ga e_i yomu
which book-acc -top -nom read
mae-ni][$_{VP}t_i$ yonda] no]]
before read
(Which book did John read t before Mary read e)

If the empty category e in (107) is pro, then the grammaticality of (107) is unexpected. If Japanese is like English in that a pronoun cannot take a quantifier as its direct antecedent, then e in (107), if it is pro, must take the variable t as its antecedent, and hence, (107) should be a weak crossover violation. However, under the hypothesis that scrambling is movement to an A'-position, e in (107) need not be pro. It can be a parasitic gap.

As discussed in detail in Chomsky (1982), a parasitic gap e is allowed only in the following S-structure configuration (cf. also Taraldsen, 1981, Engdahl, 1983):[49]

(108) [. . .t. . .e. . .](order irrelevant), where:

(i) is an operator that locally A'-binds t and e, and
(ii) neither t nor e c-commands the other.

The following examples show that parasitic gaps are allowed only in this configuration:

(109)a. Which paper$_i$ did you file t_i without reading e_i

b.*John went home without reading e_i

c.*John filed that paper$_i$ without reading e_i

d.*John filed every paper$_i$ without reading e_i

e.*That paper$_i$ was filed t_i without reading e_i

f.*Every paper$_i$ was filed t_i without reading e_i

g.*I can find out [which paper$_i$ John wrote t_i] without reading e_i

h.??Who$_i$ did you speak to t_i because you admire e_i

i.*Who$_i$ t_i spoke to you because you admire e_i

(109b-f) show that parasitic gaps are possible only when there is an operator A-binding a variable. (109g) shows that the operator must c-command not only the variable but also the parasitic gap. And (109i) shows that the variable cannot c-command the parasitic gap. Parasitic gaps cannot be pro simply because they are allowed in English and

English does not have null pronoun.

Given our hypothesis that Japanese has a VP and that scrambling involves adjunction to S, e in (107) satisfies the characterization of a parasitic gap mentioned above. In (107), dono hon-o (which book-acc) is scrambled from the position of t and adjoined to the matrix S. Thus, this phrase is in A'-position and locally binds both e and its own trace t. Since Japanese has VP, neither t nor e c-commands the other. Hence, we expect (107) to be grammatical. On the other hand, the empty category in (104b) cannot be a parasitic gap, since there is no operator that locally binds this empty category. Thus, this empty category must be pro, and hence, (104b) is ruled out by the weak crossover constraint. The fact that the otherwise mysterious contrast between (104b) and (107) is expected under our hypothesis provides us with strong evidence for the configurational analysis. In particular, the lack of weak crossover effects in (107) strongly supports our hypothesis that scrambling exists as S-structure movement to an A'-position.[50]

We have seen above that although it is difficult to construct a clear example of weak crossover using an overt pronoun in Japanese, it is possible to construct relevant

examples with null pronoun. Can we also construct relevant examples with zibun (self)? This case is already discussed in Saito & Hoji (1983). As is well known, the antecedent of zibun is usually restricted to subject NP.[51] However, as noted in Akatsuka (1969), there are cases where the object NP can be the antecedent of zibun. An example is shown in (110).

(110) $[_S[_{NP}$Hanako-ga zibun$_i$-o kiratte iru koto]-ga
-nom self -acc dislike fact -nom
$[_{VP}$Ziro$_i$-o yuuutu-ni site iru]]
-acc depressed make
(The fact that Hanako dislikes him has depressed Ziro)

In (110), neither Ziro nor zibun c-commands the other.

As pointed out in Hoji (1982), (110) becomes marginal when we substitute a quantified NP for Ziro in this sentence. For example,

(111)a.??$[_S[_{NP}$Hanako-ga zibun$_i$-o kiratte iru koto]-ga
$[_{VP}$daremo$_i$-o yuuutu-ni site iru]]
everyone
(?*The fact that Hanako dislikes him has depressed everyone)

b.??[$_S$[$_{NP}$Hanako-ga zibun$_i$-o kiratte iru koto]-ga

[$_{VP}$dare$_i$-o yuuutu-ni site iru]] no
who

(?*Who has the fact that Hanako dislikes him depressed)

As noted in Saito & Hoji, examples such as those in (111) are probably not as bad as the standard weak crossover cases.[52] In addition, those examples are not exactly like the cases of weak crossover discussed above, since zibun (self) is not a pronoun but an anaphor. However, the contrast between (110) and (111) is clear, and further, such contrast obtains only when zibun is not c-commanded by its antecedent. The examples in (112) are both perfectly grammatical.[53]

(112)a. John$_i$-ga [$_S$, zibun$_i$-ga Mary-ni kirawarete iru to]
-nom -nom -by disliked COMP

omoikonde iru (koto)
be-convinced fact

(John is convinced that he is disliked by Mary)

b. Daremo$_i$-ga [$_S$, zibun$_i$-ga Mary-ni kirawarete iru to]
everyone-nom

omoikonde iru (koto)

(Everyone is convinced that he is disliked by Mary)

Thus, it seems reasonable to attribute the contrast between

(110) and (111) to weak crossover.

In the light of the facts with zibun discussed above, the weak crossover constraint in (70) is reformulated in Saito & Hoji as follows:

(113) A variable cannot be the antecedent of a pronoun or an anaphor that it does not c-command.
(p.256)

With this reformulation, the examples in (111) are ruled out as instances of weak crossover. At S-structure, zibun takes daremo (everyone) and dare (who) as its antecedent in (111a) and (111b) respectively. In LF, daremo undergoes QR and dare LF wh-movement. Thus, at LF, zibun takes a variable as its antecedent in both (111a) and (111b). But given that Japanese has VP, the variable does not c-command zibun. Hence, the examples in (111) violate (113) at LF. Note that zibun will be c-commanded by the variable if Japanese lacks VP. Thus, the contrast between (110) and (111) can be considered as evidence for VP in Japanese.

If the contrast between (110) and (111) is indeed to be attributed to weak crossover, as I argued above, then we are led to an interesting prediction. Let us first consider the configuration of weak crossover that we examined prior to the discussion of the cases with zibun. We were unable to

check if scrambling itself is constrained by weak crossover for good reasons. Scrambling can create the following configuration with an overt pronoun:

(114) Scrambled Phrase$_i$[...overt pronoun$_i$...$\underline{t}_i$...], where neither the overt pronoun nor the variable c-commands the other.

But in such cases, it was impossible to check if scrambling exhibits weak crossover. If the scrambled phrase is referential, then it can be the direct antecedent of the pronoun, and hence, the pronoun need not take the varibale as its antecedent. If the scrambled phrase is a quantified NP, then the sentene is ruled out in any event, since an overt pronoun in Japanese cannot be interpreted as a variable bound by a quantifier. We also could create the following configuration, where $\underline{e}$ is intended to be a null pronoun:

(115) Scrambled Phrase$_i$ [...$\underline{e}_i$...$\underline{t}_i$...], where neither $\underline{e}$ nor the variable c-commands the other.

In this case, nothing prevents $\underline{e}$ from being a parasitic gap and not a null pronoun. Thus, sentences with the structure in (115) are grammatical, as we expect, but this of course does not mean that scrambling does not exhibit weak crossover.

However, the situation is a little different when zibun is involved. Let us consider the following configuration:

(116) Scrambled Phrase$_i$[...zibun$_i$...t$_i$...],
where neither zibun nor the variable c-commands the other.

Unlike the case of an overt pronoun, it is not surprising if zibun cannot take the scrambled phrase as its direct antecedent even when the latter is referential. Since zibun is an anaphor, it seems reasonable to assume that it requires an antecedent in A-position. Zibun, not being an empty category, of course cannot be a parasitic gap. Thus, we do expect weak crossover effects in the configuration in (116).

As pointed out in Saito & Hoji (1983), this prediction indeed seems to be borne out. When the object NP Ziro-o in (110) is scrambled to the sentence-initial position, the sentence becomes marginal, as shown below.

(117)a. [$_S$[$_{NP}$Hanako-ga zibun$_i$-o kiratte iru koto]-ga
-nom self -acc dislike fact -nom
[$_{VP}$Ziro$_i$-o yuututu-ni site iru]]
-acc depressed make (=(110))
(The fact that Hanako dislikes him has depressed Jiro)

b.??[$_S$Ziro$_i$-o [$_S$[$_{NP}$Hanako-ga zibun$_i$-o kiratte
iru koto]-ga [$_{VP}$t$_i$ yuututu-ni site iru]]]

In (117b), zibun cannot take Ziro as its direct antecedent since it requires an antecedent in an A-position and Ziro is in an A'-position. Thus, it must take t as its antecedent, and consequently, (113) is violated. If this account of the contrast in (117) is correct, then scrambling does exhibit weak crossover. Thus, again, the weak crossover facts provide support for the hypothesis that scrambling exists as S-structure movement to an A'-position.

In Section 3.1.1, I discussed the lack of weak crossover effects in some scrambling sentences, and argued that the facts are perfectly consistent with our configurational analysis of Japanese sentences. In this section, I discussed the contrast between (104b) and (107), pointed out by Hajime Hoji, and argued that the very fact that scrambling can save a sentence from weak crossover effects provides support for the configurational analysis. Further, I discussed some weak crossover facts with zibun, and argued that they may provide additional support for the configurational analysis. Weak crossover is currently a very active area of research, and the exact implications of the data discussed here of course remain to be seen. Further, there has been very little work done on weak

crossover effects in Japanese. (But cf. Hoji, forthcoming a, b.) Hence, it is not surprising if unexpected data are discovered in the future. But it should be clear from the discussion above that the preliminary weak crossover data are not only consistent with the scrambling analysis of the free word-order facts in Japanese, but they actually provide support for this analysis.

2.3.2 Scrambling and Resumptive Pronouns

The basic motivation for the hypothesis that scrambling is an instance of Move-alpha has been that scrambling shares some properties with topicalization in English.[54] We have already seen that scrambling and topicalization behave alike with respect to pronominal coreference and strong crossover. Furthermore, as we saw in the preceding section, scrambling does not exhibit weak crossover in some cases, and such effects are also very weak, to say the least, in the parallel cases of English topicalization. However, scrambling and topicalization also differ in a number of respects. One of the differences is that the latter, but not the former, allows resumptive pronouns.[55] Compare the following examples:

(118)a. $John_i$, Mary saw him_i

b.*$John_i$-o, Mary-ga $kare_i$-o mita (koto)
-acc -nom he -acc saw fact

The examples in (118) show that there is no counterpart of left-dislocation in the structure of scrambling. If scrambling is to be analyzed exactly like Enlish topicalization, this difference may seem problematic. On the other hand, if one adopts the non-configurational analysis of the free word-order facts in Japanese, examples like (118b) can be straightforwardly ruled out. (118b) is base-generated with a "flat structure," and it is ill-formed simply because this sentence contains two objects when the verb is subcategorized for one. Thus, examples such as (118b) might be taken as evidence for the non-configurational analysis of Japanese. In this section, I will show that examples such as (118b) are indeed expected to be ungrammatical under the movement analysis of the free word-order facts, and that those examples support our hypothesis that scrambling involves adjunction to S.

Before I start discussing examples like (118b), let me make a brief remark on the analysis of topicalization in English. As noted above in Section 2.2, how to analyze this construction has been controversial. According to the

analysis proposed in Chomsky (1977) and refined subsequently in Jaeggli (1980) and Chomsky (1981), topicalization involves movement of an empty operator.[56] The derivation of (119), for example, is roughly as in (120).

(119) That book, I read

(120)a. D-structure

$[_{S''}$That book$[_{S'}, [_{S}$I read Op$]]]$

b. S-structure

$[_{S''}$That book$_i[_{S'}$Op$_i[_{S}$I read $\underline{t}_i]]]$

The topic is base-generated in the sentence-initial position (topic position), and is predicated of the S' through the mediation of the empty operator in COMP at S-structure. This analysis is widely assumed at present at least for topicalization in the matrix clause.

However, it is argued in Baltin (1982a) that topicalization in English is best analyzed as adjunction to S. One of his arguments is that topicalization can apply in an embedded clause, as shown in (121).

(121) It's obvious that Mary, he can't stand (=Baltin's (70))

In (121), the topic Mary appears to the right of the complementizer that, and hence, it seems unlikely that it is

base-generated in the topic position under S".[57] It is not quite clear that Baltin's arguments show that all instances of topicalization necessarily involve adjunction to S. But examples such as (121) certainly suggest that topicalization by S-adjunction is possible in English, and that topicalization in an embedded clause involves adjunction to S.

Let us now go back to the problem of why scrambling does not allow resumptive pronouns. As we saw in the discussion of weak crossover, there is nothing wrong with a scrambled phrase locally binding a pronoun (cf. fn.39). The relevant example (80) is repeated below as (122).

(122) $[_S John_i$-o $[_S ka\cdot e_i$-no hahaoya-ga $[_{VP} t_i$ aisite iru]]] (koto)
-acc he -gen mother -nom love fact

(His mother loves John)

The crucial difference between (122) and (118b) seems to be that in the former, but not in the latter, the scrambled phrase binds a variable. Thus, under the movement analysis of the word-order facts in Japanese, it seems necessary to stipulate a condition of the following form:

(123) An NP in a scrambled position must bind a variable.

John-o in (122) satisfies this condition, since it binds the

varibale $\underline{t}_i$. On the other hand, (118b) is in violation of this condition, since John-o in this example binds only an overt pronoun. Given our assumption that scrambling involves S-adjunction, we can restate (123) more formally as follows:

(124) An NP in an adjoined position must bind a variable.

If (124) must be stipulated only to account for some facts of scrambling, then the difference between topicalization and scrambling in (118) may indeed be considered a problem for the configurational analysis of Japanese. However, if a condition of the form in (124), or a condition that subsumes (124), is needed independently of the scrambling facts, then the data in (118) are not problematic. And in fact, (124), as a descriptive generalization, seems to be true of much wider range of facts than those concerning scrambling.

First of all, recall that one of Baltin's (1982a) arguments for the S-adjunction analysis of topicalization was that topicalization is possible in an embedded clause. As noted above, this fact suggests strongly that embedded topicalization involves adjunction to S. And interestingly enough, Baltin also points out that left-dislocation is impossible in an embedded clause. His example is shown in (125).

(125)a. He's a man to whom liberty$_i$ we could never grant $\underline{t}_i$

b.*He's a man to whom liberty$_i$ we could never grant it$_i$

A few more examples are listed below.[58]

(126)a. John$_i$ Mary likes $\underline{t}_i$

b. John$_i$ Mary likes him$_i$

c.?It is clear that John$_i$ Mary likes $\underline{t}_i$

d.*It is clear that John$_i$ Mary likes him$_i$

(127)a.?John$_i$ Mary likes his$_i$ mother

b.*I believe that John$_i$ Mary likes his$_i$ mother

Embedded topicalization is a marked phenomenon in the first place. But the contrast between (126c) and (126d), for example, is a clear one. The data above indicate that when topicalization clearly involves S-adjunction, it does not allow resumptive pronouns. Thus, the descriptive generalization in (124) seems to be true not only of scrambling but also of English topicalization.

Furthermore, as Rochemont (1984) points out, (124) seems to hold also for heavy NP shift. The relevant contrast is obscured in the matrix clause because of the possibility of right-dislocation.

(128)a. I met $\underline{t}_i$ yesterday [$_{NP}$the man who came to see John from Japan]$_i$

b.?I met him$_i$ yesterday [$_{NP}$the man who came to see John from Japan]$_i$

However, the contrast shows up clearly in embedded clauses, since right-dislocation is possible only in matrix clauses. The following examples are adopted from Rochemont (1984) with slight modifications:

(129)a. John met [$_{NP}$a man that bought $\underline{t}_i$ for his mother <u>that painting by Rembrandt$_i$</u>] in the park.

b.*John met [$_{NP}$a man that bought <u>it$_i$</u> for his mother <u>that painting by Rembrandt$_i$</u>] in the park.

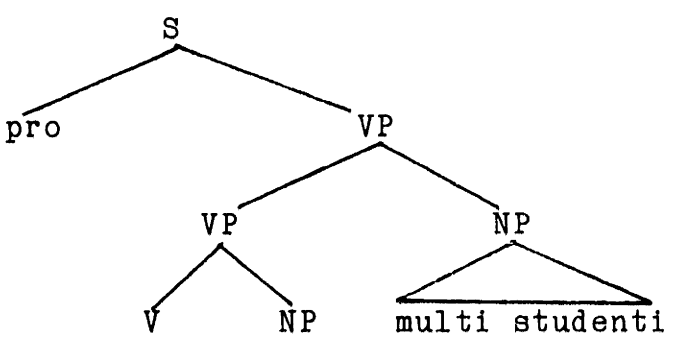
Since it is generally assumed that heavy NP shift involves adjunction (to VP), the examples in (129) also seem to fall under the generalization in (124).

We have seen above that embedded topicalization and heavy NP shift, both of which seem to be adjunction operations, do not allow resumptive pronouns. Given this fact, it is not surprising at all that scrambling also has the same property. In fact, it would be surprising if scrambling did

allow resumptive pronouns. Thus, the difference between matrix topicalization and scrambling in (118) does not seem to be problematic for the configurational analysis of Japanese. Since there are independent reasons to assume scrambling in the first place, the discussion in this section provides support for the more specific proposal that scrambling is an adjunction operation. Given a descriptive generalization like the one in (124), a question naturally arises as to why it is that such a generalization obtains. It should be noted in this connection that there is a notable exception to the generalization in (124). It is widely assumed that the subject NP is adjoined to VP in the postverbal subject construction in some Romance languages. The following Italian example is from Burzio (1981):

(130)a. Hanno fatto domanda molti studenti
have made application many students

b.



The preverbal subject position is occupied by an expletive null pronominal, and the lexical subject appears in a

postverbal position adjoined to VP. However, in this case, the NP adjoined to the VP clearly does not bind a variable.[59] I will come back to this problem, and discuss the descriptive generalization in (124) in more detail in Chapter 4.

2.3.3 The Projection Principle in Non-Configurational Languages

In this section, I will discuss some facts in Navajo, another language which is assumed to be non-configurational. As we saw in Section 1 of this chapter, the current non-configurationality hypothesis postulates dual syntactic representations for a sentence, the constituent structure and the lexical structure. The lexical structure of a sentence has VP and is constrained by the Projection Principle. Again, the Projection Principle states, informally, that the Theta-marking properties of each lexical item must be represented categorially at each syntactic level: at D-structure, S-structure, and LF. In the case of a non-configurational language, the constituent structure of a sentence lacks VP and is not constrained by the Projection Principle. The free word-order fact is accounted for by applying the non-configurational analysis to this representation.

In Section 2 of this chapter, we have seen that there are good reasons to account for the free word-order facts in Japanese by scrambling. This implies that as far as the free word-order facts in Japanese are concerned, the constituent structure is totally redundant and hence, there is no need to postulate a representation which is not constrained by the Projection Principle. As noted in Section 2, this is one of the most desirable consequences of the scrambling analysis, since the Projection Principle is one of the most fundamental principles in the current theory. In fact, given the importance of the Projection Principle, this consequence by itself can be regarded as strong evidence for the scrambling analysis of the free word-order phenomenon. However, Hale (1982, 1983) points out that there are some facts in Navajo that seem to suggest that non-configurational languages indeed have a level of representation which is not constrained by the Projection Principle. In this section, I will first discuss the facts in Navajo and argue that if those facts show that Navajo is non-configurational, then Japanese must be considered configurational in the configurational/non-configurational dichotomy. Then, I will assume that Navajo does not have a level of representation which is free from the effects of the Projection Principle, and suggest an alternative account

of the Navajo facts mentioned in Hale (1982, 1983).[60]

In was noted above that the Projection Principle requries that sentences have VP at every syntactic level. Another effect of this principle is that it determines the distribution of empty categories to a large extent. Let us consider the following example:

(131) That book$_i$, John gave t_i to Mary

The verb give assigns the Theta-role theme to its direct object. The Projection Principle requires that this Theta-marking property of the verb give be represented at every syntactic level. This implies that there must be an empty category in the direct object position of (131) not only at LF but also at S-structure, for otherwise, the verb give cannot assign the direct object Theta-role at these levels. The empty category in the direct object position of (131) can be (and must be) a variable. Let us next consider the following examples:[61]

(132)a.*e think that John will bring e

b. e John-ga e motte kuru to omoimasu
-nom bring COMP think

(I think that John will bring it/them)

The two empty categories in (132a) are required by the

Projection Principle. The verb think, together with its S' complement, assigns a Theta-role to its subject, and the verb bring assigns a Theta-role to its object. The empty categories in (132a) cannot be variables, since variables must be bound. The corresponding Japanese example in (132b) is grammatical, since Japanese, unlike English, has phonetically null pronouns, as mentioned above. That is, the empty categories in (132b) need not be variables but can be null pronuns. In fact, (132b) is interpreted as if there are pronouns in the positions of "missing arguments."

Hale (1982) points out that an extensive usage of null pronouns, or in his terms, "free or frequent 'pronoun drop'," is one of the main characteristics of non-configurational languages. Navajo, which is also considered to be a non-configurational language, seems to have this property like Japanese. Thus, the following Navajo sentences are grammatical:[62]

(133)a. Ashkii yiniłtsą́
boy saw

(You saw the boy)

b. Yiniłtsą́

(You saw him/her/it/them)

Given the Projection Principle, it seems that (133b), for

example, must have the following representation:

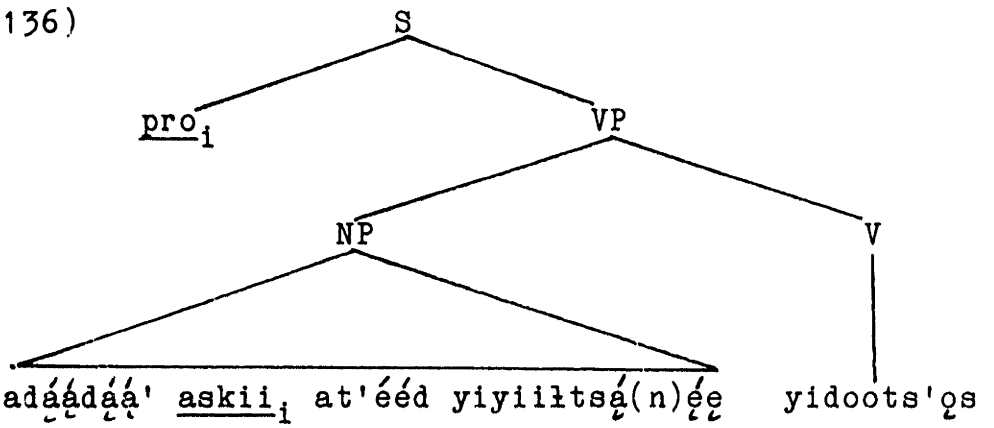
(134) [$_{S}$pro [$_{VP}$pro yiniłtsą́]]

Let us now consider the following example from Platero (1978):

(135) Adą́ą́dą́ą́' ashkii at'ééd yiyiiłtsą́(n)ę́ę yidoots'o̜s
yesterday boy girl saw-REL will kiss
(The boy will kiss the girl he saw yesterday)

The sequence "adą́ą́dą́ą́'...yiyiiłtsą́(n)ę́ę" is a headless relative clause. Platero (pp.166-169) states that (135) can be understood in a way that the relative clause is modifying at'ééd (the girl), the complex relative expression is in the object position of the matrix sentence, and at the same time, the matrix subject is coreferential with the embedded subject ashkii (the boy). Furthermore, in Navajo, the relative order between the subject NP and the object NP is encoded in the verb morphology. Roughly speaking, the third person object prefix (clitic) is yi when the NP that immediately precedes the verb is the object, and it is bi when the NP that immediately precedes the verb is the subject.[63] This implies that if the matrix subject is present in (135), it must precede the object NP. The structure of this sentence will be roughly as follows:

(136)



The subject position in (136) is occupied by a null pronoun coreferential with askii (the boy). But the structure in (136) clearly violates the constraint in (65), which is repeated below as (137).

(137) A pronoun cannot c-command its antecedent.

Thus, as Platero points out, if we assume that there is a null pronoun in the matrix subject position of (135), we wrongly predict that this sentence should be ungrammatical. Platero cites this fact as evidence that when an argument NP is missing in Navajo, it is truly missing in the sense that there is no empty category in its place.[64] If the matrix clause in (135) does not have a subject NP, then (137) is clearly not violated.

Hale (1982, 1983) goes one step further, and suggests that

the Navajo fact discussed above can be taken as evidence that non-configurational languages have a level of representation not constrained by the Projection Principle. The matrix verb in (135) together with its object assigns a Theta-role to the subject. Thus, the Projection Principle requires an empty category in the matrix subject position of (135). But as we saw above, if we assume an empty pronoun in the matrix subject position of (135), then this example should be ungrammatical in the intended reading. Hence, the grammaticality of (135) suggests that Navajo sentences are not constrained by the Projection Principle at the level where (137) applies.

Let us first consider the implication of Hale's argument for Japanese. His conclusion is that sentences in non-configurational languages have representations not constrained by the Projection Principle. Given the current non-configurationality hypothesis, the representation in question must be the constituent structure, since the lexical structure, by definition, obeys the Projection Principle. According to the non-configurationality hypothesis, the constituent structures of sentences in non-configurational languages lack VP, and the free word-order facts are accounted for by virtue of this fact. Thus, the constituent structures in non-configurational

languages are assumed not to obey the Projection Principle. Hale's suggestion was that the Navajo fact is to be considered as evidence that the constituent structures in non-configurational languages are indeed not constrained by the Projection Principle.

But note that Hale's argument also implies that the condition in (137) applies to constituent structures. If (137) applies to lexical structures, then (135) should be out any way, since the lexical structures of Navajo sentences are by definition constrained by the Projection Principle. But as we saw in Section 2 of this chapter, Japanese sentences must have VP at the level where (137) applies. A relevant example, (32a), is repeated below as (138).

(138) $[_{S}\text{John}_{i}$-no hahaoya-ga $[_{VP}\text{kare}_{i}$-o aisite iru]] (koto)
-gen mother -nom he -acc love fact
(John's mother loves him)

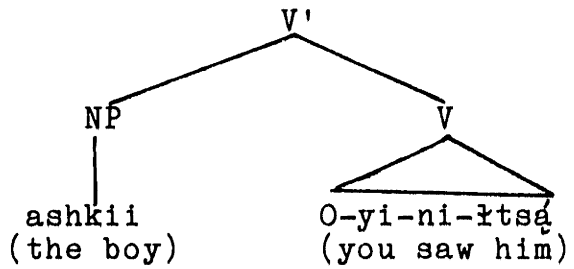
If Japanese sentences do not have VP at the level where (137) applies, then kare (he) in (138) c-commands John at that level and hence, (138) should be out. And as noted above, Hale's argument implies that (137) applies to the constituent structures. Thus, it follows that the constituent structures of Japanese sentences have VP and are

fully configurational. This means, of course, that Japanese must be a configurational language. Thus, if configurational and non-configurational languages are to be distinguished in the way proposed in the current non-configurationality hypothesis, and if the Navajo fact discussed above constitutes evidence for this distinction, as suggested in Hale (1982, 1983), then Japanese must be analyzed as a configurational language.

We have seen above that Hale's argument for the non-configurational analysis of Navajo leads us to the conclusion that Japanese is configurational. Once we reach this conclusion, a question naturally arises as to whether Navajo itself should be analyzed as a non-configurational language. After all, Japanese seems to have the characteristics of a non-configurational language as much as Navajo does. As mentioned above, Japanese uses null pronouns extensively, and the word-order in this language seems to be at least as free as that in Navajo. Thus, if Japanese is configurational, then it seems quite possible that Navajo also should be analyzed as a configurational language. In the remainder of this section, I will assume that Navajo is configurational, and suggest an alternative account of the fact discussed in Platero (1978).

If Platero is correct in that "missing arguments" in Navajo are truly missing, then what have been assumed to be argument NPs in this language cannot be argument NPs. If they are in argument positions and are assigned Theta-roles, directly or compositionally, by the verb, then the Projection Principle requries that they be present at every syntactic level. Thus, Platero's hypothesis implies that they are not assigned Theta-roles by the verb. Then, what receives a Theta-role from the verb in Navajo sentences? The Projection Principle requires that a verb must assign its Theta-roles. As noted in fn.52, Navajo differs from Japanese in that verbs in this language are prefixed by clitics agreeing with "the subject" and "the object." If the "argument NPs" do not receive Theta-roles from the verb, then those clitics are natural candidates for Theta-role assignees. Let us consider, for example, (133a). I will assume, though not crucially, that this sentence has the following structure:[65]

(139)

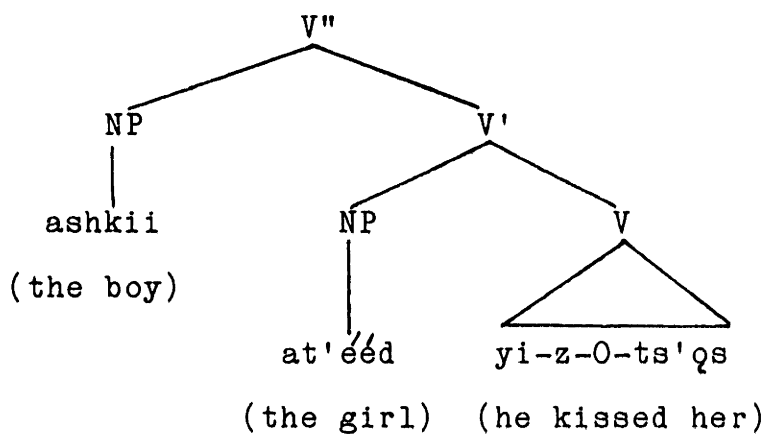


According to our hypothesis, the object clitic O receives

the object Theta-role and the subject clitic ni receives the subject Theta-role.[66] The Projection Principle is trivially satisfied already in the lexicon.

Then, how do the "argument NPs" assume their semantic roles? Or more informally, how are they interpreted? We can assume that they are interpreted by virtue of being associated with the clitics. For example, we may say that they form chains with the clitics, and through these chains, they assume the Theta-roles assigned to the clitics. This hypothesis is illustrated in (140).

(140)



Note that this hypothesis is quite consistent with the fact that Navajo lacks Case inflections. Suppose NPs require Case because of Aoun's (1979) visibility condition on Theta-role assignment, which states roughly that an NP must

be Case-marked in order to be assigned a Theta-role unless it is PRO.[67] According to our hypothesis, "argument NPs" are not assigned Theta-roles, but assume Theta-roles only through chains with clitics. Thus, the visibility condition does not require them to be Case-marked.

The hypothesis stated above, it seems to me, has a number of advantages, as I pointed out in Saito (1983a). This hypothesis, first of all, reconciles Platero's hypothesis with the Projection Principle. When "argument NPs" are missing in Navajo, the Projection Principle does not require empty categories in their places, simply because the positions of "argument NPs" are not positions of Theta-role assignment. Thus, when "argument NPs" are missing, they can be truly missing, as Platero argues. Secondly, our hypothesis preserves a crucial aspect of Hale's (1982) analysis of non-configurational languages. He hypothesizes that argument NPs in non-configurational languages are not assigned Theta-roles as in configurational languages, but are <u>freely evaluated</u> with respect to the predicate-argument structure of the verb. Let us consider the string in (141a), where the verb has the predicate-argument structure in (141b).

(141)a. NP V

b. (x) V
|
theme

Hale's hypothesis is that the NP in (141a) is freely associated with the argument position in (141b), and assumes the Theta-role of x through this association. Our hypothesis is simply that the predicate-argument structure is represented with verb morphology, and the Hale's free evaluation takes place in the syntax. In this respect, our hypothesis is simply a notational varient of Hale's analysis.

And finally, according to our hypothesis, "argument NPs" in Navajo are not directly assigned Theta-roles by the verb, and in this respect, they are non-complements. Thus, we may expect them to behave like adjuncts with respect to some grammatical phenomena. This prediction indeed seems to be borne out. As pointed out by Huang (1982), multiple wh questions are possible in English, but not if both of the wh's are adjuncts (cf. also Bolinger, 1978). Thus, there is a contrast between the examples in (142) and those in (143).

(142)a. Who bought what

b.??Why did you buy what

c.??How did you solve which problem

(143)a.*Why did you buy that book how

b.*How did you solve this problem why

Hence, if "argument NPs" in Navajo are not complements but adjuncts, we may expect that multiple wh questions are impossible in this language. As Ken Hale (personal communication) points out, this indeed is the case, as shown below.

(144)a. Jáan ha'át'íílá nayiisnii'
John what he-bought-it

(What did John buy)

b. Háíłá ashkii yizts'ǫs
who boy she/he kissed him

(Who kissed the boy)

c.*Háíłá ha'át'íílá nayiisnii'
who what she/he bought it

(who bought what)

d.*Háíłá háíłá yizts'ǫs
who who she/he kissed her/him

(Who kissed who)

Thus, "argument NPs" in Navajo seems to behave like adjuncts with respect to wh-questions.[68]

In this section, I have discussed Hale's (1982, 1983) argument, based on Platero's hypothesis on Navajo, that non-configurational languages have a level of representation not constrained by the Projection Principle. I first argued that if Hale's argument is correct, then Japanese should be classified as a configurational language. Then, I went on to argue that Platero's hypothesis is not necessarily in conflict with the Projection Principle. I argued further that the analysis of Navajo we are led to by assuming both Platero's hypothesis and the Projection Principle have some desirable features. The discussion on Navajo in this section has been speculative, and even if the analysis suggested here turns out to be basically correct, still, the details need to be worked out.[69] But I believe that it is now clear that Platero's hypothesis does not necessarily imply that Navajo has a level of representation not constrained by the Projection Principle. As Hale notes, the facts discussed in Platero (1978) are undoubtedly of great theoretical significance. But it seems to me that further research is required to find out what exactly the theoretical implications of the Navajo facts are.

2.4 Conclusion

In this chapter, I have discussed and defended the arguments for Japanese being configurational. More specifically, I discussed facts concerning pronominal coreference, "quantifier floating," weak crossover and resumptive pronouns, and defended the analysis of the free word-order facts in Japanese in terms of scrambling. Each of the topics discussed in this chapter deserves more detailed study, and the consequences of the analyses proposed in this chapter must be examined in more detail. However, I believe that the discussion in the preceding sections has shown convincingly that the configurational analysis of Japanese is worth pursuing, and that it is reasonable to assume scrambling to account for the free word-order facts in this language. In the following chapters, I will assume that scrambling exists as a subcase of Move-alpha, and will examine the properties of scrambling.

The discussion in this chapter was mainly on Japanese, and not directly on language typology. Thus, of course, I have not shown that there are no non-configurational languages in

the sense of Hale (1982, 1983) and Chomsky (1981). It may turn out that Japanese is configurational, but Warlpiri and Navajo, among others, are non-configurational. However, since Japanese seems to have the main superficial characteristics associated with the term "non-configurational," e.g., "free word-order" and "free pronoun-drop," the discussion in this chapter suggests that the account of the configurational/non-configurational dichotomy suggested in Hale (1982, 1983) and Chomsky (1981), or this dichotomy itself, may have to be reexamined. I suggested above that not only in Japanese but also in Navajo, the Projection Principle applies to every level of syntactic representation. The suggestion was that in the case of Navajo, the Projection Principle is satisfied by the clitics and the so-called "argument NPs" in this language are not argument NPs. It should be noted here that a very similar analysis is proposed independently and on independent grounds for Warlpiri in Jalinek (1984). She argues that the Projection Principle is satisfied in Warlpiri by the clitics attached to the AUX, and that "argument NPs" in this language are adjuncts. She defines the "Configurationality Parameter" as follows (p.73):[70]

(145)a. In a configurational language, object nominals are properly governed by the verb.

b. In a W(arlpiri)-type non-configurational language, nominals are not verbal arguments, but are optional adjuncts to the clitic pronouns that serve as verbal arguments.

Jalinek's proposal as well as our suggestion for Navajo are direct extensions of Hale's work on configurationality. Yet, the notion of configurationality embodied in (145) is quite distinct from the one in Hale's original proposal. According to (145), if our speculations on Navajo are correct, then Navajo is a (Warlpiri-type) non-configurational language but Japanese is not.[71] And more importantly, the crucial difference between English and Japanese on the one hand and Warlpiri and Navajo on the other lies not in whether the Projection Principle is satisfied, but in how this Principle is satisfied.

Footnotes Chapter Two

1. Here, the nodes that are not crucial for the purpose of discussion, e.g., INFL, PP are ignored. I will ignore INFL throughout this chapter.

2. For recent discussion of word-order typology from this point of view, see, for example, Koopman (1983) and Travis (1984). Cf. also Emonds (1979, 1980) for much relevant discussion.

3. For more arguments of this type, and evidence supporting those arguments, see Hasegawa (1981, pp.73-80).

4. It has been noted that not only Japanese but also other non-configurational languages require VP at some level of representation. I am not aware of any work that examines other non-configurational languges in the light of Marantz's arguments in the way Hasegawa did for Japanese. But Hale (1983) writes on Warlpiri as follows:

> Warlpiri grammatical processes attest to a certain subject-object asymmetry among the arguments in LS [Lexical Structure]. In an intuitively clear sense, the subject is 'superior' to the object; it is 'more prominent'. It is the subject which dominates in the binding relation involved in the reflexive-reciprocal construction (i.e., the subject binds the object), and it is the subject, not the object, which is accessible to binding by an external argument in structures of obligatory control (i.e., a matrix argument binds the subject of an infinitival). (p.22)

5. Koto (the fact that) is added to the end of some examples to avoid the unnaturalness resulting from the lack of topic in a matrix sentence. The result is an NP, but I will ignore koto in the translations.

6. For some of the arguments for a configurational analysis of Japanese not discussed here, see Hasegawa (1980), Saito (1982a,b), Kuroda (1983), Kumahira (1983) and Takubo (1983). See also Barss (1984a) for some relevant

discussion.

7. This condition can be considererd as part of the following more general principle suggested in Higginbotham (1983a):

(i) If X c-commands Y, then Y is not an antecedent of X. (cf. also Huang, 1982)

C-command is defined as follows:

X c-commands Y if neither X nor Y dominates the other and the first branching node dominating X dominates Y.
(Reinhart, 1979)

8. See Huang (1982) for arguments that what constrains [illegible] coreference in Japanese is not a condition that is stated solely in terms of linear precedence-relations, but a condition that refers to a hierarchical relation, e.g., c-command. (Cf. also Whitman, 1982.) I will, for the time being, simply assume that (17) is the correct formulation of the relevant condition, and that it applies universally. But I will come back to this problem later in this section.

9. Examples such as (20b) were first brought to my attention by Susumu Kuno (personal communication).

10. The same conclusion holds if the relevant condition is formulated in terms of precedence and Kommand as proposed in Lasnik (1976). I am indebted to a number of people for convincing me that I should take this possible objection seriously. Among them are Noam Chomsky, Susumu Kuno, Mark Liberman and Guy Carden.

11. See Kuno (1983) for a detailed discussion. The idea that the possibility of anaphoric relations are affected by the precedence relation is of course not new. Kuno (1983) also contains a historical survey of this issue. He specifically argues that the principles of Binding Theory should be formulated in terms of precedence and Kommand. It is not clear to me at this point how compelling his arguments are. But the double object construction does seem to pose interesting problems not only for the Binding Principles but also for other conditions as well. For example, we find contrasts such as the following:

(i)a. I handed every author$_i$ his$_i$ book

b.*I handed its$_i$ author every book$_i$

At this point, it is not clear to me how this contrast should be accounted for.

12. An A-position is, roughly speaking, a position in which an NP can appear at D-structure. For example, the subject position and the object position are both A-positions. An A'-position is a position that is not an A-position.

13. In Saito (1982b, 1983a), where examples such as (31b) and (32b) were first presented as evidence for a movement analysis of the free word-order phenomenon, those examples are given "*". Whitman (1982) discusses similar examples, and considers them grammatical. But I do not think that this means one of us is wrong. The reason for this apparent conflict in judgement seems to be that Saito (1982b, 1983a) draw the line of grammaticality between the (a) sentences and the (b) sentences in (31)-(32), while Whitman (1982) notes and discusses the significance of the contrast between (31b)-(32b) and examples such as those in (36). Furthermore, as noted in the text, there is variation in speakers' judgements on the sentences in (31b) and (32b).

14. See Shibatani (1977, 1978), Kuno (1978a), Inoue (1978), Haig (1980) for discussions of this phenomenon.

15. But see Kumahira (1983), Hoji (forthcoming a) for recent discussions of the behavior of quantifiers in Japanese.

16. Since the lexical structure is constrained by the Projection Principle by definition, an empty category is required in the object position of (47).

17. It is not clear that such analysis should not be maintained as the analyses for discontinuous expressions in Warlpiri. See Hale (1981, 1983), Nash (1980), Simpson (1983) for relevant facts in Warlpiri.

18. See Kuroda (1965a). The semantic/pragmatic differences and non-differences between the "ni-causative" and "o-causative" have been discussed extensively. See, for example, Kuroda (1965a), Shibatani (1976), Tonoike (1978)

and references cited there.

19. It is shown in Kuroda (1978), Poser (1981) that the "double-o constraint" proposed in Harada (1973) is to be divided into two separate constraints. One is a relatively weak surface constraint that rules out a simple sentence with two NPs marked by o. This applies to the so-called adverbial o as well, and can be overcome by pseudo-clefting the adverbial with o.

(i)a.*Taroo-ga Hanako-o hamabe-o aruk-ase-ta
-nom -acc beach-acc walk-make-past

(Taro made Hanako walk on the beach)

b. Taroo-ga Hanako-o aruk-ase-ta no-wa
-nom -acc walk-make-past one-topic

hamabe-(o)-da
beach-acc-is

(The place that Taro made Hanako walk is the beach)

(Kuroda, 1978, p.39)

The other one is a stronger and deeper constraint against a simple sentence with two complements marked by o. This constraint cannot be overcome by pseudo-clefting one of the NPs marked by o.

(ii)a.*Hanako-ga Taroo-o mesi-o tak-ase-ta
-nom -acc rice-acc cook-make-past

(Hanako made Taro cook rice)

b.*Hanako-ga Taroo-o tak-ase-ta no-wa
-nom -acc cook-make-past one-topic

mesi-(o)-da
rice-acc-is

(The thing that Hanake made Taro cook is rice)

(Kuroda, 1978, pp.39-40)

It is the latter kind of "double-o" constraint that I am concerned with in the text.

20. It is irrelevant to our discussion whether the causee John-ni in (52) is in the matrix clause and controls PRO in the embedded subject position, as shown in (53), or it is itself in the embedded subject position.

21. Oshima (1979) assumes that causative sentences have complex structures and shows that Chomsky's (1973, 1976) opacity conditions account for a number of facts in Japanese, including those in (56)-(57).

22. See also Zubizarreta (1982) and Manzini (1983) for relevant discussion.

23. Farmer (1980) assumes that the disjoint reference rule refers to the "predicat-argument structure," where the causative morpheme sase selects for a sentential complement.

24. Again, whether John-ni in (61b) belongs to the matrix clause or is in the embedded subject position is irrelevant for our discussion.

25. For detailed discussion of the causative constructions in Japanese and other languages and of their theoretical implications, See Marantz (1981a). See also Zubizarreta (1982, 1983) and Miyagawa (1983) for much relevant discussion.

26. It is of course not clear at this point whether the adjunction site for scrambling should be limited to S. I will come back to this problem in Chapter 3.

27. In Saito & Hoji (1983), we stated that in (64b), "the trace [of scrambling] is coindexed with and c-commanded by the pronoun kare in the subject position,..., and only the former [(64b)] exhibits strong crossover" (p. 246). Farmer & Tsujimura (1984) points out that examples such as (i) fit our description of strong crossover and yet, they are grammatical.

(i) $[_S$zibun$_i$-o $[_S$kare$_i$-ga t_i semeta]]
self -acc he -nom blamed

(He blamed himself)

They present (i) as a "piece of evidence to falsify S & H's basic assumption with respect to strong crossover

phenomenon," and considers it as evidence against our assumption that scrambling is an instance of Move-alpha. I believe that their argument is sound as a criticism against our description of strong crossover, and further, that their example presents an interesting problem for the account of the strong crossover phenomenon. Similar examples have been discussed in the literature. The following example is from Kuno (1973a, P. 353):

(ii)??Zibun$_i$-o John$_i$-ga hometa
self -acc -nom praised

(Lit. Himself, John praised)

Examples similar to (ii) are given "*" in Muraki (1974, p. 88), Whitman (1982), Hale (1983), and "??" in Kuno (1973a), Miyara (1982). I agree with them that examples such as (ii) are far from perfect for some reason, but according to my judgement, they are certainly not as bad as (64b). And (i) seems to have the same degree of grammaticality as (ii). In this connection, it should be noted that Kuno was contrasting (ii) with the worse example in (iii), and Muraki was contrasting similar examples with better examples such as the one in (iv).

(iii)*John$_i$-o zibun$_i$-ga hometa
-acc self -nom praised

(Lit. John, himself praised)

(iv) zibun$_i$-no otooto -o John$_i$-ga hometa (koto)
self -gen brother-acc -nom praised fact

(Lit. His own brother, John praised)

Whatever the reason for the marginality of (i) and (ii) may be, it seems clear that, as Farmer & Tsujimura point out, (i) should not be ruled out as an instance of strong crossover. However, the problem raised by Farmer & Tsujimura seems to me to be totally independent of the configurationality issue. It is known that English examples such as those in (v) are grammatical, in particular, in contrast with (vi).

(v)a. Himself$_i$, John$_i$ loves $\underline{t}_i$

b. Himself$_i$, he$_i$ loves $\underline{t}_i$

(vi) *John$_i$, he$_i$ loves $\underline{t}_i$

Thus, it seems that any account of strong crossover must exempt a trace of an anaphor from such effects. (Cf. for example, de Fourier, 1980, van Riemsdijk & Williams, 1981, Weisler, 1983, Gueron, 1983, Kuno 1983, Mohanan, 1983, Cinque, 1983, Barss, 1984a for discussion relevant to this issue.) And if this is correct, then we do expect (i) to be grammatical under the hypothesis that scrambling is an instance of Move-alpha.

28. Compare (68) also with the grammatical example in (i).

(i) His$_i$ mother loves John$_i$

Weak crossover, as well as strong crossover, has been discussed extensively in the literature. See, for example, Postal (1971), Wasow (1972), Chomsky (1976, 1981, 1982), Reinhart (1976), Higginbotham (1980a, 1980b, 1983a), Koopman & Sportiche (1982/1983), Safir (1984), Haik (1983) and references cited there.

29. The solution suggested in Saito & Hoji (1983) is very similar in essense to the analysis proposed independently in Aoun (1983). The reader is refered to this work for a somewhat different instantiation.

30. X is a <u>variable</u> if (i) X=[$_{NP}$<u>e</u>],
(ii) X is in an A-position, and
(iii) X=[-pronominal,-anaphor].
(Cf. Chomsky, 1982, pp.78-79.)

For our purpose here, we can assume the more informal "definition" below.

X is a variable if (i) X is in an A-position, and

(ii) X is a trace of movement to an A'-position.

31. In this sense, the hypothesis in Saito & Hoji (1983) is closer to Jaeggli's (1984) condition on bound pronominals, which states,

(i) A pronominal p_i can be bound by a quantifier Q_i if there is a c-commanding variable x_j such that : (i) x_j is the variable of Q_i, i.e., i=j, or (ii) x_j is the variable of Q_j distinct from Q_i, and Q_j is within the scope of Q_i.

This condition has the effect of prohibiting the linking of his to the wh-operator in (68) and (71b), but says nothing about (69) since the scrambled phrase is not a quantifier. (Cf. also Montalbetti, 1984 for relevant discussion.) The condition in (i) by itself accounts for all the weak crossover facts discussed so far. But some facts that seem to distinguish Jaeggli's condition from the account of Saito & Hoji (1983) will be discussed later in this section.

32. It is not clear under what circumstances a wh-phrase in COMP can be the direct antecedent of a pronoun. But there seems to be good reason to believe that this is a restricted, and hence, somewhat exceptional phenomenon. For example, resumptive pronouns seem to be much more restricted in wh-questions than in relative clauses with a non-quantificational head.

(i)a.*Who$_i$ does Mary like his$_i$ mother (Cf. (71b).)

b.??the man$_i$ that Mary likes his$_i$ mother

33. The analysis of the contrast between (82) and (83) in this paragraph, as well as its implication for the examples in (86), was originally suggested to me by Jim

Higginbotham (personal communication, 1982).

34. For a number of speakers, topicalization sentences such as (87a) are better than relative clauses such as (82). This may be related to the fact that resumptive pronouns appear more freely in topic constructions than in relative clauses, i.e., left-dislocation is a fairly productive phenomenon. The latter fact may in turn be related to the fact that the topic in (87a) is truly referential, while the relative head in (82) is not. Another way to interpret this difference between topic constructions and relative clauses was suggested to me by David Pesetsky. (82) has the following structure:

(i) $[_{NP}$the man$_i[_S$, who$_i[_S$...his$_i$...$\underline{t}_i$...]]]

The relative clause restrictively modifies the relative head. In this sense, the reference of the whole NP in (i) is dependent on the reference of his. But the reference of his is exactly the reference of the whole NP. Thus, it seems that there is some sort of referential circularity involved in this kind of example. This of course is not the case in topic constructions. Under either account, we predict that examples like (82) improve when the pronoun has a possible antecedent other than the relative head. For example,

(ii) John$_i$ is the man$_i$ who$_i$ his$_i$ mother loves $\underline{t}_i$
(David Pesetsky, p.c.)

Another prediction is that with the weak crossover configuration, non-restrictive relative clauses are even better than restrictive relative clauses.

(iii) that man$_i$, who$_i$ his$_i$ mother loves $\underline{t}_i$

Both predictions seem to be borne out.

35. Wh-phrases can be scrambled in Japanese. For example,

(i) Dare$_i$-o $[_S$John-ga $\underline{t}_i$ sagasite iru no]
who -acc -nom looking-for

(Who is John looking for)

The movement of dare-o (who-acc) in (i) cannot be movement to COMP, since COMP appears to the right of the sentence in Japanese.

(iii) John-ga $[_{S'}[_{S}$Mary-ga kuru] to] omotte iru (koto)
-nom -nom come COMP think fact

(John thinks that Mary will come)

36. I assume that Case markers such as ga (nom) and o (acc) are stranded by LF movement. But this assumption does not have any effect on the discussion here.

37. See Nakayama (1982), Saito & Hoji (1983), Montalbetti (1984), Hoji (forthcoming a) for relevant discussion. (101) in fact follows from Montalbetti's more general Overt Pronoun Constraint (-2). He shows that a constraint of the form in (101) applies to an overt pronoun universally when a null pronoun can appear in the place of the overt pronoun. As he predicts, the examples in (99) are grammatical when a phonologically null pronoun is substituted for kare-ga (he-nom).

38. The particular examples in (104) are due to Hajime Hoji. See Hoji (forthcoming a) for a detailed discussion of similar facts.

39. The fact that the sentence used as the English translation of (104b), i.e., (i), is not as bad as the regular weak crossover cases is somewhat puzzling.

(i) Which book$_i$ did John read t_i before Mary read it$_i$

One might take examples such as (i) as evidence for Chomsky's (1976) leftness condition. That is, one might conclude on the basis of (i), that contrary to Reinhart (1976) and Higginbotham (1980a), what is relevant for weak crossover is not the hierarchical relation between the pronoun and the variable but the precedence relation between them. (Cf. also fn.11.) If we assume that weak crossover obtains only when the pronoun precedes the variable, then it is no longer puzzling that (i) is better than the regular cases of weak crossover. However, it seems to me that it is too hasty to derive this conclusion

from (i). First of all, there are examples noted in the literature that suggest that the linear precedence relation does not play in any role in weak crossover. The following example is from Chomsky (1982, p.38):

(ii) ?*Who$_i$ did you give a picture of t_i to him$_i$

Secondly, it has been proposed on indendent grounds that before-clauses in English are within the VP and are c-commanded by the direct object. (Contreras, 1984, Barss, 1984b). Given this analysis, the contrast between (104b) and (i) can be derived from Hoji's (1982, forthcoming a, b) hypothesis that Japanese, but not English, has a strictly binary VP-internal structure. (Cf. also Huang, 1982, Saito, 1984, to appear.) As we will see shortly, the parasitic gap facts indicate that before-clauses in English are not c-commanded by the direct object.

(iii) This is the kind of food you must cook t before you eat e

(Chomsky, 1982, p.38)

Here, we can adopt Barss's hypothesis that before-clauses are within VP initially, but can be adjoined to VP by extraposition. Given this hypothesis, before-clauses may or may not be c-commanded by the direct object at S-structure, depending on whether they are extraposed or not. See Barss (1984b) and also forthcoming work by Kyle Johnson for detailed discussions of the consequences of this analysis for the Binding Theory.

40. X binds Y if

(i) X and Y are coindexed, and
(ii) X c-commands Y.

X locally binds Y if (i) X binds Y, and
(ii) there is no Z such that X binds Z and Z binds Y.

X A'-binds Y if (i) X binds Y, and
(ii) X is an A'-position.

(Cf. Chomsky, 1981, pp.184-185.)

41. Parasitic gaps in Japanese clearly deserve more

careful study. For a more detailed discussion of this phenomenon, see Hoji (forthcoming b) and Yoshimura (1984).

42. There is an enormous amount of literature on zibun. See, for example, N. A. McCawley (1976), Inoue (1976a), Kuroda (1982), Koster (1982), Matsumoto (1983), Fiengo & Haruna (1983), Fukui (1984) and references cited there.

43. As is also noted in Saito & Hoji (1983, fn. 6), the contrast is obscured when zibun appears sentence-initially in the embedded clause. We speculated there that this fact, as well as the fact that the examples in (111) are only marginal, is due to the possibility of the emphatic usage of zibun. See Nakayama (1982), Farmer & Tsujimura (1984), and in particular Hoji (forthcoming a).

44. Despite the fact that zibun is an anaphor, it need not be bound in a local domain. See the references cited in fn. 41.

45. This is explicitly stated in works such as Whitman (1982), Saito (1982b).

46. See Lasnik & Saito (forthcoming) for a detailed discussion on the similarities and differences between scrambling and English topicalization.

47. This analysis is developed from the analysis in Higgins (1973), where topicalization is regarded as movement of the topic into COMP.

48. More precisely, Baltin cites (121) as evidence against the COMP-substitution analysis of topicalization (cf. fn. 46). See Baltin (1982a, pp. 16-22) for further arguments for the S-adjunction analysis.

49. Examples such as (126d), (127b) are not totally out for some speakers. I speculate that for those speakers, the embedded clause in those examples can be "construed as a matrix clause" in some sense. As Howard Lasnik points out (personal communication), there is probably no such way out for sentential subjects, and in fact, left-dislocation in sentential subjects results in complete ungrammaticality.

(i)a. That this solution, I proposed last year is widely known.

b.*That this solution, I proposed it last year is widely known.

Compare (ib) with (iib).

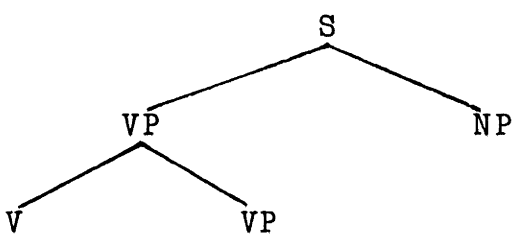
(ii)a. This solution, I proposed last year.

b.?This solution, I proposed it last year.

The examples in (i)-(ii) are from Lasnik (1984).

50. See Rizzi (1982), Burzio (1981) for detailed discussion of the postverbal subject construction in Italian. Travis (1984) argues that sentences such as (130a) simply have the following structure:

(i)



If this is the case, then the postverbal subject construction in Italian is not a problem for the generalization in (124).

51. I am indebted to Ken Hale for the Navajo data discussed in this section. Discussions with him have led me to the arguments and suggestions presented in this section.

52. Since Japanese lacks gender/number/person agreement, the null pronouns can in principle be interpreted freely with respect to these features. In the case of (132b), the features of the pronoun are disambiguated semantically and pragmatically. Omoimasu (think) in declarative sentences is usually used to assert the speaker's opinion, and motte kuru (bring) selects for an inanimate object.

53. Navajo differs from Japanese in that it has clitics agreeing with the subject and object and specifying the

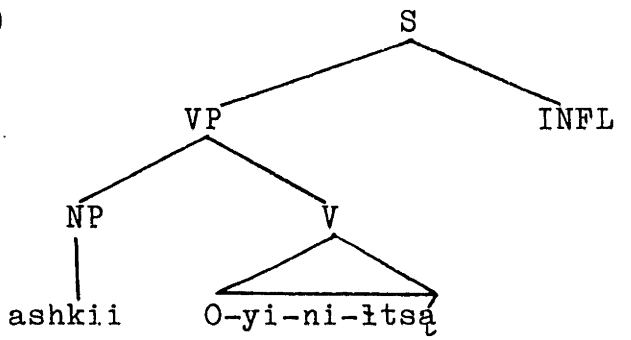
number and person of the corresponding argument.

54. When we say "the NP immediately preceding the verb," we are ignoring PPs and adverbs that may intervene between the NP and the verb. For discussion of the yi/bi alternation in Navajo, see Platero (1978, Chapter 4, Section 4), Speas (1983a), Walli (1983) and references cited there.

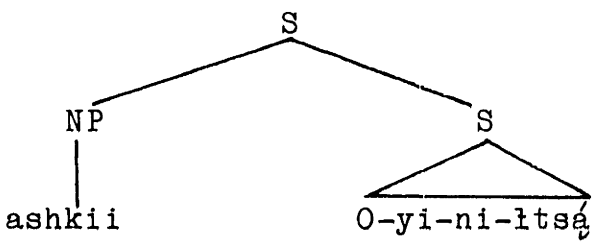
55. In the original form of the argument, Platero assumes that Navajo lacks VP and uses Lasnik's (1976) disjoint reference rule in terms of precedence and kommand instead of (137).

56. It is not clear at this point how the exact structures of Navajo sentences should be represented. The structures of (133a) might be as in (i) or (ii).

(i)



(ii)



If "argument NPs" are adjoined to S, as in (ii), then they are exceptions to the generalization in (124), which states that an NP in an adjoined position must bind a variable. This may mean that "argument NPs" in Navajo are licensed by some sort of predication, like Topic phrases in Japanese. I will discuss topic phrases in Japanese, which also seem to be exceptions to (124) in Chapter 4.

57. The third person object prefix, yi/bi, is realized as Ø unless the subject is also third person. The third person

subject prefix is always realized as Ø. See Speas (1983a) and Young & Morgan (1969).

58. PRO is [$_{NP}$e] with the feature specification [+anaphor, +pronominal]. Cf. Chomsky (1981, 1982).

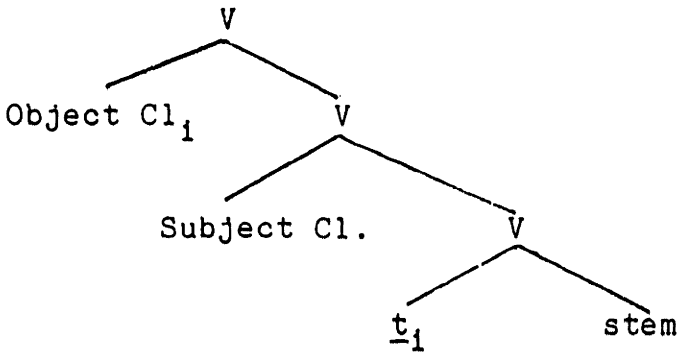
59. Huang (1981/1982) shows that LF wh-movement of adjuncts, as opposed to that of complements, seems to be constrained by the Subjacency Condition (cf. Chomsky, 1973), despite the fact that Subjacency is a constraint on S-structure movement and not on LF movement. He shows in Huang (1982) that this fact, as well as the contrast between (142) and (143), follows from the Empty Category Principle (ECP) applying at LF. Ken Hale (personal communication) points out not only that multiple wh questions are impossible in Navajo, but also that LF wh-movement in this language seems to obey Subjacency in general. Thus, "argument whs" in Navajo seem to behave like adjuncts also with respect to "LF Subjacency effects." It is pointed out in Speas (1983b) that not only these facts but also some other facts in Navajo can be straightforwardly accounted for by the ECP, if we assume that "argument NPs" in this language are non-complements.

60. For example, if it is correct that clitics are assigned Theta-roles by the verb stem in Navajo, it must be worked out how this Theta-role assignment takes place. This problem is not trivial, since the object clitic precedes the subject clitic in Navajo, and it is not clear how the predicate-argument structure is represented within Navajo verbs.

(i) Object Cl. - Subj. Cl. - V stem

Limiting the discussion to clitics and the stem, it is possible to assume that Navajo verbs have the following structure:

(ii)



Then, we can maintain that the verb (stem) assigns a Theta-role directly to the object clitic, and that it assigns a Theta-role to the subject clitic compositionally with the object clitic. This hypothesis is in accord with the claim in Fabb (1984) that words can have full syntactic structures. But the implications of this hypothesis, both for Navajo and for the theory of morphology, must be examined before we start taking this hypothesis seriously. See Speas (1983a) for relevant discussion.

61. It is not quite clear to me from the discussion in Jalinek (1984) why (145a) is stated in terms of the relation "proper government." As far as I can tell, no phenomenon that seems to directly involve this relation is discussed in the paper. What seems to be argued for there is rather the following:

    (i) In a configurational language, object nominals are assigned Theta-roles directly by the verb.

    (145a) and (i) are of course equivalent if the following holds:

    (ii) A lexical head X properly governs Y if and only if X directly assigns a Theta-role to Y.

    See also Jaeggli (1980), Stowell (1981a) and Lasnik & Saito (1984) for relevant discussion.

62. Japanese cannot be a (Warlpiri-type) non-configurational language if it lacks clitics as we have been assuming. If, however, Japanese has empty clitics, (see Safir (1982)), then it may be non-configurational according to (145); I will not pursue this latter possibility here.

SOME ASYMMETRIES IN JAPANESE AND THEIR THEORETICAL IMPLICATIONS

Vol. 2

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Chapter 3

"Long-Distance" Scrambling

In Chapter 2, I argued for scrambling as an instance of S-structure Move-alpha. As noted there, whether scrambling is clause-bound or not has been controversial.[1] This chapter is concerned with this issue. Discussing this issue, I will examine further properties of scrambling as well as some other aspects of Japanese grammar.

The issue concerning the clause-boundedness of scrambling, as far as I know, is not whether a phrase can be preposed out of its clause. Examples such as the following are in fact grammatical:[2]

(1)a. Sono hon-o_i John-ga [$_S$,Mary-ga $\underline{t}_i$ katta to]
that book-acc -nom -nom bought COMP
omotte iru (koto)
think fact
(John thinks that Mary bought that book)

b. Sono mura-ni$_i$ John-ga [$_S$, Bill-ga t_i sunde iru to]
that village-in -nom -nom reside COMP

omotte iru (koto)
think fact

(John thinks that Bill lives in that village)

The issue instead has been whether this kind of "long-distance" preposing should be treated as a subcase of scrambling.

In Saito (1983a), I assumed that scrambling is clause-bound. But the ar .ment for this assumption that I had in mind at that point now seems to me to be completely wrong. Sentences such as those in (1) involve some sort of "constrastive focus" on the preposed phrase. "Long-distance" preposing is in fact called 'emphatic fronting' in Haig (1976), and as Hajime Hoji (personal communication) points out, sentences with "long-distance" preposing in general sound very natural when the preposed phrase is [+wh]. (1a), for example, can be naturally translated as 'it is that book that John thought that Mary bought.' This does not mean that this kind of "focusing" must be represented in some way at LF. But I thought, at that point, that this was a good reason to distinguish clause-internal scrambling from "long-distance" preposing, and that examples such as those in (1) can even be

considered ungrammatical as examples of scrambling. However, it seems that the preposed phrase is "focused" not only with "long-distance" preposing but also with clause-internal scrambling.[3] There does seem to be a difference between "long-distance" and clause-internal preposing in the degree of "focusing" involved. That is, a phrase that is preposed "long-distance" seems to be "focused" more, or more clearly, and this actually may be the reason why sentences with "long-distance" preposing, in some cases, sound less natural than those with clause-internal scrambling. But such "difference in degree" can hardly be considered as a good reason to assume two distinct preposing rules.[4]

Tonoike (1980) and Miyara (1982) present more interesting arguments for the clause-boundedness of scrambling. (Cf. also Whitman, 1979.) Their arguments have the following structure:

(2)a. "Long-distance" preposing seems to be more restricted and more heavily constrained than clause-internal scrambling.

b. Hence, "long-distance" preposing cannot be regarded as a subcase of scrambling.

c. Therefore, scrambling is clause-bound.

Given arguments of this form, we are faced with an

interesting problem. If "long-distance" preposing in fact seems more restricted than clause-internal scrambling, a question naturally arises as to why this is the case. Tonoike's and Miyara's hypothesis is that the relevant facts can be accounted for in a principled way if we assume two distinct rules, clause-internal scrambling and "long-distance" preposing.[5] On the other hand, it may turn out to be the case that scrambling is not clause-bound, and the ungrammatical examples with "long-distance scrambling" discussed in the literature are ruled out independently by some general principles. If this turns out to be the case, then the argument for postulating two distinct rules will be weakened considerably. In this chapter, assuming that scrambling is an adjunction operation, I will argue that the illicit cases of "long-distance scrambling" discussed in the literature are to be ruled out on independent grounds, and hence, that there is very little reason, if any, to suppose that scrambling is clause-bound.

In the following section, I will first argue that given the discussion in the preceding chapter and the relevant data on "long-distance" preposing, we are naturally led to the conclusion that scrambling is not clause-bound. It was Harada (1977) who first assumed that scrambling is not

clause-bound and formulated the scrambling rule accordingly. Thus, the arguments presented here can be viewed as arguments in support of Harada (1977). In the second part of the first section, I will consider some examples that have been discussed in the literature as counterexamples to Harada's formulation of the scrambling rule. I will show that they are either not problematic for Harada, or if they are, they do not show that scrambling is clause-bound but they support our hypothesis that scrambling involves leftward adjunction. In the second section, I will consider one class of "counterexamples" to Harada's analysis in more detail, and suggest that subject NPs are not subject to "long-distance" scrambling. I will then discuss subject-object asymmetries with Case marking in Japanese, and argue that subject NPs are not assigned abstract Case in this language. It will be pointed out there that our hypothesis on Case marking predicts that subject NPs can never be scrambled. Finally, in Section 3, I will speculate on the characterization of scrambling.

3.1 General Remarks

3.1.1 Is Scrambling Clause-Bound?

We have already seen some properties of scrambling in the preceding chapter. And as noted above, a phrase can be preposed out of its clause in Japanese. If "long-distance" preposing shares the properties of scrambling, then it is reasonable to consider the former a subcase of the latter. And in fact, "long-distance" preposing seems to have the properties of scrambling noted in Chapter 2.

First of all, "long-distance" preposing affects the possibility of pronominal coreference, as shown below.

(3)a.*Kare$_i$-ga [$_S$,dareka-ga [$_{NP}$Mary-ga John$_i$-ni okutta tegami-o]
he -nom someone-nom -nom -to sent letter-acc

nusumiyomisita to] omotte iru (koto)
took-a-peek-at COMP think fact

(*He thinks that someone took a peek at the letter Mary sent to John)

b. [$_{NP}$Mary-ga John$_i$-ni okutta tegami-o]$_j$ kare$_i$-ga [$_S$,dareka-ga

t_j nusumiyomisita to] omotte iru (koto)

(4)a.*John-ga [$_S$,kanozyo$_i$-ga [$_{NP}$kinoo Mary$_i$-o tazunete kita
-nom she -nom yesterday -acc came-to-see

hito -o] kiratte iru to] omotte iru (koto)
person-acc dislike COMP think fact

(*John thinks that she dislikes the person who came to see Mary yesterday)

b. [$_{NP}$kinoo Mary$_i$-o tazunete kita hito-o]$_j$ John-ga

[$_S$,kanozyo$_i$-ga t_j kiratte iru to] omotte iru (koto)

Given the constraint in (5), the example in (3b) shows that in the case of "long-distance" preposing also, the preposed phrase is in a position the matrix subject does not c-command.

(5) A pronoun cannot c-command its antecedent.

With "long-distance" preposing, we can clearly see the strong crossover effect when a pronoun c-commands a trace of its antecedent.

(6)a.*[$_S$Kanozyo$_i$-ga [$_S$,John-ga Mary$_i$-o kiratte iru to]
she -nom -nom -acc dislike COMP

omotte iru] (koto)
think fact

(*She thinks that John does not like Mary)

b.*[$_S$Mary-o$_i$ [$_S$kanozyo$_i$-ga [$_S$,John-ga t_i kiratte iru to]

omotte iru]] (koto)

Secondly, and more importantly, multiple "long-distance" preposing seems to be possible. The examples in (7b-c) may sound somewhat unnatural, but they seem to me to be perfectly grammatical.[6]

(7)a. Mary-ga [$_S$,John-ga Bill-ni sono hon-o watasita to]
-nom -nom -to that book-acc handed COMP
omotte iru (koto)
think fact
(Mary thinks that John handed that book to Bill)

b. Bill-ni$_i$ sono hon-o$_j$ Mary-ga [$_S$,John-ga $\underline{t}_i$ $\underline{t}_j$ watasita to] omotte iru (koto)

c. Sono hon-o$_j$ Bill-ni$_i$ Mary-ga [$_S$,John-ga $\underline{t}_i$ $\underline{t}_j$ watasita to] omotte iru] (koto)

Recall that in Chapter 2, the S-adjunction analysis of scrambling was motivated on the basis of the fact that multiple scrambling is possible. If scrambling involves S-adjunction, then (8a), for example, can be analyzed straightforwardly as having the structure in (8b).

(8)a. Sono hon-o Bill-ni John-ga watasita (koto)
that book-acc -to -nom handed fact

(John handed that book to Bill)

b. [$_S$Sono hon-o$_i$ [$_S$Bill-ni$_j$ [$_S$John-ga [$_{VP}$$\underline{t}_j$ $\underline{t}_i$

watasita]]]] (koto)

Thus, to the extent that it is plausible to assume that scrambling involves adjunction to S, it seems plausible to assume that "long-distance" preposing also involves adjunction to S.

If "long-distance" preposing involves S-adjunction, then we expect it to have another property of scrambling discussed in Chapter 2. I noted in Chapter 2 that scrambling does not allow resumptive pronouns, and argued that this is expected, given that scrambling is an adjunction operation. Thus, if "long-distance" preposing is also an adjunction operation, we predict that it also does not allow resumptive pronouns. This prediction is borne out by the following examples:

(9)a.*Sono hon$_i$-o [$_S$John-ga [$_S$,Mary-ga sore$_i$-o katta to]
that book-acc -nom -nom it -acc bought COMP

omotte iru] (koto)
think fact

(John thinks that Mary bought that book)

pronouns, as shown in (1).

Thus, "long-distance" preposing seems to share the properties of scrambling discussed in Chapter 2, and in particular, it seems to have those properties of scrambling that motivated the adjunction analysis. Hence, it seems quite reasonable to assume that "long-distance" preposing is exactly like clause-internal scrambling in that it involves adjunction to S. But once we assume that both "long-distance" preposing and clause-internal scrambling involve S-adjunction, there seems to be very little reason, if any, to distinguish between the two. They involve the same operation, except that one moves a phrase out of its clause and the other does not. Therefore, I will assume henceforth that "long-distance" preposing is a subcase of scrambling, and hence, that scrambling is not clause-bound.

3.1.2 "Counter-Examples" to Harada's Analysis

As noted above, among those who assumed that scrambling is not clause-bound, it was Harada (1977) who first formulated the scrambling rule explicitly. In this section, I will consider the examples discussed in the literature as counterexamples to Harada's scrambling rule. The purpose of this section is twofold. One is to show that those

"counterexamples" to Harada's analysis are not problematic for our analysis of scrambling. The other is to examine further properties of scrambling by way of discussing those examples.

3.1.2.1 "Rightward Scrambling"

Harada's (1977, p.99) formulation of the scrambling rule is shown in (10).

(10) W (X") W (X") W V W
1 2 3 4 5 6 7 --->
1 4 3 2 5 6 7

This rule allows two phrases to exchange their positions when there is a verb that follows those two phrases. In addition, it also allows a phrase which precedes a verb to move to any position preceding that verb. Harada proposes this formulation of the scrambling rule, assuming that scrambling is subject to Bresnan's (1976) relativized A-over-A principle as well as to Ross's (1967) island constraints such as the complex NP constraint and the coordinate structure constraint.

An interesting class of ungrammatical sentences is discussed in Whitman (1979) as counterexamples to Harada's formulation of the scrambling rule. The examples in this

class are of the following form:

(11) $\ldots[_S \ldots \underline{t}_i \ldots] \ldots NP_i \ldots$

Since Whitman's examples involve some complications that are irrelevant to the discussion here, I will list some similar examples.

(12)a.*[$_S$,Mary-ga yonda to] sono hon-o John-ga itta (koto)
-nom read COMP that book-acc -nom said fact

(John said that Mary read that book)

b.*[$_S$,Bill-ga sunde iru to] sono mura-ni John-ga
-nom live COMP sono village-in -nom

omotte iru (koto)
think fact

(John thinks that Bill lives in that village)

(12a), for example, is derived from (13) by scrambling.

(13) John-ga [$_S$,Mary-ga sono hon-o yonda to] itta (koto)
-nom -nom that book-acc read COMP said fact

(John said that Mary read that book)

Tonoike (1980) also cites a similar example, arguing that "long-distance" preposing is not as free as clause-internal scrambling, and hence that they should be treated separately. (Cf. also Miyara, 1982, p.329.) It is not clear to me that the sentences in (12) or Whitman's examples

are really problematic for Harada's formulation of the scrambling rule in any serious way. But the rule in (10) does allow the generation of the examples in (12) if it can be applied iteratively.[7]

Let us consider the derivation of (12a) from (13). If we take the embedded verb yonda (read) in (13) to be the V in the context predicate of (10), Harada's rule correctly allows sono hon-o (that book-acc) to move all the way to the initial position of the matrix clause. The result of this operation is the grammatical sentence in (14).

(14) Sono hon-o John-ga [$_S$,Mary-ga yonda to] itta (koto)
that book-acc -nom -nom read COMP said fact
(John said that Mary read that book)

But as shown in (15), an S' can also be scrambled to the sentence-initial position.

(15)a. John-ga [$_S$,Mary-ga sono hon-o yonda to] itta (koto)
-nom -nom that book-acc read COMP said fact
(John said that Mary read that book) (=(13))
b. [$_S$,Mary-ga sono hon-o yonda to] John-ga itta (koto)

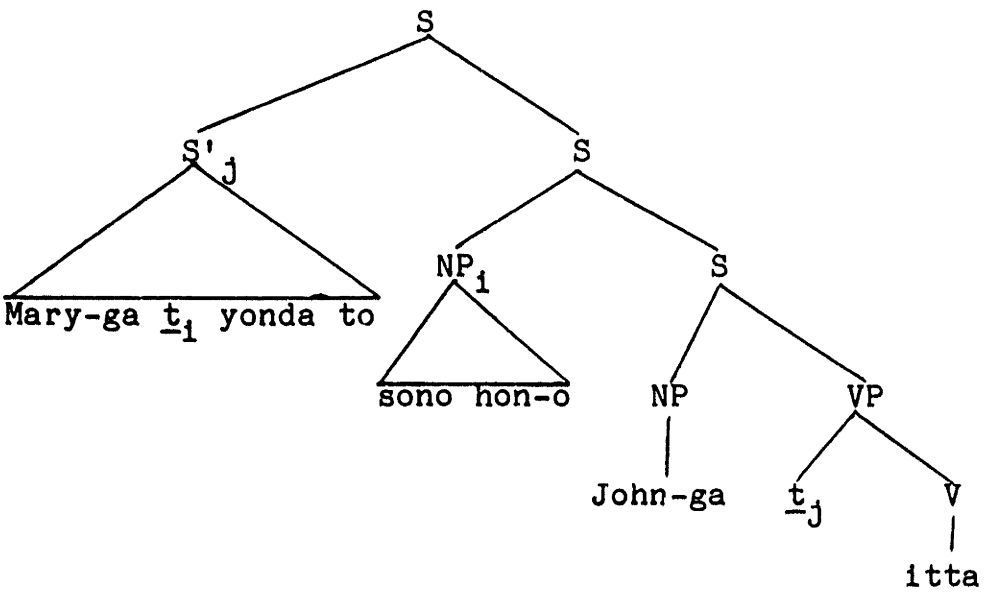
Thus, if scrambling can apply iteratively, then from (14), we can take the matrix verb itta (said) to be the V in the context predicate of (10), and derive the ungrammatical

sentence (12a) by scrambling the embedded S' to the sentence-initial position.[8]

Whether the examples in (12) are counterexamples to (10) or not, those examples seem problematic for any analysis which assumes that scrambling is not clause-bound and can apply iteratively. And if "long-distance" preposing is a subcase of scrambling, as I argued above, then one must assume not only that scrambling is not clause-bound, but also that it can apply iteratively to account for examples such as (7b-c). However, given our hypothesis that scrambling is an S-structure adjunction operation, the examples in (12) are straightforwardly ruled out on independent grounds.

If scrambling involves S-adjunction, then (12a) is derived from (13) by adjoining first sono hon-o (that book-acc) and then the embedded S' to the matrix S. The structure of (12a) will be as follows:

(16)



Note that in (16), the trace of sono hon-o is not c-commanded by its antecedent. Hence, this example is in violation of the condition against free traces, which is stated below in (17).

(17) Traces must be bound.[9]

The configuration in (16) seems to be illicit also for another reason. In Chapter 2, we saw that scrambling, embedded topicalization in English and heavy NP shift do not allow resumptive pronouns. I proposed to state the descriptive generalization as follows:

(18) An NP in an adjoined position must bind a variable.

If (18) is true, then the configuration in (16) is clearly ill-formed. The NP sono hon-o is adjoined to S but does not bind a variable.

As we saw above, once we assume that scrambling is an S-structure adjunction operation, we can let scrambling freely generate examples such as those in (12), since they will be ruled out on independent grounds. Thus, there does not seem to be any reason to suppose on the basis of those examples that "long-distance" preposing is more restricted than clause-internal scrambling, and hence, that scrambling is clause-bound. Since the adjunction analysis of scrambling enables us to rule out the examples in (12) without any stipulation, those examples constitute further evidence for this analysis of scrambling.

3.1.2.2 Other "Counter-Examples"

Aside from examples such as those in (12), many other examples have been discussed in the literature either as counterexamples to Harada's analysis or as evidence for the clause-boundedness of scrambling. (Cf. Inoue, 1977, Muraki, 1979, Whitman, 1979, Tonoike, 1980, Miyara, 1982.) However, most of the arguments, it seems to me, are fairly

weak empirically, if not conceptually.[10] I will go over some of those arguments in this section.

3.1.2.2.1 Scrambling of Adjuncts

Miyara (1982) is the most recent work that contains arguments for the clause-boundedness of scrambling. He states (p.331),

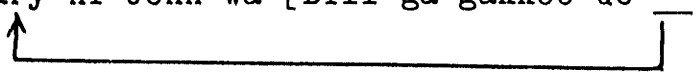
> The two constituents that are scramblable are determined in terms of structural configuration and adverbs are freely scrambled with other constituents. But in the Emphatic Fronting [="long-distance" preposing], adverbials of manner, time and place, in principle, would not be fronted as shown in (35c) [=(19c)]. This fact makes it impossible to handle the Emphatic Fronting in the same way as Scrambling is treated.

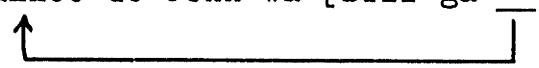
Thus, Miyara's main argument for treating clause-internal scrambling and "long-distance" preposing separately is that adverbials are subject to the former but not to the latter.[11] (Cf. also Inoue, 1977, Whitman, 1979.) His examples (35a-c) are shown below as (19a-c).

(19)a. Bill-ga John-wa [__ gakkoo-de Mary-ni kisusita
↑ -nom -top ┘ school-at -to kissed

koto]-o Jane-ni osieta
fact -acc -to told

(John told Jane that Bill had kissed Mary at school)

b. Mary-ni John-wa [Bill-ga gakkoo-de __ kisusita koto]-o

Jane-ni osieta

c. Gakkoo-de John-wa [Bill-ga __ Mary-ni kisusita koto]-o

Jane-ni osieta

I agree with Miyara's judgement that (19c) is somewhat worse than (19b).[12] The judgement is delicate since (19b) and (19c) are both far from perfect, probably due to the fact that both involve movement out of a complex NP. Nevertheless, a contrast seems to exist. However, it is not clear to me that this particular contrast is a significant one. Examples such as the following, it seems to me, are at worst only marginal:

(20)a. Gakkoo-de$_i$ John-ga [$_S$,Bill-ga $\underline{t}_i$ Mary-ni kisusita to]
school-at -nom -nom -to kissed COMP

omotte iru (koto)
think fact

(John thinks that Bill kissed Mary at school)

b. Kayoobi-ni$_i$ John-ga [$_S$,Mary-ga $\underline{t}_i$ kuru to] omotte iru
Tuesday-on -nom -nom come COMP think

(koto)
fact

(John thinks that Mary is coming on Tuesday)

c. Kono heya-de$_i$ John-ga [$_S$, Mary-ga $\underline{t}_i$ Bill-ni au to]
this room-in -nom -nom -to meet COMP

omotte iru (koto)
think fact

(John thinks that Mary is meeting Bill in this room)

If fact, the following example seems to me to be ambiguous between the reading where the sentene-initial adverb is interpreted with the matrix clause and the one in which the adverb is interpreted with the embedded clause:[13]

(21) Sono seki-de John-ga [$_S$, Mary-ga Bill-no waruguti-o
that meeting-at -nom -nom -gen ill-remarks-acc

itta to] syutyoosita (koto)
said COMP insisted fact

(John insisted that Mary spoke ill of Bill at that meeting)

Miyara's contrast seems to come out better when we consider the "long-distance" scrambling of "true adjuncts." The following example is somewhat worse than those in (20):

(22)??/?*Sono riyuu-de$_i$ Mary-ga [$_S$, Bill-ga $\underline{t}_i$ kubi-ni natta
that reason-for -nom -nom was fired

to] omotte iru (koto)
COMP think fact

(Mary thinks that Bill was fired for that reason)

As shown below, "long-distance" scrambling of a "true

adjunct" in some cases results in complete ungrammaticality.

(23)a. Mary-ga [$_S$,John-ga riyuu-mo naku sono
-nom -nom reason-even without that

setu-o sinzite iru to] omotte iru (koto)
theory-acc believe COMP think fact

(Mary thinks that John believes in that theory without any reason)

b.*Riyuu-mo naku$_i$ Mary-ga [$_S$,John-ga $\underline{t}_i$ sono setu-o

sinzite iru to] omotte iru (koto)

(24)a. Mary-wa [$_S$,Bill-ga naze kubi-ni natta to] omotte iru no
-top -nom why was fired COMP think

(Why does Mary think [that Bill was fired $\underline{t}$])

b.*Naze$_i$ Mary-wa [$_S$,Bill-ga $\underline{t}_i$ kubi-ni natta to] omotte iru no

Thus, Miyara's claim seems to be supported by the behavior of "true adjuncts" -- "long-distance" preposing is not completely free and seems more restricted than clause-internal scrambling.

The facts discussed above pose an interesting question: why is it that "long-distance" preposing of "true adjuncts" is restricted in this way? But whatever the answer to this question turns out to be, it seems clear that the facts discussed above do not by themselves show that "long-distance" preposing is to be treated separately from

clause-internal scrambling. First of all, as is mentioned also in Hasegawa (1984), "long-distance" relativization of "true adjuncts" seems impossible. (Cf. also Inoue, 1976b.)

Compare the following examples with (20), (24):[14]

(25)a. Sigatu yooka-ga [$_{NP}$[$_{S}$John-ga [$_{S}$,Mary-ga $\underline{e}_i$ kaette
April 8th -nom -nom -nom returning

kuru to] itte ita] hi_i]-desu
come COMP saying was day cop.

(April 8th is the day on which John was saying [that Mary was coming back $\underline{t}$])

b. Koko-ga [$_{NP}$[$_{S}$kimi-ga [$_{S}$,dono eiga-ga $\underline{e}_i$ zyooeisarete
here-nom you -nom which movie-nom being shown

iru ka] osiete kureta] $eigakan_i$]-desu
is Q teach (for me) theater -cop.

(Lit. This is the movie theater where you told me [which movie is being shown $\underline{t}$])

(26)a. Sore-ga [$_{NP}$[$_{S}$boku-ga $\underline{e}_i$ [$_{S}$,kimi-ga kuru beki-da to]
that-nom I -nom you -nom come should COMP

itta] $riyuu_i$]-desu
said reason -cop.

(That is the reason why I said [that you should come] $\underline{t}$)

b.*Sore-ga [$_{NP}$[$_{S}$boku-ga [$_{S}$,kimi-ga $\underline{e}_i$ kuru beki-da to]
that-nom I -nom you -nom come should COMP

itta] $riyuu_i$]-desu
said reason -cop.

(That is the reason why I said [that you should come $\underline{t}$])

(27)a. Sore-ga $[_{NP}[_{S}$boku-ga e_i Taroo-ni $[_{S'}$Hanako-ga sono
that-nom I -nom -to -nom that

mondai-o toku beki-da to] tutaeta] hoohoo$_i$]-desu
problem-acc solve should COMP notified method -cop.

(That is the way in which I notified Taro [that Hanako should solve that problem] t)

b.*Sore-ga $[_{NP}[_{S}$boku-ga Taroo-ni $[_{S'}$Hanako-ga e_i sono
that-nom I -nom -to -nom that

mondai-o toku beki-da to] tutaeta] hoohoo$_i$]-desu
problem-acc solve should COMP notified method -cop.

(That is the way in which I notified Taro [that Hanako should solve that problem t])

The relative head can be construed with a clause embedded within the relative clause as an adverbial of time or place, as shown in (25). But as shown in (26)-(27), when the relative head is riyuu (reason) or hoohoo (method), it can only be associated with the relative clause as a whole, and not with a clause embedded inside the relative clause. Thus, "long-distance" relativization seems more restricted than "short-distance" relativization. However, it seems certainly too hasty to conclude on the basis of (26)-(27) that "short-distance" relativization and "long-distance" relativization involve different rules, although such a possibility cannot be precluded a priori.

Similarly, PP topicalization in English (or PP preposing)

seems to share some properties with "long-distance" preposing. Compare the following examples with (20), (22):

(28)a. On Tuesday, I think [that John came t]

b.??For that reason, I think [that John came t]

It is not clear that (28b) is ungrammatical. But it seems a little more difficult than (28a). Also, compare the examples in (23) with those in (29).

(29)a. Mary thinks [that John believes it without any reason]

b.*Without any reason, Mary thinks [that John believes it t]

Thus, PP topicalization seems to be exactly like "long-distance" preposing with respect to the preposing of "true adjuncts." But we certainly cannot conclude on the basis of (28)-(29) that there are two distinct topicalization (or PP preposing) rules in English, one "short-distance" and the other "long-distance."

Let us consider one more example, which was suggested to me by James Higginbotham.

(30)a. It is for no reason that Mary believes [that John was fired] t

b.*It is for no reason that Mary believes [that John was fired t]

For some reason, for no reason in (30) cannot be associated

with the most deeply embedded sentence. This problem, as far as I know, does not have a trivial syntactic solution and provides us with an interesting problem. But again, the contrast in (30) does not show that (30a) is generated by a rule distinct from the one responsible for (31).

(31) It is this book that Mary thinks [that John should read t]

As we saw above, Miyara's contrast provides us with an interesting problem, for which I do not have any interesting solution to offer at this point.[15] However, if my argument is valid, then the facts concerning the "long-distance" preposing of adverbials do not show that "long-distance" preposing and clause-internal scrambling should be treated separately, and hence, that scrambling is clause-bound. What they seem to show instead is a remarkable similarity between "long-distance" preposing of PPs in Japanese and PP topicalization (PP preposing) in English, or possibly, a similarity between scrambling in Japanese and topicalization in English.

3.1.2.2.2 Multiple "Long-Distance" Scrambling

So far, I have discussed cases of "rightward movement" and adjunct preposing, where "long-distance" preposing seems more restricted than clause-internal scrambling. I argued

that the relevant facts do not show that "long-distance" preposing should be treated separately from clause-internal scrambling. More specifically, I suggested that the illicit cases of "long-distance" preposing are to be ruled out on independent grounds, and hence, do not constitute evidence against Harada's hypothesis that scrambling is not clause-bound.

It seems to me that the same can be said of the following example from Inoue (1977):

(32)a. Boku-wa kinoo-made [$_S$, zyuugoniti-ni
I -top yesterday-until fifteenth -on

undookai-ga aru to] omotte ita
athletic meeting-nom be COMP thinking was

(I was thinking until yesterday that the athletic meeting was going to be held on the fifteenth)

b.[?]*Zyuugoniti-ni$_i$ boku-wa kinoo-made [$_S$, t_i undookai-ga

aru to] omotte ita

(Inoue, 1977, p.197)

Inoue discusses this pair of examples independently of the issue of whether scrambling is clause-bound or not, but as a possible problem for Harada's analysis of scrambling. It is not clear to me that (32b) is fully ungrammatical. But I agree with Inoue that it is far from perfect. However, the marginality of this example seems to be due to the fact that

a time adverbial is scrambled out of the embedded clause when the matrix clause also has a time adverbial. (32b) without kinoo-made (until yesterday) is in fact quite acceptable.

(33) Zyuugoniti-ni$_i$ boku-wa [$_S$, t_i undookai-ga aru to] omotte ita

(I thought that the athletic meeting was going to be held on the fifteenth)

A similar fact can be found in English. As Andrew Barss (personal communication) points out, (35b) is much less acceptable than (34).

(34) On Tuesday, John said [that Mary was coming t]

(35)a. John said [that Mary was coming on Tuesday] yesterday

b.?*On Tuesday, John said [that Mary was coming t] yesterday.

It is not clear to me that the contrast between (35a) and (35b) is a grammatical fact. But even if it is, this does not mean that a rule of (PP) topicalization, or PP preposing must be formulated so as to account for this contrast.

As far as I know, the same point can be made on most, if not all, of the ungrammatical examples with "long-distance" preposing discussed in the literature. That is, those examples are to be ruled out on independent grounds and

hence, do not show that there is an independent rule for "long-distance" preposing which is more restricted than scrambling. For example, Muraki (1979) and Miyara (1982) both state that "long-distance" preposing does not apply iteratively, and Muraki in particular takes this as evidence that it "cannot be collapsed with Scrambling" (p.375).[16] Miyara's example is shown below.

(36) *Mary-ni Bill-ga John-wa [__ gakkoo-de __ kisusita
-to -nom -top school-at kissed

koto]-o Jane-ni osieta
fact -acc -to told

(John told Jane that Bill had kissed Mary at school)

Miyara gives "??" to this example. But according to my judgement, it is completely ungrammatical. Furthermore, it is not clear that the ungrammaticality of (36) can be attributed to Subjacency (or complex NP constraint), since this example is far worse than (19b), which is repeated below as (37).

(37)??/?* Mary-ni$_i$ John-wa [Bill-ga gakkoo-de t_i kisusita
-to -top -nom school-at kissed

koto]-o Jane-ni osieta
fact -acc -to told

(John told Jane that Bill had kissed Mary at school)

Hence, I believe that Miyara's point is valid: When we consider examples like (36), it indeed seems that multiple "long-distance" preposing is impossible. The following is another example that seems to support Miyara's point.

(38)*John-ni$_i$ sono hon-ga$_j$ Mary-ga [$_S$, $\underline{t}_j$ $\underline{t}_i$ akueikyoo-o
-to that book-nom -nom bad influence-acc

ataeta to] omotte iru (koto)
gave COMP think fact

(Mary thinks that that book gave bad influence to John)

However, it is not clear to me that multiple "long-distance" preposing is in general impossible. We have already seen that there are grammatical examples with multiple "long-distance" preposing. The relevant example, (7), is repeated below as (39).

(39)a. Mary-ga [$_S$, John-ga Bill-ni sono hon -o watasita to]
-nom -nom -to that book-acc handed COMP

omotte iru (koto)
think fact

(Mary thinks that John handed that book to Bill)

b. Bill-ni$_i$ sono hon-o$_j$ Mary-ga [$_S$, John-ga $\underline{t}_i$ $\underline{t}_j$

watasita to] omotte iru (koto)

c. Sono hon-o$_j$ Bill-ni$_i$ Mary-ga [$_S$, John-ga $\underline{t}_i$ $\underline{t}_j$

watasita to] omotte iru] (koto)

A few more examples of a similar kind are listed below.

(40)a. Asita$_i$ gakkoo-ni$_j$ John-ga [$_S$, Mary-ga $\underline{t}_i$ $\underline{t}_j$ kuru daroo
tomorrow school-to -nom -nom come will

to] omotte iru (koto)
COMP think fact

(John thinks that Mary will come to school tomorrow)

b. Bill-ni$_i$ sono hon-o$_j$ Mary$_k$-ga [$_S$, $\underline{pro}_k$ $\underline{t}_i$ $\underline{t}_j$
-to that book-acc -nom

yomasetai to] omotte iru (koto)
read-make-want COMP think fact

(Mary thinks that she wants to make Bill read that book)

The examples in (39b-c) and (40) are awkward, but it seems to me that they are completely grammatical. Given these examples, it seems reasonable to assume that multiple "long-distance" preposing is possible, and that examples such as those in (36) and (38) are ruled out on independent grounds.

The discussion above naturally leads us to the question of why multiple "long-distance" preposing is impossible in (36) and (38). One clear difference between those examples and the grammatical ones in (39)-(40) is that only in the former, is a subject NP preposed. Thus, we can hypothesize at this point that subject NPs are not subject to "long-distance" preposing. In fact, (41) seems to be better

than (38).

(41)??John-ni$_i$ akueikyoo-o$_j$ Mary-ga [$_S$,sono hon -ga
-to bad influence-acc -nom that book-nom

$\underline{t}_i$ $\underline{t}_j$ ataeta to] omotte iru (koto)
gave COMP think fact

(Mary thinks that that book gave bad influence to John)

(41) is quite marginal for some reason, but it is still far better than (38). And this is what we expect if the ungrammaticality of (38) is due to the preposing of a subject NP. Furthermore, we find ungrammatical examples such as the following:

(42)a.*Sono okasi-ga$_i$ John-ga [$_S$,$\underline{t}_i$ oisii to]
that candy-nom -nom tasty COMP

omotte iru (koto)
think fact

(John thinks that that candy is tasty)

b.*Sono hon-ga$_i$ John-ga [$_S$,$\underline{t}_i$ yoku urete iru to]
that book-nom -nom well selling COMP

omotte iru (koto)
think fact

(John thinks that that book is selling well)

These examples do not involve multiple "long-distance" preposing, but only the preposing of the embedded subject to the sentence-initial position. If the ungrammaticality of

(36), (38) is due not to multiple preposing but to the preposing of the subject, then the ungrammaticality of the examples in (42) is expected.

As we saw above, there are examples which indicate that multiple "long-distance" preposing is possible. Thus, it seems difficult to maintain that examples such as (36) show that "long-distance" preposing should be treated separately from clause-internal scrambling. On the basis of the constrast between the examples in (36), (38) and those in (39b-c), (40), I have hypothesized in this section that subject NPs are not subject to "long-distance" preposing. Unfortunately, this hypothesis is very difficult to check since there are a number of complicating factors. In the following section, I will discuss those complicating factors, and examine the hypothesis in question in more detail.

3.2 Scrambling of the Subject

3.2.1 Some Descriptive Problems

In the preceding section, I have hypothesized that subject NPs are not subject to "long-distance" preposing. The

purpose of this section is to discuss some possible descriptive problems associated with this hypothesis. Such discussion is called for, since, as we will see directly, there are a number of complications concerning the scrambling of the subject.

First, it should be noted that it is very easy to find an apparent counter-example to the hypothesis in question. In fact, one of the examples Harada (1977) cites to show the non-clause-boundedness of scrambling seems to involve "long-distance" preposing of a subject NP. His example is shown below.

(43)a. Boku-wa [$_S$, kono giron-ga itiban settokuteki-da
I -top this argument-nom most convincing-cop.

to] omou
COMP think

(I think that this argument is the most convincing one)

b. Kono giron-ga boku-wa itiban settokuteki-da to omou

(Harada, 1977, p.100)

A similar example is found in Haig (1976).

(44)?Ano hito-ga watasi-wa [Tookyoo-ni itta to
that person-nom I -top -to went COMP

iu koto]-o kiita
say fact-acc heard

(I heard people say that that person went to Tokyo)

(Haig, 1976, p.370)

We have already seen Miyara's example, (19a), which is repeated below in (45).

(45)??Bill-ga John-wa [gakkoo-de Mary-ni kisusita
-nom -top school-at -to kissed

koto]-o Jane-ni osieta
fact-acc -to told

(John told Jane that Bill had kissed Mary at school)

(45) is certainly marginal, but I agree with Miyara that it is not completely ungrammatical.

However, there is a reason that the examples in (43)-(45) cannot be taken immediately as evidence that a subject NP can be preposed "long-distance." In (43)-(45), the matrix subject appears with the topic marker wa. And it is suggested in Muraki (1979), Tonoike (1980) that a topic can be "down-graded" into an embedded clause. In fact, they both suggest specifically that (43b) can be derived by the "down-grading" of the topic boku-wa (I-top). It is of

course not clear that we want to have a rule of "down-grading," but the phenomenon at issue is probably more appropriately characterized as a parenthetical usage of a topic. Here, I am not aware of any clear evidence that a topic can appear in a sentence parenthetically, and it is not clear in what context a parenthetical topic can appear. Nevertheless, Muraki's and Tonoike's hypothesis seems to be in accord with the intuition of native grammarians that topic phrases in Japanese are in some sense adverbial in nature. In fact, the topic marker wa is called huku-zyosi (adverbial Case particle) in traditional Japanese grammer. And if the topic phrases in (43b), (44) and (45) can be analyzed as being in the embedded clause parenthetically, then there is no reason to suppose that the embedded subject is preposed to the sentence-initial position in these examples.

If we are to avoid the complication mentioned above, then we must examine whether the embedded subject can be preposed across the matrix subject when the latter is marked by the nominative Case marker ga. If we substitute ga for wa in (44)-(45), for example, then the resulting sentences are in fact ungrammatical. The counterpart of (45) is shown in (46).

(46)*Bill-ga John-ga [gakkoo-de Mary-ni kisusita koto]-o
-nom -nom school-at -to kissed fact -acc

Jane-ni osieta
-to told

(John told Jane that Bill had kissed Mary at school)

However, as Miyara (1982) points out, examples such as (46) may be ruled out on independent grounds. Kuno (1980a), discussing examples such as (47), notes that there is some sort of anti-ambiguity device operative at the performance level:

(47) John-ga Bill-ni Mary-ni hana-o todoke-saseta (koto)
-nom -to -to flower-acc deliver-made fact

(John made Bill deliver flowers to Mary)

In (47), both the causee and the indirect object of todoke (deliver) are marked by ni (to). Thus, given the freedom in word-order, we expect (47) to be ambiguous, i.e., we expect that either one of Bill and Mary can be interpreted as the causee as long as the other one is interpreted as the indirect object of todoke. Nevertheless, the only possible interpretation of (47) seems to be the one in which Bill is understood to be the causee. Note that the direct object of todoke can precede the causee, as shown below.[17]

(48) John-ga hana-o Bill-ni Mary-ni todoke-saseta (koto)
-nom flower-acc -to -to deliver-made fact

(John made Bill deliver flowers to Mary)

Thus, it is not that the complements of todoke in general cannot precede the causee. Given these facts, Kuno (1980a) suggests a "crossing over constraint as an anti-ambiguity device," which he states as follows:

(49) In general, the greater the likelihood of ambiguous interpretation, the more difficult it is to switch the word order of two NPs marked with the same grammatical formative (e.g., particle).

If the causee marked by ni precedes the complements of todoke (deliver) in the "unmarked word-order" of (47), then (49) prevents the indirect object of todoke from preceding the causee at the surface level. Thus, given (49), the non-ambiguity of (47) is expected. And if (49) is correct, then it rules out (46) also, since this example is derived by preposing the embedded subject Bill-ga over the matrix subject John-ga.[18]

As we saw above, the parenthetical usage of a topic and the "anti-ambiguity device" in (49) make it difficult to check whether subject NPs are subject to "long-distance" preposing. However, it still seems possible to construct

examples that directly bear on this issue. As Kuno (1980a) explicitly notes, (49) is intended to be an "anti-ambiguity device at the performance level." Thus, we expect that "two NPs marked by the same grammatical formative" can be scrambled as long as the sentence is disambiguated by the semantics in the first place. And in fact, sentences such as the following are at worst marginal under the reading where Mary is the causee:[19]

(50)?John-ga [Bill-no ie]-ni Mary-ni hana-o
-nom -gen house-to -to flower-acc

todokesaseta (koto)
deliver-made fact

(John made Mary deliver flowers to Bill's house)

A similar example is shown below.

(51)a. Mary-ga John-ni [Bill-no ie]-ni ikaseta (koto)
-nom -to -gen house-to go-made fact

(Mary made John go to Bill's house)

b.?Mary-ga [Bill-no ie]-ni John-ni ikaseta (koto)

(50) and (51b), it seems to me, are only marginal, while it is extremely difficult to interpret Mary as the causee in (47). Thus, if (46) is out only because of (49), then we expect that the embedded subject can be preposed over the matrix subject when it is clear from the semantics that the

preposed NP is to be construed as the subject of the embedded clause. But we have already seen in the preceding section that this is not the case. The relevant examples (42a-b) are repeated below in (52).

(52)a.*Sono okasi-ga$_i$ John-ga [$_S$,$\underline{t}_i$ oisii to]
that candy-nom -nom tasty COMP

omotte iru (koto)
think fact

(John thinks that that candy is tasty)

b.*Sono hon-ga$_i$ John-ga [$_S$,$\underline{t}_i$ yoku urete iru to]
that book-nom -nom well selling COMP

omotte iru (koto)
think fact

(John thinks that that book is selling well)

I will add a few more similar examples:

(53)a.*Kono giron-ga$_i$ John-ga [$_S$,$\underline{t}_i$ omosiroi to]
this argument-nom -nom interesting COMP

omotte iru (koto)
think fact

(John thinks that this argument is interesting)

b.*Kono giron-ga$_i$ Mary-ga John-ni [$_S$,$\underline{t}_i$ okasii to]
this argument-nom -nom -to strange COMP

itta (koto)
said fact

(Mary said to John that this argument is funny)

In all of the examples in (52)-(53), it is clear from the semantics that the sentence-initial nominative NP is to be construed as the subject of the embedded clause. Candies, books, and arguments neither think nor speak. Nevertheless, these examples are all ungrammatical. Hence, it seems that subject NPs are in fact not subject to "long-distance" preposing, as we hypothesized in the preceding section.

We have seen in this section that despite the complications, there is evidence that subject NPs, in general, cannot be preposed "long-distance." It should be noted here that there are some examples that seem to be exceptions to this generalization. Let us consider, for example, Harada's example in (43b), which is repeated below as (54).

(54) Kono giron-ga boku-wa itiban settokuteki-da
this argument-nom I -top most convincing -cop.

to omou
COMP think

(I think that this argument is the most convincing one)

As is already pointed out in Tonoike (1980), (54) becomes unacceptable when ga is substituted for the wa on boku.

(55)*Kono giron-ga boku-ga itiban settokuteki-da to omou

However, the non-scrambled version of (55) itself is for

some reason extremely marginal, although it is probably not ungrammatical.

(56) Boku-ga [$_S$,kono giron-ga itiban settokuteki-da to] omou

And if we substitue John for boku in (55) and put the main verb into its progressive/stative form, the resulting sentence is only marginal at least for some speakers.

(57)??Kono giron-ga John-ga itiban settokuteki-da to
omotte iru
(John thinks that this argument is the most convincing one)

In the following section, I will propose an account for the fact that subject NPs in general cannot be preposed "long-distance," and speculate on why examples such as (57) are only marginal. There, it will be suggested that (57) is only an apparent exception to our generalization.

3.2.2 Case Marking and Scrambling

We have seen above that subject NPs in general cannot be preposed "long-distance." In what follows, I will try to relate this fact to some properties of Case marking in Japanese. In Section 2.2.1, I will discuss some subject-object asymmetries in Case marking in Japanese.

This section is basically a summary of some parts of Saito (1982a, 1983b). The reader is referred to these works, as well as to Kuroda (1978, 1984), for more detailed discussion on the nature of Japanese Case marking.[20] In Section 2.2.2, I will consider the implications of the discussion in 2.2.1 for scrambling. There, I will point out that given the nature of nominative Case marking in Japanese, we expect not only that subject NPs cannot be preposed "long-distance" but also that they can never be scrambled.

3.2.2.1 Subject-Object Asymmetries in Case Assignment

As we can see in the examples discussed so far, in a "regular" Japanese sentence, the subject NP is marked by the nominative Case marker ga and the object NP by the accusative Case marker o.

(58) John-ga hon -o yonde iru
-nom book-acc reading is

(John is reading a book)

But there are some cases where the relation of grammatical function and Case marker is not as clear. Typical examples of this kind are shown in (59).

(59)a. Dare-ni kore-ga dekiru ka
who-"dat" this-nom can-do Q

b. Dare-ga kore-ga dekiru ka
who -nom this-nom can-do Q

(Who can do this?)

(Kuno, 1973b, p.59)

The prevailing view is that verbals such as dekiru are transitive and mark the object NP with the nominative Case marker ga. (Kuno, 1973a, Shibatani, 1977, 1978. Cf. also Kuroda, 1965b, 1978, 1984.) According to this view, dekiru can have a nominative or "dative" subject.

I argued in 1982a that dare-ni is a PP and kore-ga is the subject in (59a), and that (59b) has the structure shown in (60).[21]

(60) $[_S$Dare-ga $[_S$kore-ga dekiru]] ka

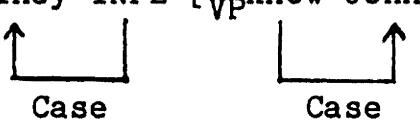
This analysis leads us to an extremely simple description of Japanese Case marking: [NP,S] is marked by the nominative Case marker ga and [NP,VP] is marked by the accusative (objective) Case marker o in general. However, at the same time, there are indications that more has to be said about the nature of Case marking in Japanese. Here, I will present some evidence that in Japanese, objective Case is assigned by the verb to its object, whereas nominative Case

is inherent in that it is not assigned by any element, e.g., INFL.

It is widely assumed that in English, the subject NP is assigned nominative Case by INFL (tense and agreement) and the object NP is assigned objective Case by the verb. (Cf. Chomsky, 1980, 1981, Stowell, 1981a and references cited there.)

(61)a. They know John

b. [$_S$They INFL [$_{VP}$know John]]



However, it seems quite difficult to maintain that subject NPs in Japanese are assigned Case by INFL. Consider the following example:

(62) Yahari, [$_S$natu-ga [$_S$biiru-ga umai]][22]
after all summer-nom beer -nom tasty
(After all, it's during the summer that beer tastes good)

In (62), natu-ga is not an argument of the predicate umai. And as shown in Kuno (1973a, b), there is no upper limit to the number of "non-arguments with nominative Case" in a sentence with a single verbal element. Kuno's most celebrated example is shown below.

(63) [$_S$Bunmeikoku-ga [$_S$dansei-ga [$_S$heikinzyumyoo-ga
civilized country-nom male -ncm average life-span-nom

mizikai]]]
short

(It is in civilized countries that men are such that their average life-span is short)

There are heavy functional/semantic restrictions on the occurrences of "non-argument with nominative Case," and it is not that a non-argument NP can freely appear sentence-initially.[23] For example, the following example is totally unacceptable:

(64)*Sono hon$_i$-ga [$_S$John-ga $\underline{e}_i$ yonda]
that book-nom -nom read

(John read that book)

Nevertheless, the existence of examples such as (62)-(63) indicates that the syntax of Japanese allows "non-arguments with nominative Case," and given this fact, it seems reasonable to suppose that the nominative Case marker ga is not in any sense a phonetic realization of abstract Case. Since Japanese does not have any agreement phenomenon between the subject and the verb, it is not even clear that INFL as a potential Case assigner exists in this language. But even if we have an abstract agreement element in

Japanese, it seems extremely unlikely that this element, or for that matter, a verb, can assign nominative Case to any number of elements across any number of sentence-boundaries.

On the other hand, as far as I know, there is nothing analogous to the facts discussed above with the accusative Case marker o. Furthermore, the passive construction provides us with possible evidence that objective Case is assigned by the verb to its object in Japanese. Let us consider the following examples:

(65)a. John-ga [$_S$, Yamada-ga Tanaka-o korosita to]
-nom -nom -acc killed COMP

omotte iru (koto)
think fact

(John believes that Yamada killed Tanaka)

b. [$_S$, Yamada-ga Tanaka-o korosita to] (ippanni)
-nom -acc killed COMP generally

omowarete iru (koto)
think (passive) fact

(It is (widely) believed that Yamada killed Tanaka)

(65b) is the passive version of (65a).[24] Here, two possible analyses of (65b) immediately come to mind. We may say that the S' complement in (65a) is the object, and that passivization in Japanese is characterized as object --→

subject. According to this hypothesis, the S' in (65b) must be in the subject position. Or alternatively, we may adopt the analysis of examples such as (66b) in Chomsky (1981, p.125).

(66)a. John believes [$_{S'}$ that Mary is a genius]

b. It is believed [$_{S'}$ that Mary is a genius]

It is argued in Chomsky (1981) that passive morphology absorbs objective Case and the subject theta-role. This forces the D-structure object in (67) to move to the subject position, for otherwise, this NP fails to receive Case at S-structure and consequently violates the Case Filter, which is given in (68).

(67) [$_{S}$ e INFL [$_{VP}$ be hit John]] (D-structure)

(68) Case Filter (Chomsky, 1981, p.49)
*NP if NP has phonetic content and has no Case.

Thus, the following contrast is accounted for:

(69)a. John$_i$ was hit t_i

b.*There/It was hit John

In (69a), the D-structure object John is moved to the subject position. Hence, it receives nominative Case from INFL at S-structure, and the sentence is grammatical. On

the other hand, in (69b), John is still in the object position. Here, the passive participle hit does not assign objective Case to its object. Hence, (69b) is in violation of the Case Filter. Let us now consider a D-structure of the following form:

(70) [$_{S}$e INFL [$_{VP}$be believed S']] (D-structure)

Here, despite the fact that believe in its active form is a potential Case-assigner, there is no NP complement in (70) that requires Case. In particular, the S' complement in (70) need not move to the subject position to receive nominative Case from INFL. Hence, the S' complement can stay within VP, and pleonastic it can be inserted into the subject position at S-structure. Thus, examples such as (66b), as opposed to (69b), are possible.

This analysis of (66b), it seems to me, is directly applicable to the Japanese construction exemplified by (65b). According to this analysis, the S' in (65b) may be in the subject position, since nothing prevents the movement of this S' to this position.

(71) [$_{S}$[$_{S'}$Yamada-ga Tanaka-o korosita to]$_{i}$
[$_{VP}$t$_{i}$ omowarete iru]]

Or, the S' may be within the VP. In this case, the subject position is occupied by an expletive null pronoun.

(72) [$_S$pro [$_{VP}$[$_{S'}$Yamada-ga Tanaka-o korosita to]
omowarete iru]]

As far as I know, the verbs that can appear in this construction can all take an NP object instead of an S' complement, when they are in active form. Thus, the Case absorption analysis of (65b) seems to be as plausible as the object → subject analysis.

Given the two possible analyses of (65b) mentioned above, there are some reasons to believe that the Case absorption analysis is the correct one. One of them has to do with the examples in (73) and (74).

(73)a. John-ga [$_{S'}$Mary-ga tensai-da to] omotte iru (koto)
-nom -nom genius-cop. COMP think fact
(John believes that Mary is a genius)

b. John-ga Mary$_i$-o [$_{S'}$pro$_i$ tensai-da to] omotte iru (koto)
-nom -acc
(John believes Mary to be a genius)

(74)a. Mary$_i$-ga John-ni [$_S$,pro$_i$ tensai-da to] omowarete iru (koto)
-nom -by think (passive)

(Mary is believed to be a genius by John)

b.*Mary$_i$-o [$_S$,pro$_i$ tensai-da to] John-ni omowarete iru (koto)
-acc -by think (passive)

As shown in (73), the verb omow (think) appears in the so-called "raising-to-object" construction.[25] The "raised object" in this construction seems to passivize, as shown in (74a). Now, if the S' complement of omow is the object and passivization is characterized by object -→ subject, then it is not clear why (74b) is ungrammatical. According to the object -→ subject hypothesis, (74b) can have the following structure:

(75) Mary$_i$-o [$_S$[$_S$,pro$_i$ tensai-da to]$_j$ [$_{VP}$John-ni t_i t_j
omowarete iru]] (koto)

In (75), the S' is passivized and moved to the subject position, while the "raised object" Mary-o is scrambled to the sentence-initial position. Here, there does not seem to be any problem with the fact that the antecedent of pro, Mary, is in A'-position.[26] Examples such as the following are perfectly grammatical:

(76) $[_S$Mary$_i$-o $[_S[_S$, pro$_i$ tendai-da to$]_j$ $[_S$John-ga $[_{VP}$t$_i$ t$_j$
-acc genius-cop. COMP -nom

omotte iru]]]] (koto)
think fact

(John believes Mary to be a genius)

In (76), both the S' and the "raised object" are scrambled to positions preceding the matrix subject. Thus, given the object → subject analysis, there does not seem to be a trivial account of examples such as (74b).

On the other hand, the ungrammaticality of (74b) can be straightforwardly accounted for under the Case absorption hypothesis. Suppose that (74b) has the following structure, where both the S' and the "raised object" are in their D-structure positions and the matrix subject position is occupied by an expletive pro:

(77) $[_S$pro $[_{VP}$Mary-o S' John-ni omowarete iru]] (koto)

Then, given that passive morphology absorbs objective Case, the object NP Mary in (77) cannot be assigned Case since the matrix verb is in the passive form. Thus, if lexical NPs in the object position can satisfy the Case filter only by virtue of being assigned abstract Case, then (77) is straightforwardly ruled out.[27]

Let us now suppose that Mary-o in (74b) is scrambled out of its D-structure position as in (78).

(78) ...Mary$_i$-o...[...t_i...omowarete iru...]...
think (passive)

Then, Mary-o in (74b) binds a variable in the object position of omoware (think-passive). But in this case, the variable is in violation of the following principle suggested in Chomsky (1981):[28]

(79) Variables must have Case.

Thus, if abstract objective Case is assigned by the verb to its object and passive morphology absorbs the Case-assigning ability of the verb, then (74b) is straightforwardly ruled out, whether Mary-o is in its D-structure position or not.

If the analysis of (74b) suggested above is correct, then we must of course assume that abstract objective Case is assigned by the verb to its object in Japanese. This hypothesis suggests that the accusative Case marker o is in some sense a phonetic realization of the abstract objective Case. (Cf. fn.27.) On the other hand, I argued above that nominative Case is inherent in that it is not assigned by any element. This hypothesis basically states that the distribution of the nominative Case marker ga is determined

solely on contextual grounds, exactly as in the case of genitive Case in English. The hypothesis in question can be formalized in the form of the following filter:

(80) *NP-ga unless the NP is [NP,S].

Thus, according to our hypothesis, the subject NP and the object NP are assigned Case in different ways; only the latter receives abstract Case. If this hypothesis is correct, then we may expect to find further subject-object asymmetries with respect to Case marking. And this prediction seems to be borne out by the so-called "Case marker drop" phenomenon.

Let us first consider the following example:

(81) John kita no
came

(Did John come?)

It has been known that examples such as the one in (81) are perfectly acceptable in the colloquial style. At first sight, it seems that what is missing in this example is the nominative Case marker ga on the subject NP, John. However, it is argued in Kuno (1973b, pp.223-224) that the bare NP in examples like (81) is not the subject but the topic. Kuno's conclusion, in other words, is that the nominative Case

marker is obligatory for the subject, but John in (81) can appear as a bare NP because the topic marker wa is optional. Although this hypothesis may seem somewhat speculative, it is not difficult to find evidence in support of this analysis. For example, consider the following sentences:

(82)a. Dare-ga kita no
Who -nom came

(Who came?)

b.*Dare-wa kita no
-top

c.*Dare kita no

As shown in (82a-b), a wh-phrase can appear as a subject but not as a topic. (Kuno, 1973b, p.27) Thus, Kuno's hypothesis correctly predicts the ungrammaticality of (82c) as opposed to (81).[29]

However, this argument does not extend to cases where the object NP appears without any Case marker. Compare the following examples with those in (82):

(83)a. Nani-o yonderu no
what-acc reading

(What are you reading?)

b.*Nani-wa yonderu no
-top

c. Nani yonderu no

(83b) shows again that a wh-phrase cannot be the topic. Nevertheless, (83c), in contrast with (82c), is perfectly grammatical. Thus, it seems that the object, as opposed to the subject, can appear without an overt Case marker, as is already assumed in Kuno (1973b).[30,31]

Here, given our hypothesis on Case assignment in Japanese, this subject-object asymmetry in the "Case marker drop" phenomenon immediately follows from the Case Filter, which is repeated below in (84).

(84) Case Filter (Chomsky, 1981, p.49)
*NP if NP has phonetic content and has no Case.

Our hypothesis is that in Japanese, objective Case is assigned by the verb to its object, whereas nominative Case is inherent in that it is not assigned by any element. This means that the object of a transitive verb receives abstract Case from the verb, but no abstract Case is assigned to the subject position. Thus, if the subject NP appears without the overt nominative Case marker, it is in violation of the Case Filter since it lacks both overt Case marker and abstract Case. On the other hand, if a bare NP appears in

the object position of a transitive verb, it is assigned abstract Case by the verb. Consequently, it does not need an overt Case marker to satisfy the Case Filter. Thus, given our hypothesis, the contrast between (82c) and (83c) is correctly predicted by the Case Filter. This fact, needless to say, constitutes additional evidence for our hypothesis that in Japanese, the object of a transitive verb is assigned abstract Case by the verb, whereas subject NPs are not assigned abstract Case at all.

3.2.2.2 The Non-Scramblability of the Subject

In Section 2.1, I argued that subject NPs are not subject to "long-distance" scrambling. Some of the relevant examples are repeated below in (85).

(85)a.*Sono okasi-ga$_i$ John-ga [$_S$, $\underline{t}_i$ oisii to] omotte iru (koto)
that candy-nom -nom tasty COMP think fact
(John thinks that that candy is tasty)

b.*Sono giron-ga$_i$ John-ga [$_S$, $\underline{t}_i$ omosiroi to]
that argument-nom -nom interesting COMP
omotte iru (koto)
think fact
(John thinks that that argument is interesting)

Note that given the discussion on Case marking in the preceding section, this fact is now totally expected. It

was argued there that abstract Case is not assigned to the subject position in Japanese. If this conclusion is correct, then in the examples in (85), the variable in the embedded subject position is not assigned Case. Thus, these examples are in violation of the condition in (79), which is repeated below in (86).

(86) Variables must have Case.

Given our hypothesis on Japanese Case marking and (86), we predict in fact that subject NPs cannot undergo scrambling in general. That is, we predict that subject NPs cannot undergo not only "long-distance" scrambling but also "short-distance" scrambling. And there is evidence which suggests that this is a correct prediction. Recall now that one of the arguments for scrambling discussed in Chapter 2 was based on the interaction between "quantifier floating" and scrambling. The relevant examples for this argument, which is originally due to Kuroda(1980, 1983) and Haig (1980), are repeated below in (87) and (88).

(87)a. Sannin-no gakusei-ga sake-o nondeiru
3 person-gen student-nom sake-acc drinking

(Three students are drinking sake)

b. Gakusei-ga sannin sake-o nondeiru

c.*Gakusei-ga sake-o sannin nondeiru

(88)a. John-ga sanbon-no sake-o motte kita
-nom 3 bottle-gen sake-acc came-with

(John came with three bottles of sake)

b. John-ga sake-o sanbon motte kita

c. Sake-o John-ga sanbon motte kita

As shown in (87), a quantifier can "float out" of an NP, but not across another NP argument. Here, (88c) is an apparent counterexample to this generalization, since a "floating" quantifier is related to the sentence-initial object across the subject NP in this sentence. But as noted in Chapter 2, if the object NP in (88c) is moved by scrambling to the sentence-initial position, we correctly predict that this sentence should be grammatical. According to the scrambling analysis, the structure of (88c) should be as follows:

(89) $[_S$Sake-o$_i$ $[_S$John-ga $[_{VP}$t$_i$ sanbon motte kita]]]

Given that a "floating" quantifier cannot be related to an NP across another NP argument, sanbon (three bottles) in (89) cannot be directly related to sake-o (sake-acc) in the sentence-initial position. However, the quantifier can be related to the trace in the object position, and hence, can be related to the sentence-initial NP indirectly through the trace. Thus, the grammaticality of (88c) is accounted for.

Given this account of (88c), which is originally due to Sige-Yuki Kuroda and John Haig, a question still remains as to the ungrammatical status of (87c). If (87c) has the following structure, we naturally expect it to be ungrammatical:

(90) $[_S$Gakusei-ga $[_{VP}$sake-o sannin nonde iru]]

The quantifier sannin (three people) simply cannot be related to the subject because of the intervening NP. However, as we saw above, multiple scrambling is possible in Japanese. The following example is perfectly grammatical:

(91) $[_S$Sono hon-o_i $[_S$John-ni_j $[_S$Mary-ga $[_{VP}t_j$ t_i watasita]]]]
that book-acc -to -nom handed

(koto)
fact

(Mary handed that book to John)

Thus, there does not seem to be any obvious reason that (87c) cannot have the following structure:

(92) $[_S$Gakusei-ga_i $[_S$sake-o_j $[_S t_i$ sannin $[_{VP}t_j$ nonde iru]]]]

And if (92) is a possible structure for (87c), then there is no reason to expect that this sentence, as opposed to (88c), should be ungrammatical. The quantifier sannin can be

related to the sentence-initial NP through the trace t_i. Hence, if Kuroda's and Haig's analysis of the examples in (87)-(88) is correct, then (92) must be ruled out on independent grounds as a possible representation for (87c).

But here, if subject NPs cannot be scrambled at all, then we do not expect (92) to be a possible representation of a sentence in the first place. Thus, our hypothesis on Japanese Case marking makes Kuroda's and Haig's analysis of (87)-(88) complete. (89) is a possible representation for (88c), since the trace in (89) is assigned abstract Case and hence, observes the condition in (86). On the other hand, (92) is not a possible representation for (87c), since the trace t_i in (92) lacks Case, and hence, is in violation of (86).

The discussion on Case marking in the preceding section seems to have further consequences for the analysis of the scrambling facts. It was noted above that in Japanese, non-arguments can appear with the nominative Case marker ga. The relevant examples (62) and (63) are repeated below in (93).

(93)a. Yahari, [$_S$natu-ga [$_S$biiru-ga umai]]
after all summer-nom beer-nom tasty

(after all, it's during the summer that beer tastes good)

b. [$_S$Bunmeikoku-ga [$_S$dansei-ga [$_S$heikinzyumyoo-ga
civilized country-nom male -nom average-life-span-nom

mizikai]]]
short

(It is in civilized countries that men are such that their average life-span is short)

It is argued in Shibatani & Cotton (1976), Hoji (1980), Saito (1982a) that "non-arguments with nominative Case" are base-generated as such. That is, in Japanese, the following structure can be base-generated:

(94) [$_S$NP-ga [$_S$NP-ga ...]]

Following Kuroda (1984), I will henceforth refer to "non-arguments with nominative Case" as <u>major subjects</u>.

As was also noted above, there are heavy functional/semantic restrictions on the occurrences of major subjects. (Cf. fn.23.) Kuno (1973a,b) proposes a descriptive generalization that only NPs modifying the subject and locative phrases in existential sentences can become a major subject.

(95)a. [$_S$[$_{NP}$Nihon-no dansei]-ga tanmei-desu]
Japan-gen male -nom short-life-span-cop.

(Japanese men have a short life-span)

b. [$_S$Nihon-ga [$_S$dansei-ga tanmei-desu]]

(It is in Japan that men have a short life-span)

(96)a. [$_S$Los Angeles-ni nihonzin-ga ooi]
-in Japanese-nom many

(There are many Japanese people in Los Angeles)

b. [$_S$Los Angeles-ga [$_S$nihonzin-ga ooi]]

(It is Los Angeles where there are many Japanese people)

In fact, Kuno proposes to derive the (b) sentences in (95)-(96) from the corresponding (a) sentences transformationally.

Kuno's generalization seems to me to be descriptively adequate to a large extent. Examples such as the following are in fact unacceptable:

(97) *[$_S$Sono hon$_i$-ga [$_S$John-ga $\underline{e}_i$ yonda]] (=(64))
that book-nom -nom read

(It is that book that John read)

However, as noted in Hoji (1980), Saito (1982a), there are instances of major subjects that do not fall under Kuno's generalization. For example,

(98) ?Kono syu-no eiga-ga [$_S$kodomo-ga e_i yorokobu]
this kind-gen movie-nom child-nom enjoy

(It is this kind of movie that children enjoy)

(99) (Zinbunkagaku-no naka-de-wa) gengogaku-ga itiban
humanities-gen within-top linguistics-nom most

[$_S$sotugyoo-ga muzukasii]
graduation-nom difficult

(Among the human sciences, linguistics is the field where it is difficult to get a degree)

The object NP appears as the major subject in (98), and in (99), the major subject gengogaku-ga does not bind any position in the sentence following it. The existence of examples such as (99) strongly supports the base-generation analysis of major subjects, and Shibatani & Cotton's hypothesis that examples such as (97) are to be excluded in semantics/pragmatics and not in syntax.

Once we assume that major subjects can be base-generated sentence-initially, it will be interesting to see what implications this assumption has for our discussion on the scramblability of subject NPs. I have argued in the preceding sections that subject NPs can never be scrambled because of the following principle:

(100) Variables must have Case. (=(86))

According to our hypothesis, the following configuration is excluded since the variable $\underline{t}_i$ lacks Case:

(101) *[$_S$NP-ga$_i$ [$_S$NP-ga [$_S$,[$_S\underline{t}_i$ VP] COMP] ...]]

However, given that there are examples like (99), the following configuration seems to be allowed syntactically:

(102) [$_S$NP-ga$_i$ [$_S$NP-ga [$_S$,[$_S\underline{pro}_i$ VP] COMP] ...]]

The sentence-initial NP-ga is a base-generated major subject coindexed with an empty pronoun in the embedded subject position. Thus, the examples of subject scrambling discussed in the preceding sections must all be grammatical as long as the sentence-initial NP-ga is interpreted as a base-generated major subject and not as a scrambled embedded subject.

The effect of the fact mentioned above to our discussion on the scramblability of subject NPs should be minimal as long as Kuno's (1973a,b) descriptive generalization holds to a large extent. Kuno's generalization can be restated in our terms as follows:

(103) The semantics/pragmatics of a major subject allows a sentence-initial NP-ga to be interpreted as a major subject only when:
(i) there is a corresponding sentence in which the sentence-initial NP-ga appears as an NP modifying the subject, or
(ii) the sentence in which the NP-ga appears is an existential sentence, and there is a corresponding sentence in which the NP specifies a location.

We have seen above that there are counterexamples to this generalization. But since such counterexamples are limited, we can safely assume for the purpose of our discussion that sentences with the configuration in (102) are in general excluded semantically/pragmatically. Thus, examples with the following configuration are ruled out in any event:

(104) $[_S$NP-ga$_i$ $[_S$NP-ga $[_{S'}[_S e_i$ VP] COMP] ...]]

If the sentence-initial NP-ga is moved to that position by scrambling and the empty category is a variable, then (100) is violated. If the sentence-initial NP-ga is a base-generated major subject and the empty category is an empty pronoun, then the example will be ruled out on semantic/pragmatic grounds. And in fact, we have seen in the preceding sections that examples with the configuration in (104) are generally unacceptable.

However, at the same time, since there are some

counterexamples to Kuno's generalization as shown above and Kuno's generalization is not a rigid one, it is not surprising if we find some exampels with the configuration in (104) where the sentence-initial NP-ga can be interpreted as a major subject. Recall now that there was an example which seemed problematic for our generalization that subject NPs can never be scrambled. The exmaple in question, (57), is repeated below as (105).

(105) ??Kono giron$_i$-ga John-ga [$_S$, e$_i$ itiban settokuteki-da
this argument-nom -nom most convincing-cop.

to] omotte iru
COMP think

(John thinks that this argument is the most convincing one)

If kono giron-ga is scrambled to the sentence-initial position and e is a variable. we expect (105) to be completely ungrammatical. But as noted in Section 2.1, this example is only marginal. Given the discussion on major subjects, we are naturally led to the speculation that kono giron-ga in (105) may be a base-generated major subject. This suggestion is not much more than a pure speculation at this point, since the exact semantic/pragmatic condition on major subjects is not well understood.[32] However, there is evidence that this speculation may be correct.

It was noted in Section 1.1 and in Chapter 2 that scrambling does not allow resumptive pronouns. Some relevant examples ((9a-b)) are repeated below:

(106)a. *Sono hon_i-o [$_S$John-ga [$_S$,Mary-ga $sore_i$-o
that book-acc -nom -nom it -acc

katta to] omotte iru] (koto)
bought COMP think fact

(John thinks that Mary bought that book)

b. *Sono $mura_i$-ni [$_S$John-ga [$_S$,Bill-ga $soko_i$-ni
that village-in -nom -nom there-in

sunde iru to] omotte iru] (koto)
reside COMP think fact

(John thinks that Bill lives in that village)

I proposed in Chapter 2 to state the descriptive generalization as follows:

(107) An NP in an adjoined position must bind a variable.

(106b) indicates that not only an NP but also a PP in an adjoined position must bind a trace. However, as noted in fn.22, major subjects are exceptions to the generalization in (107).[33] The following examples are marginal, but are far better than (106a-b):

(108)a. ??Sono hon_i-dake-ga [$_S$ $sono_i$ hyoosi-ga torete iru]
that book-only-nom its cover -nom ripped-off

(It is only that book that its cover is ripped off)

b. ??Los $Angeles_i$-ga [$_S$ nihonzin-ga oozei $soko_i$-ni
-nom Japanese-nom many there-in

sunde iru]
reside

(Lit. It is Los Angeles where there are many Japanese residing there)

Hence, if the sentence-initial NP-ga in (105) is a major subject, then we should predict that a resumptive pronoun is marginally allowed in this sentence. And in fact, this prediction is borne out as shown below.

(109) ??Kono $giron_i$-ga [$_S$ John-ga [$_S$, $sore_i$-ga itiban
this argument-nom -nom it -nom most

settokuteki-da to] omotte iru
convincing-cop. COMP think

(Lit. It is this argument that John thinks that it is the most convincing one)

Thus, at this point, it seems that kono giron-ga in (105) is indeed a major subject, and hence, that this example is not problematic for our generalization that subject NPs can never be scrambled.

3.3 Some Speculations on the Nature of Scrambling

So far in this chapter, I argued that scrambling is not clause-bound. In Section 1, I argued that "long-distance" preposing has the basic properties of scrambling, and that there is very little reason, if any, that it cannot be treated as a subcase of scrambling. In Section 2, I argued that subject NPs can never be scrambled, and that this fact is to be attributed to the nature of nominative Case marking in Japanese. In this section, assuming the conclusions obtained in the preceding sections, I will make some speculations on the nature of scrambling. Section 3.1 is concerned with the exact characterization of scrambling. There, I will suggest that we may be able to characterize it simply as follows:

(110) Adjoin-alpha, alpha a maximal projection.

In Section 2, I will very briefly discuss the Subjacency effects with scrambling. In particular, I will suggest that

successive cyclic scrambling is possible.

3.3.1 On the Characterization of Scrambling

3.3.1.1 Adjunction Sites

In the preceding discussion, I have motivated and defended the hypothesis that scrambling is an S-structure adjunction operation. In particular, I have assumed that scrambling involves adjunciton to S. However, as noted in Chapter 2, fn. 26, we have not seen any clear evidence that the adjunciton site for scrambling should be limited to S. In this section, I will argue that scrambling must in fact be able to adjoin phrases to nodes other that S. The discusson here leads to the hypothesis that there is probably no need at all to stipulate the possible adjunction sites for scrambling.

Let us first consider VP as a possible adjunciton site for scrambling. We saw in the preceding section that subject NPs can never be scrambled. Thus, (111b) is not a possible representation for (111a).

(111)a. Mary-ga sono hon-o katta (koto)
-nom that book-acc bought fact

(Mary bought that book)

b. [$_S$Mary-ga$_i$ [$_S$sono hon-o$_j$ [$_S$$\underline{t}_i$[$_{VP}$$\underline{t}_j$ katta]]]]

Given this conclusion, let us now consider the examples in (112).

(112)a. Mary-ga sono hon-o$_i$ Bill$_j$-ni [PRO$_j$ $\underline{t}_i$ yomu yooni]
-nom that book-acc -to read so that

itta (koto)
said fact

(Mary told Bill to read that book)

b. Mary-ga sono hon -o$_i$ Bill$_j$-ni [PRO$_j$ $\underline{t}_i$ motte kuru
-nom that book-acc -to bring

yooni] meireisita (koto)
so that ordered fact

(Mary ordered Bill to bring that book)

In these examples, the embedded object <u>sono hon-o (that book-acc)</u> is moved out of the embedded clause, but still follows the matrix subject in linear order. If it is adjoined to the matrix S, then the structure of (112a), for example, will be as follows:

(113) [$_S$Mary-ga$_k$ [$_S$sono hon-o$_i$ [$_S$$\underline{t}_k$ [$_{VP}$ Bill$_j$-ni [PRO$_j$ $\underline{t}_i$ yomu yooni] itta]]]]

But we already know that (113) cannot be a possible representation of (112a), since subject NPs are not subject to scrambling. Thus, sono hon-o (that book-acc) cannot be adjoined to the matrix S. Furthermore, it is clear that it is not adjoined to the embedded S, since it precedes a phrase in the matrix clause Bill-ni (to Bill) and is clearly moved out of the embedded clause. Hence, sono hon-o in (112a) must be adjoined to a node other than S. Consequently, the S node cannot be the only possible adjunction site for scrambling. A natural candidate for the adjunction site of sono hon-o in (112a) is the matrix VP. According to this hypothesis, the structure of (112a) will be as follows:

(114) $[_{S}$Mary-ga $[_{VP}$sono hon-o_i $[_{VP}$$Bill_j$-ni $[PRO_j$ $\underline{t}_i$ yomu yooni] itta]]]

If this is the correct representation of (112a), as it seems quite plausible, then VP must also be a possible adjunction site for scrambling.[34]

Let us next consider NP as a possible adjunction site for scrambling. First, consider the following examples:

(115)a. $[_{NP}$sono $[_{S}$Mary-ga Bill-o sakete iru to yuu] uwasa]
that -nom -acc avoid COMP say rumor

(That rumor (which says) that Mary is avoiding Bill)

b. *$[_{NP}$Bill-o_i $[_{NP}$sono $[_{S}$Mary-ga $\underline{t}_i$ sakete iru to yuu] uwasa]]

In (115a), the object NP of the embeded clause is moved out of its clause and adjoined to NP. Although (115b) may also be a Subjacency violation, it is far worse than examples like (116).

(116) ?$[_{S}$Bill-o_i $[_{S}$John-ga $[_{NP}[_{S}$Mary-ga $\underline{t}_i$ sakete iru
-acc -nom -nom avoiding

to yuu] uwasa]-o kiita]] (koto)
COMP say rumor -acc heard fact

(John heard a rumor (which says) that Mary is avoiding Bill)

In fact, (116) is at worst only marginal.[35] Thus it may be argued on the basis of examples such as (115b) that NP is not a possible adjunction site for scrambling.

However, there are a number of reasons that (115b) should be ungrammatical even if NP is a possible adjunction site. For example, the NP which <u>Bill-o</u> is adjoined to is "specific" in the sense of Fiengo and Higginbotham (1981). (Cf. also Chomsky, 1973, fn.19.) Thus, (115b) seems to be in violation of the "specificty condition," which prohibits

extractions out of "specific" NPs.[36] In fact, (116) becomes much worse when sono (that) is inserted in the initial position of the complex NP, as shown below.

(117) *[$_S$Bill-o$_i$ [$_S$John-ga [$_{NP}$sono [$_S$Mary-ga $\underline{t}_i$ sakete iru
-acc -nom that -nom avoiding

to yuu] uwasa]-o kiita]] (koto)
COMP say rumor -acc heard fact

(John heard that rumor (which says) that Mary is avoiding Bill)

Thus, (115b) does not seem to show convincingly that NP is not a possible adjunction site for scrambling.[37]

The discussion above leads us to examples such as the following, where a genitive object is scrambled to the NP-initial position:

(118)a. [$_{NP}$yuubokumin-no [$_{N'}$sono tosi-no hakai]]
nomad -gen that city-gen destruction

(the nomad's destruction of that city)

b. *[$_{NP}$sono tosi-no$_i$ [$_{NP}$yuubokumin-no [$_{N'}$$\underline{t}_i$ hakai]]]

(119)a. [$_{NP}$syoosya-no [$_{N'}$toiretto peepaa-no kaisime]]
trading company-gen toilet paper -gen cornering

(trading companies' cornering in toilet paper)

b. *[$_{NP}$toiretto peepaa-no$_i$ [$_{NP}$syoosya-no [$_{N'}$ $\underline{t}_i$ kaisime]]]

These examples show that the genitive object cannot be scrambled within an NP with derived-nominal-reading. Thus, these examples also may be taken as evidence that NP is not an adjunction site for scrambling.[38]

However, in this case also, there are reasons to suppose that examples such as (118b), (119b) are ruled out on independent grounds. Recall that it was argued in the preceding section that subject NPs can never be scrambled, and that this fact is to be attributed to the following condition:

(120) Variables must have Case.

I argued that subject NPs in Japanese are not assigned abstract Case by INFL, and that the distribution of the nominative Case marker ga is determined solely on contextual grounds exactly as in the case of genitive Case in English. I presented two pieces of evidence for this hypothesis. One is that there is no upper limit to the number of nominative phrases in a simple Japanese sentence. (Cf. Kuno, 1973a,b.) One of the relevant examples, (62), is repeated below as (121).

(121) Yahari, [$_S$natu-ga [$_S$biiru-ga umai]]
after all summer-nom beer -nom tasty

(After all, it's during the summer that beer tastes good)

As noted above, it seems extremely unlikely that INFL, or for that matter, any element, can assign nominative Case to any number of phrases across any numer of sentence-boundaries. the other piece of evidence for our hypothesis was the subject/object asymmetry with respect to the so-called "Case marker drop" phenomenon. Again, the relevant examples (82c) and (83c) are repeated below in (122).

(122)a. Dare-*(ga) kita no
who -nom came

(Who came?)

b. Nani-(o) yonderu no
what-acc reading

(What are you reading?)

As noted above, once we assume that the object position, but not the subject position, can be assigned abstract Case in Japanese sentences, the contrast in (122) follows from the Case Filter, which is repeated below in (123).

(123) *NP if NP has phonetic content and has no Case.

And if nominative NPs are not assigned abstract Case, then they cannot be scrambled since the trace left by such scrambling will be in violation of the condition in (120).

Here, genitive Case in Japanese shares those properties of nominative Case illustrated by (121) and (122a). We have already seen in (118) and (119) that more than one genitive phrase can appear in an NP. In fact, as in the case of nominative Case, there is no upper limit to the possible number of genitive phrases in an NP, as shown below.

(124)a. sengetu-no John-no Mary-e-no tegami
last month-gen -gen -to-gen letter

(the letter which John sent to Mary last month)

b. kyonen-no Bill-no ahurika-e-no ryokoo
last year-gen -gen Afrika -to-gen trip

(the trip to Africa that Bill made last year)

(As it can be seen in these examples, PPs (Mary-e, ahurika-e) as well as NPs appear in genitive Case in Japanese.) Furthermore, NPs and PPs in the context for genitive Case must be accompanied by the genitive Case marker no. In other words, genitive Case is like nominative Case in that "Case marker drop" is never possible. This is shown in (125).

(125)a. sono tosi-*(no) hakai
that city-gen destruction

(that city's destruction)

b. Mary-e-*(no) tegami
-to-gen letter

(the letter to Mary)

Thus, to the extent that it is reasonable to assume that nominative NPs are not assigned abstract Case, it seems also reasonable to suppose that genitive NPs are not in positions of abstract Case assignment.[39] And if genitive NPs are not in positions of abstract Case assignment, we expect (118b) and (119b) to be ungrammatical regardless of whether NP is a possible adjunction site for scrambling or not. The traces of scrambling in these examples are not assigned Case, and hence, these examples are straightforwardly ruled out by the condition in (120).

The discussion above indicates that NP-adjunction by scrambling, if it is possible at all, is quite restricted. In particular, if our account of (118b), (119b) is correct, then scrambling of genitive NPs should never be possible. Such scrambling always leaves a non-Case-marked variable, and hence, results in violation of (120). However, it should be noticed that the condition in (120) does not

prohibit the scrambling of genitive phrases in general. In fact, we find examples such as the following:

(126)a. [$_{NP}$seihugun-no [$_{N'}$syuto-kara-no tettai]]
government army-gen capital-from-gen withdrawal
(the government army's withdrawal from the capital)

b. [$_{NP}$syuto-kara-no$_i$ [$_{NP}$seihugun-no [$_{N'}$$\underline{t}_i$ tettai]]]

(127)a. [$_{NP}$John-no [$_{N'}$minami-amerika-e-no ryokoo]]
-gen South America-to-gen travel
(John's travel to South America)

b. [$_{NP}$minami-amerika-e-no$_i$ [$_{NP}$John-no [$_{N'}$$\underline{t}_i$ ryokoo]]]

In (126b) and (127b), a PP complement to the head noun precedes the subject NP. Hence, it seems reasonable to assume that these examples are derived by the scrambling of genitive PPs. And if this is the case, then we must conclude that genitive PPs, as opposed to genitive NPs, can be scrambled NP-internally.

This contrast between genitive NPs and PPs is exactly what we expect given our account for the examples in (118b) and (119b). According to our hypothesis, genitive NPs are not subject to scrambling because the traces produced by such scrambling will necessarily be in violation of the condition in (120), which requires that variables be Case marked. But

variables are, by definition, of the category NP.[40] Thus, (120) constrains movements of NPs to A'-positions, but has nothing to do with movements of PPs. For example, let us consider the following examples of wh-movement:

(128)a. Who do you expect [$_S$t to win]

b.*Who is it likely [$_S$t to win]

(129) Where did you buy the book t

The trace of who in (128a) is Case marked by expect, and hence, satisfies (120). The trace of who in (128b), on the other hand, is not Case marked since likely, being an adjective, is not a possible Case assigner. Thus, (128b) is in violation of (120). But (129) is grammatical despite the fact that the trace of the PP, where, is not assigned Case. Thus, clearly, PP traces of wh-movement need not be Case marked. This fact supports the formulation of (120) as a condition on variables and not on locally A'-bound traces in general. And given that (120) is a condition on variables, if scrambling of genitive NPs is prohibited because of this condition, we should predict that scrambling of genitive PPs is possible. This prediction indeed seems to be borne out by the examples in (126b) and (127b).

In this section, I first argued that VP, in addition to S,

is a possible adjunction site for scrambling. Then, I considered NP as a possible adjunction site for scrambling. We saw that NP-adjunction is quite restricted for various reasons. But we have also seen that there are examples suggesting that NP is a possible adjunction site. Thus, the discussion in this section indicates that not only S but also VP and NP are possible adjunction sites for scrambling. The examples discussed in this section and the problem of the adjunction sites for scrambling in general clearly deserve more detailed examination. But given the indications that S, VP and NP are possible adjunction sites and no clear evidence that any node cannot be an adjunction site, I will tentatively hypothesize that scrambling can adjoin phrases to any node and that there is no need to stipulate the possible adjunction sites for scrambling.

3.3.1.2 The Non-Scramblability of VP

In the discussion above, we have seen examples of NP, PP and S' scrambling. Some relevant examples are repeated below.

(130)a. NP: Bill-o$_i$ [$_S$John-ga naihu-de $\underline{t}_i$ sasita]
-acc -nom knife-with stabbed

b. PP: Naihu-de$_i$ [$_S$John-ga $\underline{t}_i$ Bill-o sasita]
knife-with -nom -acc stabbed

(John stabbed Bill with a knife = Chapter 2, (2e) and (2c).)

(131) S': [$_S$,Mary-ga sono hon-o yonda to]$_i$ [$_S$John-ga
-nom that book-acc read COMP -nom

$\underline{t}_i$ itta]
said

(John said that Mary read that book = Chapter 3, (15b).)

Given these examples, we are naturally led to the hypothesis that in principle any maximal projection is subject to scrambling. However, it has been known that Japanese lacks VP-preposing, that is, that VP is not subject to scrambling. For example, (132b) is totally ungrammatical.

(132)a. [$_S$John-ga [$_{VP}$sono hon-o katta]] koto
-nom that book-acc bought fact

(the fact that John bought that book)

b.*[$_S$[$_{VP}$sono hon-o katta]$_i$ [$_S$John-ga $\underline{t}_i$]] koto

This fact poses a question as to whether the scrambling of VP can be prohibited on independent grounds. In what follows, I will suggest that there is in fact an independent reason that VPs are not subject to scrambling, and hence,

that the non-scramblability of VP need not be stipulated as such.

As is well known, Japanese lacks not only VP-preposing but also VP-deletion. Historically, the lack of VP-deletion was often accounted for by assuming that Japanese lacks VP itself.[41] However, there has been a proposal to account for the lack of VP-deletion without appealing to the hypothesis that Japanese lacks VP. Kuno (1978b) states that "a rule of Verb Phrase Deletion is nonexistent in Japanese" because "Japanese does not have an auxiliary verb that can be used independently." (p. 130). As shown below, when VP-deletion takes place in English, an auxiliary verb must be left behind. The following examples are taken from Lasnik (1984):

(133)a. I left because John *(did)
b. You can win because Bill *(can)
c. I'm leaving because Bill *(is)

Thus, if "Japanese does not have an auxiliary verb that can be used independently," which in fact seems to be the case, then it is not surprising at all that VP-deletion is impossible in this language.

Although it is not quite clear why VP-deletion must leave

an auxiliary verb behind, we may tentatively state Kuno's observation in the form of the following constraint:[42]

(134) INFL must be realized.

The idea behind (134) is basically that affix hopping is obligatory. INFL must be realized on a verb, and if there is no verb to bear INFL, then "do-support" will be required so that affix hopping can take place. Since Japanese lacks auxiliary verbs that can appear independently, and in particular, it lacks "do-support," VP-deletion in this language will necessarily result in violation of (134).

Here, Kuno's account for the lack of VP-deletion in Japanese can be directly extended to the case of VP-preposing. As in the case of VP-deletion, VP-preposing also must leave an auxiliary verb, i.e., the bearer of INFL, behind, as shown below.

(135) Mary expected John to win the race, and win the race, he *(did)

(136)*Mary expected John to win the race, and won the race, he

This fact also follows from (134), if, as seems reasonable, affix hopping requires adjacency. That is, if INFL and its bearer must be adjacent, then VP-preposing must leave an auxiliary verb behind for otherwise, there will be no verb

adjacent to INFL. And if this is the correct account for (135)-(136), then we should predict that VP-preposing is impossible in Japanese. VP-preposing in this language cannot leave an auxiliary verb behind since this language does not have "an auxiliary verb that can be used independently." But unless an auxiliary verb is left behind, there will be no verb adjacent to INFL. Thus, VP-preposing (VP-scrambling) will necessarily result in violation of (134). Let us illustrate this account using (132b). With VP-scrambling, the structure of this example is as follows:

(137) $[_S[_{VP}$sono hon-o kaw$]_i$ $[_S$John-ga $\underline{t}_i$ INFL(past)$]]$
that book-acc buy -nom

(134) requires that INFL be realized. But if affix hopping requires adjacency, then INFL in (137) cannot be realized on the verb <u>kaw</u>. Thus, this example is ruled out by the condition in (134).

If the account for the impossibility of VP-scrambling suggested above is correct, then clearly there is no need to stipulate that VP is not subject to scrambling. Thus, for the purpose of the characterization of scrambling, we can maintain the hypothesis that scrambling applies to all maximal projections. When scrambling applies to VP, the

resulting sentence will be ruled out by the condition in (134). This observation, together with the discussion on adjunction sites in the preceding section, leads us to the following characterization of scrambling:

(138) Adjoin-alpha, alpha a maximal projection.

In (138), it is assumed that the direction of movement need not be stipulated. That is, the assumption here is that scrambling can in principle move phrases rightward as well as leftward. Before I conclude this section, I will briefly discuss this problem.

If rightward scrambling is possible at all, then we should of course expect it to obey all the constraints applicable to leftward scrambling. For example, rightward adjunction of a phrase to a position that does not c-command its trace should be impossible because of the constraint in (17), which is repeated below as (139).

(139) Traces must be bound.

Thus, we know that examples such as (140) are ruled out regardless of whether rightward scrambling is possible or not.

(140) *John-ga Mary-ga minna-ni sono hon-o motte iru to
-nom -nom all-to that book-acc have COMP

itta (koto)
said fact

(John told everyone that Mary has that book)

In this example, the embedded subject Mary precedes a phrase of the matrix clause minna-ni (to all). Thus, this example is derived either by moving Mary out of the embedded clause or by moving minna-ni into the embedded clause. But we already know that Mary cannot be moved since subject NPs are not subject to scrambling. And if minna-ni is moved into the embedded clause and adjoined to, say, the embedded VP, then its trace will be in violation of (139). Thus, (140) is ruled out independently of whether rightward scrambling is possible or not.

This consideration brings us to examples such as the following:

(141) John-ga Mary-ni watasitanda, sono hon -o
-nom -to handed that book-acc

(John handed that book to Mary)

Examples of this kind, which are treated as instances of right-dislocation in Haraguchi (1973), are acceptable in colloquial speech. If rightward scrambling is possible,

then (141), for example, can be straightforwardly formed by adjoining the object NP sono hon-o (that book-acc) to S or VP. In this case, the condition in (139) is clearly observed whether the object NP is adjoined to S or VP.[43]

However, it is argued convincingly, I believe, in Kuno (1978b), Inoue (1978), Kuroda (1980) that examples such as (141) should not be analyzed in terms of movement and not even as instances of right-dislocation. This construction in fact has properties quite distinct from those of scrambling. First of all, as Haraguchi (1973) notes, it is strictly a matrix phenomenon. The example in (142) is completely ungrammatical.

(142) *John-ga Mary-ni watasita, sono hon-o koto
-nom -to handed that book-acc fact

(the fact that John handed that book to Mary)

Secondly, subject NPs as well as object NPs can follow the verb in this construction, as shown below.

(143) Mary-ni sono hon-o watasitanda, John-ga
-to that book-acc handed -nom

(John handed that book to Mary)

Thus, this construction does not exhibit the subject/object asymmetry observed with scrambling. And finally, as also

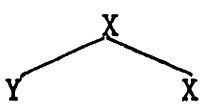
noted in Haraguchi (1973), overt resumptive pronouns are possible in the construction exemplified by (141). The following example is Haraguchi's (2.1a):

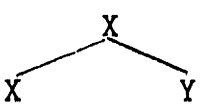
(144) John-wa kanozyo-ga suki desu, Mary-ga
-top she -nom like -nom

(John likes Mary)

Given the discussion in Chapter 2, Section 3.2, this fact strongly suggests that examples such as (141) does not involve any kind of adjunction operation.

The fact noted above suggest that examples such as (141) have nothing to do with scrambling. In particular, given the fact indicated by (142), it seems quite reasonable to assume that rightward scrambling is impossible. Although this may have to be stipulated as such, I suspect that it has something to do with the fact that Japanese phrase structure is strictly head-final. Let us consider the following adjunction configurations:

(145)a. 

b. 

In (145a-b), Y is adjoined to the node X. And in both cases, it seems quite reasonable to assume that the lower X is the head of the higher X. If this is the case, then

left-adjunction as in (145a) creates a head-final structure, whereas right-adjunction as in (145b) creates a head-initial structure. Thus, if Japanese phrase structure has to satisfy the head-final requirement at S-structure, then the configurations resulting from rightward scrambling will be ruled out at this level. What is suggested here is only a speculation at this point. But if it is correct, then we can maintain the very general characterization of scrambling stated in (138).

3.3.2 Scrambling and Subjacency

Given our conclusion that "long-distance" scrambling is possible, a question naturally arises as to the relation between scrambling and the Subjacency Condition. In this section, I will briefly discuss this problem. Since scrambling is an adjunction operation and does not involve movement into COMP, it seems quite clear that a detailed examination of Subjacency effects on scrambling will lead us to important insights into the nature of Subjacency itself. However, the purpose of this section is not to discuss the implications of the scrambling facts for Subjacency, but to lay down an initial hypothesis on how Subjacency applies to scrambling. For more detailed discussions of the Subjacency effects on scrambling as well as of their implications for

the formulation of the Subjacency Condition, the reader is refered to the forthcoming works by Noriko Yoshimura.

As noted above, Harada (1977) proposed a formulation of the scrambling rule, assuming that scrambling is constrained by Ross' (1967) island constraints. In fact, his main point was that scrambling is a legitimate transformational operation, and hence, that Japanese grammar does have transformational rules. He argued that scrambling is subject to the complex NP constraint and the coordinate structure constraint, and took this as evidence that scrambling is a transformational operation.[44] The fact that "long-distance" preposing is subject to the complex NP constraint is already noted in Haig (1976). Given our conclusion that "long-distance" preposing is a subcase of scrambling, which is already assumed in Harada (1977), Haig's observation is that scrambling obeys the complex NP constraint. Haig notes further that the complex NP effect on "long-distance" preposing is exactly like that on wh-movement in English in that it is strong in the case of extraction out of relative clauses but varies in strength in the case of extraction out of "pure complex NPs." (Cf. also Yoshimura, 1984.) Examples of scrambling out of a relative clause and a "weak pure complex NP" are shown

below.

(146)a. ?*Ano hon-o_i [$_S$John-ga [$_{NP}$[$_S$$\underline{e}_j$ $\underline{t}_i$ katta hito$_j$]]-o
That book-acc -nom bought person-acc

sagasite iru rasii]
looking-for seem

(It seems that John is looking for the person who bought that book)

b. ?Bill-o_i [$_S$John-ga [$_{NP}$[$_S$Mary-ga $\underline{t}_i$ sakete iru to
-acc -nom -nom avoiding COMP

yuu] uwasa]-o kiita] (koto) (=(116))
say rumor -acc heard fact

(John heard a rumor (which says) that Mary is avoiding Bill)

As noted above in the preceding section, (146b) becomes much worse when we make the complex NP "specific" by starting it with sono (that).

As noted also in Yoshimura (1984), scrambling is constrained by the adjunct condition as well. Again, the result of scrambling out of adjuncts varies depending on the nature of the adjunct, exactly like in the case of wh-movement in English.[45] Examples of adjunct condition violations are shown below.

(147)a.??Sono hon-o_i John-ga [Mary-ga $\underline{t}_i$ yomioete
that book-acc -nom -nom finish-reading

kara] dekaketa (koto)
after went-out fact

(John went out after Mary finished reading that book)

b.*Sono hon-o_i John-ga [minna-ga $\underline{t}_i$ kau node] tigau
that book-acc -nom all -nom buy because different

hon-o katta (koto)
book-acc bought fact

(Because everyone buys that book, John bought a different one)

c.?*Tookyoo-ni_i Mary-ga [John-ga $\underline{t}_i$ ikitagatte iru
Tokyo -to -nom -nom want-to-go

noni] musisite iru rasii
although ignoring seem

(It seems that although John wants to go to Tokyo, Mary is ignoring that fact)

Given that scrambling exhibits complex NP effects as well as the adjunct condition effects, it seems clear that it is constrained by the locality constraints on movement in general.

Huang (1982), relying on the insights of Kayne (1981), proposes to account for the adjunct condition effects as well as the subject condition effects by means of the following general constraint (p.505):[46]

(148) Condition on Extraction Domain (CED)

A phrase A may be extracted out of a domain B only if B is [lexically] properly governed.

For the purpose of the discussion here, we can assume the following definitions of government and lexical proper government:

(149)a. X governs Y if every maximal projection dominating X also dominates Y and conversely.

b. X lexically properly governs Y if X governs Y and X is a lexical category ([±V,±N]).

(Cf. Aoun and Sportiche, 1981, Chomsky, 1981.)

Roughly speaking, (148) prohibits extractions out of non-complements. Thus, wh-movement can move a phrase out of S'-complements but not out of subjects and adjuncts.

(150)a. What do you think that John likes t

b.*Who did pictures of t impress you

c.?*What did you leave before buying t

The examples of scrambling in (147) can also be straightforwardly accounted for by the condition in (148).[47]

Given this account of the examples in (147), sentences such as the following pose an interesting problem:

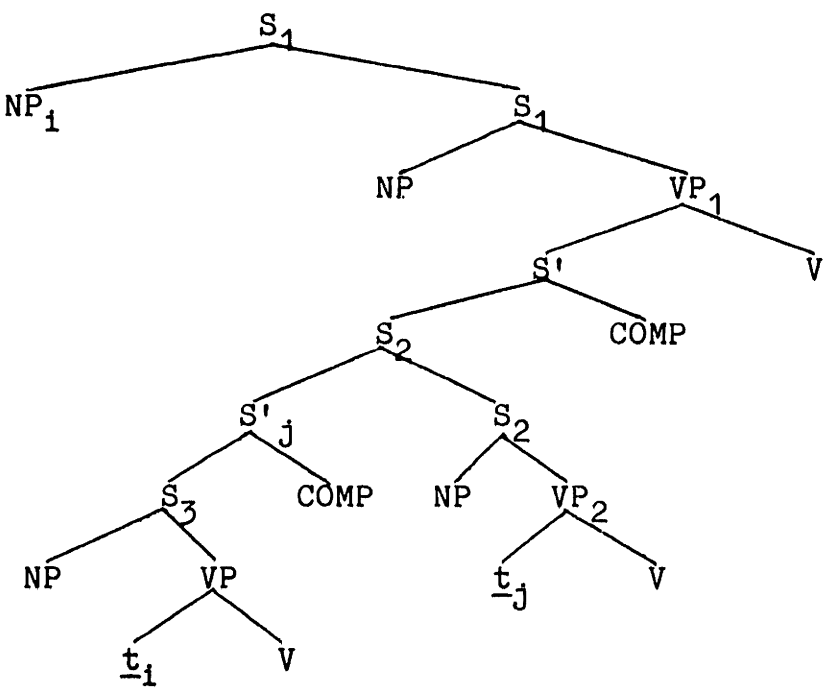
(151) Sono hon-o_i [$_S$John-ga [$_{S'}$[$_S$Mary-ga $\underline{t}_i$ katta to]$_j$
that book-acc -nom -nom bought COMP

Bill-ga $\underline{t}_j$ itta to] omotte iru] (koto)
-nom said COMP think fact

(John thinks that Bill said that Mary bought that book)

Although this example is extremely awkward due to "center embedding," it seems to me to be perfectly grammatical. The structure of (151) is shown in (152).

(152)



As can be seen in (152), the most deeply embedded S' is scrambled to the initial position of S_2, and an object NP is scrambled out of this S' to the initial position of the

matrix sentence. Since the most deeply embedded S' is moved from its D-structure position to a position adjoined to S_2, it is no longer properly governed at S-structure. Thus, given Huang's CED, a question naturally arises as to how NP_i can be moved out of this S'.

Baltin (1984) points out that the islandhood of extraposed phrases follows straightforwardly from the CED. Some of his examples are shown below. (p.160)

(153)a. Who_i did you show a picture of $\underline{t}_i$ to Martha

b.*Who_i did you show a picture $\underline{t}_j$ to Martha $[_{PP}$of $\underline{t}_i]_j$

If PP extraposition adjoins PPs to VP, then it seems reasonable to assume that extraposed PPs are no longer properly governed and hence become islands because of the CED.[48] Similarly, since scrambling is an adjunction operation, we do expect scrambled phrases to become islands for extraction. In particular, since the most deeply embedded S' is not properly governed in (152), extraction out of this S' should be impossible. If CED is a condition on movement and not on representation, then there is a way to derive the configuration in (152) without violating this condition. We can first adjoin NP_i to S_1 and then adjoin

S'_j to S_2. But this derivation violates the principle of strict cycle. In fact, if such a derivation is possible, then we expect (153b) to be grammatical. We can first move who to COMP and then extrapose the PP, and thus derive this example without violating the CED.

Given the discussion above, it should now be clear that (151) indicates that successive-cyclic scrambling is possible. First of all, since (151) is grammatical, CED cannot be a condition on represention. If this condition constrains S-structure representations, then (151) should be ungrammatical. Hence, CED must be a condition on movement. Now, the grammaticality of (151) indicates that the configuration in (152) can be derived without violating the CED or the principle of strict cycle. First, NP_i must be moved out of S'_j before the latter is scrambled, so that there will be no CED violation. But the initial movement of NP_i cannot move this NP out of S_2, for otherwise the movement of S'_j will violate the principle of strict cycle. Hence, the initial movement of NP_i must take place within S_2. And this implies that successive-cyclic scrambling is possible, since NP_i must eventually be moved out of S_2. In fact, once we assume successive-cyclic scrambling, (151) can

be straightforwardly accounted for. For example, we can first adjoin NP_i to VP_2, and then adjoin S'_j to S_2. After these two movements, we can move NP_i again and adjoin it to the matrix S.[49] Neither the CED nor the principle of strict cycle is violated.

The hypothesis that scrambling can involve successive cyclic adjunction enables us to account for the complex NP effects on scrambling in terms of Subjacency in a very simple way. The Subjacency Condition is given below.[50]

(154) In the following configuration, where A and B are bounding nodes, Y cannot be moved to the position of X and conversely:

$$\ldots X \ldots [_A \ldots [_B \ldots Y \ldots] \ldots] \ldots X \ldots$$

Let us consider again the ungrammatical example in (146a), where an NP is scrambled out of a relative clause.

(146)a.?*Ano hon-o_i [$_S$John-ga [$_{NP}$[$_S$ $\underline{e}_j$ $\underline{t}_i$ katta] hito$_j$]-o
That book-acc -nom bought person-acc

sagasite iru rasii
looking-for seem

(It seems that John is looking for the person who bought that book)

Here, since a complementizer cannot appear in relative clauses in Japanese, let us assume that the relative

clause-head structure in this language is as follows:

(155) $[_{NP}[_{S} \ldots]\ NP]]$

Then, even if successive-cyclic adjunction is possible, as argued above, scrambling out of relative clauses must still involve a movement which crosses NP and S at the same time. That is, even if we can move a phrase out of the NP in (155) by first adjoining it to S and then to the NP, the second movement still crosses S and NP. This point is illustrated in (156).

(156) $[_{NP}\ X\ [_{NP}\ [_{S}\ \underline{t}\ [_{S} \ldots \underline{t} \ldots]]\ NP]$

Thus, if we assume that NP and S are bounding nodes in Japanese, then (146a) is directly ruled out by Subjacency.

Scrambling out of "pure complex NPs" will be ruled out by Subjacency in a similar way. Let us assume the following structure for "pure complex NPs":

(157) $[_{NP}\ [_{S} \ldots]\ N]$

Then, scrambling out of a complex NP will necessarily involve a movement which crosses S and NP simultaneously. Note here that whether we have S or S' in the structures in

(155) and (157) is not crucial for our account. If we assume the following structures instead of (155) and (157), then we can maintain our account assuming that NP and S' are the bounding nodes in Japanese:

(158)a. $[_{NP}\ [_{S'}\ \ldots\ ]\ NP]$

b. $[_{NP}\ [_{S'}\ \ldots\ ]\ N]$

Thus, our conclusion that scrambling can take place successive-cyclically seems quite consistent with Haig's and Harada's observation that scrambling exhibits complex NP effects.[51,52]

Furthermore, if successive-cyclic scrambling is possible, the grammatical examples of "long-distance" scrambling will be allowed correctly. Let us first consider the following example:

(159) Sono hon-o_i $[_S$John-ga $[_{S'}[_S$Mary-ga $\underline{t}_i$ katta] to]
that book-acc -nom -nom bought COMP

omotte iru] (koto)
think fact

(John thinks that Mary bought that book)

If sono hon-o (that book-acc) is moved from the position of $\underline{t}$ to the sentence-initial position in one step, then this movement crosses two S-nodes. Thus, if S is a bounding node

in Japanese, we should expect (159) to be ungrammatical. However, given that successive-cyclic scrambling is possible, we correctly predict the grammaticality of this example. For example, the preposed NP sono hon-o can move to the sentence-initial position in two steps, say, first adjoining to the matrix VP and then to the matrix S. This derivation is illustrated below in (160).

(160) $[_S NP\ [_S NP\ [_{VP} \underline{t}\ [_{VP}[_S,[_S NP\ [_{VP} \underline{t}\ V]]\ COMP]\ V]]]]$

Each of the movements in (160) crosses only one S-node.

In the case of (159), there is no need to appeal to successive-cyclic scrambling if S' and NP are the bounding nodes in Japanese. The one-step movement of the preposed NP crosses two S-nodes but only one S'-node. However, there is no such way out for examples such as the following:

(161) Sono hon-o_i $[_S$John-ga $[_S,[_S$minna-ga $[_S,[_S$Mary-ga $\underline{t}_i$
that book-acc -nom all -nom -nom

katta] to] omotte iru] to] itta] (koto)
bought COMP think COMP said fact

(John said that everyone thinks that Mary bought that book)

This example is extremely awkward because of its "center-embedding" structure, but it seems to me that it is

perfectly grammatical. To the extent that it is awkward, its awkwardness is certainly quite distinct from that of Subjacency violations. And in this case, if the preposed NP is moved in one step, this movement crosses three S-nodes and two S'-nodes. Such one-step movement should certainly result in a violation of Subjacency. But if successive scrambling is possible, then we can move sono hon-o (that book-acc) in (161) successive-cyclically, using VPs as intermediate adjunction sites exactly in the way we did in (160). A possible derivation of (161) is shown below.

(162) $[_S NP\ [_S NP\ [_{VP} \underline{t}\ [_{VP}[_{S'}[_S NP\ [_{VP} \underline{t}\ [_{VP}\ [_{S'}\ [_S NP\ [_{VP}\ \underline{t}\ V]]$

COMP] V]]] COMP] V]]]]

Each step of the movement in (162) crosses at most one S-node and at most one S'-node.[53]

As shown above, the hypothesis that scrambling can take place successive-cyclically not only saves (151) from a CED violation but also enables us to account for the grammaticality of (159), (161) as well as the ungrammaticality of (146) in terms of Subjacency. The latter fact, needless to say, provides us with additional evidence that successive-cyclic scrambling is possible. Put

differently, our conclusion is that given our hypothesis on successive-cyclic scrambling, scrambling seems to obey the principles of bounding as expected. Thus, the discussion in this section provides support for Harada's (1977) conclusion that scrambling is a "well-behaved transformation," that is, in our terms, an instance of Move-alpha.

3.4 Conclusion

In this chapter, I discussed some properties of "long-distance" scrambling. In the first section, I argued for Harada's (1977) assumption that "long-distance" preposing is a subcase of scrambling, and hence, that scrambling is not clause-bound. The discussion in this section provides further support for the analysis of the "free word-order" phenomenon in terms of scrambling. If scrambling, as a phenomenon, is not clause-bound, then the non-configurational analysis is incomplete since it provides an account only for part of the "free word-order" facts. That is, the non-configurational analysis provides an account for the clause-internal "free word-order" facts, but only for those. On the other hand, the non-clause-boundedness of the "free word-order" phenomenon

is not surprising at all, if we assume scrambling as an instance of Move-alpha.

In the latter part of Section 1, I discussed the proposed counter-examples to Harada's formulation of the scrambling rule, and argued that they are not problematic for our hypothesis that scrambling is not clause-bound. The examination of one class of apparent counterexamples led us to the hypothesis that subject NPs are not subject to "long-distance" scrambling. In Section 2, I examined this hypothesis in detail and argued for the generalization that subject NPs can never be scrambled. There, I pointed out a subject/object asymmetry in Case assignment in Japanese, and proposed to account for the non-scramblability of subject NPs in terms of the condition which requires that variables be Case marked.

And finally, in Section 3, I made some speculations on the proper characterization of scrambling. First, I discussed the problem of possible adjunction sites for scrambling, very much in the spirit of works such as Baltin (1982a). I argued that not only S but also VP is a possible adjunction site, and further, suggested that NP also may be an adjunction site for scrambling. Then, I speculated on why VPs are not subject to scrambling, while NPs, PPs and S's

are. I suggested that Kuno's (1978b) account for the lack of VP-deletion in Japanese may provide us with an independent reason for the non-scramblability of VPs. The discussion here led us to the hypothesis that scrambling can be charactrized as follows:

(163) Adjoin-alpha, alpha a maximal projection.

In the latter part of Section 3, I briefly discussed the bounding properties of scrambling. Examining the CED effects on scrambling, I proposed that scrambling can take place successive-cyclically. It was then shown that given this hypothesis, further bounding properties of scrambling can be accounted for straightforwardly by the Subjacency Condition. The discussion here confirms Harada's (1977) conclusion that scrambling has the bounding properties expected of transformations. Thus, it provides further support for the hypothesis that scrambling is an instance of Move-alpha.

Footnotes Chapter Three

1. Scrambling is assumed to be clause-bound in Muraki (1974), N. A. McCawley (1976), Tonoike (1980), Hale (1980), Farmer (1980), Miyagawa (1980), Hasegawa (1981), Miyara (1981, 1982), Saito (1983a), and not to be clause-bound in Harada (1977), Kuno (1978b, 1980), Gunji (1982).

2. As in the preceding chapter, koto (the fact that) is added to the end of some examples to avoid the unnaturalness resulting from the lack of topic in a matrix sentence. I will here again ignore koto in the translations.

3. Cf. N. A. McCawley (1976, fn.7). Cf. also Kuno (1978b, p.58), Masunaga (1980, 1983) for relevant discussion. Masunaga argues that when the object precedes the subject in Japanese, it must be discourse anaphoric in some sense. From there, she argues that there is a "basic word-order" in Japanese and takes this to be evidence against the non-configurationality hypothesis of Hale (1980) and Farmer (1980). It is not clear to me that the facts she points out constitute evidence against the Hale-Farmer hypothesis unless it is shown that this property of scrambling must be represented in some way at LF. But I think her works clearly show that scrambling does have functional (and possibly, semantic/pragmatic) import.

4. Although I have used the terms "focus" and "contrastive focus" in the discussion, the exact functional/semantic import of preposing, clause-internal or otherwise, is far from clear. (Cf. the discussion in fn. 3.) I will continue to ignore it in the translations of Japanese examples, since it is not clear at all that it is to be treated at the level of sentence-grammar.

5. Miyara (1982), following Haig (1976), calls "long-distance" preposing 'emphatic fronting.' Tonoike (1980) calls it 'topicalization.'

6. The unnaturalness of (7b-c) may be related to the fact that the preposed phrases require some sort of "contrastive focus." The unnaturalness may be due to the fact that there are two phrases with such "focus," or it may be due to the fact that a phrase with such "focus" appears

non-sentence-initially. It may be worth noting in this connection that examples with multiple clause-internal scrambling are given "?" in Kuno (1978b, p.58). His examples, together with his judgements, are shown below.

(i)a. John-ga Mary-ni Tom-o syookaisita
-nom -to -acc introducted

(John introduced Tom to Mary)

b. John-ga Tom-o Mary-ni syookaisita

c. Mary-ni John-ga Tom-o syookaisita

d.?Mary-ni Tom-o John-ga syookaisita

e. Tom-o John-ga Mary-ni syookaisita

f.?Tom-o Mary-ni John-ga syookaisita

Again, (id) and (if) seem to be perfectly grammatical but somewhat less natural compared to the other examples. It seems to me that what is found in (7b-c) is the same kind of unnaturalness but in a more exaggerated form.

An ungrammatical sentence with multiple "long-distance" scrambling is found in Miyara (1982). I will discuss his example in Section 1.2.2.2.

7. Harada himself does not seem to be committed to the view that (10) can apply iteratively (cf. his fn.6).

8. Harada (1977), for some reason, assumes that an S' is not subject to scrambling. This assumption seems to be simply false as shown in the text and as also pointed out in Muraki (1979), Tonoike (1980). Tonoike claims that the scramblability of an S' is a serious problem for Harada's analysis. I simply fail to see why this is the case. See also Muraki (1979) for relevant discussion.

9. Cf. Chomsky (1982) and references cited there. (17) is independently motivated by examples such as the following:

(i)*I urged $\underline{t}_i$ to find out who$_i$ John came

(i) is derived from its D-structure through the movement of

who from the position of t_i to the most deeply embedded COMP. To my knowledge, a constraint of this kind for traces was first explicitly proposed in Fiengo (1977).

10. In fact, it seems to me that some of the arguments against Harada's analysis are based on complete misunderstanding of his analysis.

11. I will assume with Miyara that adverbs can be scrambled clause-internally, since given the adjunction analysis of scrambling, there does not seem to be any reason to preclude this kind of movement. But it should be noted that, as far as I can tell, it is not easy to show that adverbs are subject to clause-internal scrambling.

12. (19a) involves a complication which is irrelevant to the discussion here. I will come back to this example and others that seem to involve a movement of a subject NP in the following section.

13. I am indebted to Naoki Fukui (personal communication) for this particular example.

14. I am indebted to Yasuaki Abe (personal communication, 1981) for (25b).

15. As far as the preposing of PPs in English and Japanese is concerned (examples (20)-(24), (28)-(29)), if we regard (22) and (28b) as ungrammatical, then the generalization seems to be that a "true adjunct" PP cannot be preposed "long-distance." This of course suggests that the relevant condition may be the ECP. On the other hand, if we take (22) and (28b) to be grammatical, then the generalization seems to be that only those PPs that are "specific" (in some sense) can be preposed "long-distance." If this is the correct approach, then we may be able to say more generally that only "specific" phrases are subject to topicalization and scrambling. In fact, there seems to be a contrast between the following two examples:

(i)a. That man, John saw

b.?*No man, John saw

It is also known that when a quantified NP is preposed by scrambling in Japanese, it can only receive a group reading. (Cf. Kuno, 1973a, 1973b for relevant

discussion.)

16. Muraki (1979) defends his (1974) formulation of the scrambling rule (cf. Chapter 2) against Harada's. He states not only that "long-distance" preposing does not apply iteratively, but also that it applies "only to the topmost clause" (p.375). But as far as I know, he does not give any example to substantiate either claim. It seems to me that examples such as the following are awkward but nevertheless grammatical:

(i) Minna-ga [$_S$, sono hon$_i$-o John-ga [$_S$, Mary-ga t_i
all -nom that book-acc -nom -nom

katta tte] itta to] omotte iru (koto)
bought COMP said COMP think fact

(Everyone thinks that John said that Mary bought that book)

Undoubtedly, the awkwardness of (i) is at least partially due to the fact that it has a "center-embedding" structure.

17. There is an issue as to how (48) can be derived by scrambling. I will discuss the derivation of similar examples in Section 3.1.

18. There are a number of questions with respect to the exact nature of (49). Although I agree with Kuno (1980a) that it is extremely difficult to construe Mary as the causee in (47), this reading seems to become somewhat easier when Bill-ni is preposed all the way to the sentence-initial position.

(i) Bill-ni John-ga Mary-ni hana-o todokesaseta (koto)
-to -nom -to flower-acc deliver-made fact

a. John made Bill deliver flowers to Mary

b.??John made Mary deliver flowers to Bill

19. Kuno (1980a), discussing (49), gives "*" to the following example:

(i)?Taroo-wa Tookyoo-ni Hanako-ni ikaseta
-top -to -to go-made

(Taro made Hanako go to Tokyo)

I agree with Tonoike (1980) that this example is awkward but not completely ungrammatical.

20. Case marking in Japanese is a very widely discussed topic. In addition to the papers mentioned in the text, see Kuroda (1965b), Kuno (1973a), Farmer (1980), Marantz (1981a,b) and references cited there.

21. Cf. also Tonoike (1979, 1980) for relevant discussion.

22. Cf. Kuno (1973a,b), Shibatani & Cotton (1976), Hoji (1980), Saito (1982a), Kuroda (1984) for detailed discussion on this type of sentences.

The first nominative NP in this construction need not bind any position in the sentence, as shown in Saito (1982a). Thus, if it is adjoined to S, as I assumed in the text, then it is an exception to the following generalization discussed in Chapter 2:

(i) An NP in an adjoined position must bind a variable.

I will come back to this problem in Chapter 4.

23. A very strict kind of "aboutness relation" is required between "a non-argument with nominative Case" and the sentence following it. Very roughly speaking, the sentence must be a statement of some "important property" of the non-argument NP. Cf. Shibatani & Cotton (1976), Saito (1982a), Inoue (1984) for relevant discussion.

24. See Kuno (1976), Hasegawa (1981), Saito (1982a) for detailed discussion of these sentences.

25. Here, I am not claiming that there is a rule of "raising-to-object" in Japanese. See Kuno (1976), Hasegawa (1981), Marantz (1983), Saito (1983a) for discussions on the "raising-to-object construction" in Japanese. See in particular Saito (1983a) for evidence that the empty category in the embedded subject position is a pronominal.

26. Recall that in Chapter 2, it was shown that the following is not a configuration of weak crossover:

(i) Scrambled phrase$_i$ (referential) [...pronoun$_i$...$\underline{t}_i$...], where neither the pronoun nor the variable c-commands the other.

The relevant example is repeated below.

(ii) [$_S$John$_i$-o [$_S$kare$_i$-no hahaoya-ga [$_{VP}\underline{t}_i$ aisite iru]]] (koto)
-acc he -gen mother -nom love fact

(His mother loves John)

Thus, (75) cannot be ruled out as an instance of weak crossover.

27. More precisely, what seems to be involved here is a condition on the distribution of NPs with the accusative Case marker o. We may say that o is a phonetic realization of the abstract objective Case in the sense that NPs with o must satisfy the following condition:

(i) *NP-o unless
a) NP-o is assigned abstract objective Case, or
b) NP-o A'-binds a variable that is assigned abstract objective Case.

(i) allows (iia-b), but it rules out (iic), where the subject position is occupied by an expletive pro.

(ii)a. Mary-ga sono ronbun-o hihansita (koto)
-nom that paper -acc criticized fact

(Mary criticized that paper)

b. Sono ronbun-o$_i$ [$_S$Mary-ga $\underline{t}_i$ hihansita] (koto)

(Mary criticized that paper)

c.*pro sono ronbun-o hihansareta (koto)
criticized (passive) fact

(That paper was criticized)

(iic) is ruled out since the NP-o in the object position violates (i). (77) is ruled out for the same reason. If the object NPs in (iic) and (77) lack o, then they violate the Case Filter since they are neither accompanied by an overt Case marker nor are assigned abstract Case.

28. (79) is motivated by examples such as the following:

(i) *Who$_i$ is it likely [$_S$ t$_i$ to win]

Note that Mary-o in (78) is redundantly ruled out by (i) in fn. 27, since it is neither assigned abstract Case nor is in an A'-chain with a variable that is assigned abstract objective Case.

29. It is not quite clear to me at this point that bare NP topics are to be treated as part of the sentence. It might be that John in (81), for example, is simply uttered prior to the beginning of the sentence to create a discourse context. If this is the case, then a bare NP topic will still function as a topic for the sentence following it in the discourse, but it will be different from a topic marked by wa in that it will not be generated by sentence grammar.

30. See Kuno (1973b) and references cited there. Kuno argues that the so-called "object ga" is also optional. Although there are some unclear cases, it seems to me that the facts generally point to the contrary. For example,

(i)a. Nani-ga iru no
what-nom need

(What do you need?)

b.?*Nani iru no

31. When the object NP is scrambled out of its D-structure position, it seems to require an overt Case marker.

(i)a. John-ga dare(-o) nagutta no
-nom who -acc hit

(Who did John hit?)

b. Dare-o John-ga nagutta no

c.?*Dare John-ga nagutta no

See Saito (1983b) for detailed discussion of the relevant facts.

32. But see the references in fn.23.

33. Again, I will discuss this problem in Chapter 4.

34. Examples with the structure of (112a) become quite marginal when the embedded clause is interpreted as having tense. (The embedded verb yomu in (112a) appears with a tense marker morphologically. The verb stem yom (read) and the non-past tense marker ru combine to make up yomu. But the past tense form of yom, yonda, cannot be substituted for yomu in this example.) For example,

(i) ??John-ga sono hon-o_i minna-ni [$_S$,Mary-ga t_i
-nom that book-acc all -to -nom

motte iru to] itta (koto)
have COMP said fact

(John told everyone that Mary has that book)

I do not have any clear account for the contrast between (112a) and (i).

It should be noted here that although (i) is quite marginal, it is still much better than (ii), where the embedded subject is scrambled to a non-sentence-initial position.

(ii) *John-ga Mary-ga$_i$ minna-ni [$_S$, $\underline{t}_i$ sono hon-o
-nom -nom all -to that book-acc

motte iru to] itta (koto)
have COMP said fact

(John told everyone that Mary has that book)

the contrast between (i) and (ii) constitutes further evidence that subject NPs can never be scrambled.

35. As is well known, complex NPs headed by nouns such as rumor are very weak as islands.

(i) ?Who did you hear a rumor that Mary loves $\underline{t}$

36. The "specificity condition" is motivated on the basis of contrasts such as the following:

(i)a. Who did you see [$_{NP}$pictures of $\underline{t}$]

b.*Who did you see [$_{NP}$those pictures of $\underline{t}$]

(Cf. Chomsky, 1973.)

We find similar constrasts with wh in situ in Japanese.

(i)a. Kimi-wa [$_{NP}$[$_S$dare-ga kaita] hon]-o sagasiteru no
you -top who -nom wrote book-acc looking-for

(Who is the person x such that you are looking for the book that x wrote)

b.*Kimi-wa [$_{NP}$sono [$_S$dare-ga kaita] hon]-o sagasiteru no
that

(Who is the person x such that you are looking for that book that x wrote)

37. Although I do not have any clear evidence, (115b), does sound like it is ruled out also for some sort of Case conflict, which has to do with an accusative NP Bill-o being in a context for genitive NP. This intuition can be stated in the form of the following Case-checking filter:

(i) Suppose X is an NP or PP. Then, X is in genitive Case iff it is in the following structural context:

$[_Y X\ Z]$, where Y and Z are projections of N.

As we will see directly, PPs as well as NPs appear in genitive Case in Japanese. For detailed discussions on genitive Case in Japanese, see Bedell (1972), Kitagawa and Ross (1982), Hoji (1983).

38. There are a couple of complications in the judgements in (118)-(119) that I would like to mention here. First, (118b) and (119b) involve "switching the word-order of two NPs marked with the same grammatical formative." Thus, unless it is clear from the semantics which NP is to bear the subject theta-role and which NP is to be assigned the object theta-role, examples of this kind will be ruled out independently by Kuno's "anti-ambiguity device" in (49), which is repeated below in (i).

(i) In general, the greater the likelihood of ambiguous interpretation, the more difficult it is to switch the order of two NPs marked with the same grammatical formative (e.g., particle).

This problem does not arise in the case of (118b) and (119b), since a city usually does not destroy nomads and toilet paper does not corner trading companies.

Secondly, we have to make sure that the example NPs have the derived-nominal reading in the sense that they denote events, and further, that the relevant NP argument is assigned the object theta-role. This is so, since if the initial NPs in examples such as (118b), (119b) function only as modifiers and bear only some sort of "aboutness relation" to the head noun as in (ii), then there is no reason to suppose that those NPs are scrambled to the sentence-initial position.

(ii) yesterday's newspaper

There are examples where NP-internal scrambling of NPs seems to be marginally allowed. For example,

(iii)a. Yamada-no [$_{NP}$Tanaka-no ronbun]-no hihan
-gen -gen paper -gen criticism

(Yamada's criticism of Tanaka's paper)

b.??[$_{NP}$Tanaka-no ronbun]-no Yamada-no hihan

However, according to my intuition, (iiib) is marginally acceptable only when it refers to the content of the criticism and not to the event of Yamada criticizing Tanaka's paper.

39. Another similarity between nominative Case and genitive Case in Japanese is that both appear with PPs. We have already seen examples of genitive PPs in (124). The following example with a nominative PP is taken from Hoji (1980, p.31).

(i) [$_{S}$Kono mado-kara-ga [$_{S}$huzisan-ga yoku mieru]]
this window-from-nom Mt. Fuji-nom well visible

(It is from this window that we can see Mt. Fuji well)

As far as I know, the accusative Case marker o appears only with NPs and never with PPs.

40. The definition of variable in Chapter 2, fn.29 is repeated below.

X is a variable if (i) X = [$_{NP}$e]
(ii) X is in an A-position, and
(iii) X = [-pronominal, -anaphor].

It is not surprising at all if there are redundancies in this definition, but that problem does not concern us here.

41. More generally, the hypothesis that Japanese lacks VP is often proposed to account for the fact that this language does not have any rule that specifically refers to VP. (Cf. for example, Inoue, 1976b.) It is argued in Nakau (1973) that soo su in Japanese is exactly like do so in English in that it is a pro-form for VP. He takes this as evidence for VP in Japanese. But Hinds (1973) discusses Nakau's observation, and argues that soo su "replaces more than a VP, less than a VP, and even non-constituents." (p.50) Cf. also Hasegawa (1980, fn.2) for relevant discussion.

42. Lasnik (1984) suggests an ECP account of the facts in (133). If empty VPs are subject to the ECP and require an auxiliary verb as a lexical governor, then the facts in (133) follow from the ECP. Here, I will not adopt his analysis simply because at this point it is not clear to me how it can be extended to the VP-preposing cases discussed below. But see Hornstein and Lightfoot (1984) for an extension of the ECP which may enable us to apply Lasnik's analysis to the case of VP-preposing as well.

43. If INFL and the verb must be adjacent to each other, as suggested above, then right-adjunction to VP should be impossible in Japanese. (In the case of English, it is left-adjunction to VP that breaks the adjacency between INFL and the verb.) Thus, S is a more plausible adjunction site for sono hon-o in (141).

44. Thus, much of the recent work on scrambling can be viewed as extensions of Harada (1977).

45. For discussions on adjunct condition effects in English, see Chomsky (1982, pp.71-75), Huang (1982, Chapter 6), Longobardi (1983).

46. Chomsky (Class Lectures, Fall, 1983) proposed a reformulation of Subjacency, which subsumes Huang's condition in (148). In the discussion below, I will assume Huang's condition as formulated in (148). But as far as I can tell, this is by no means crucial for our argument. We will be led to the same conclusions even if we assume Chomsky's new Subjacency instead of Huang's condition.

47. It is difficult to check the subject condition effects on scrambling, since scrambling out of subjects seems to be always ruled out on independent grounds, e.g., Subjacency, or the filter suggested in fn.37. However, when scrambling moves a phrase out of a complex NP, there seems to be no difference in grammaticality/ungrammaticality whether the

complex NP is in the object position or in the subject position. For example,

(i)a.??/?*Dono hon-o_i Mary-ga [$_{NP}$John-ga t_i katta koto]-o
which book-acc -nom -nom bought fact -acc

mondai-ni siteru no
problem-to making

(Which book is it that Mary is calling the fact that John bought it into question)

b.??/?*Dono hon-o_i Mary-ga [$_{NP}$John-ga t_i katta koto]-ga
which book-acc -nom -nom bought fact -nom

mondai-da to omotteru no
problem-cop COMP think

(Which book is it that Mary thinks that the fact that John bought it is a problem)

If this generalization is correct, then it seems that the subject position of a finite clause is properly governed in Japanese, as predicted by Travis (1984). This conclusion contradicts Saito (1982a), Kuroda (1983), where it is argued that the subject position is always ungoverned in Japanese. But cf. Fiengo and Haruma (1983) for relevant discussion.

48. This account presupposes that the position adjoined to a VP is not properly governed by the verb, contrary to the assumption in Rizzi (1982). See Baltin (1982b), Saito (1984), Travis (1984) for relevant discussion.

49. The second movement of NP_i may itself have to be successive cyclic if S is a bounding node for Subjacency in Japanese. See the discussion below.

50. Cf. Chomsky, 1973, Chomsky, 1977, Rizzi, 1978, Chomsky, 1981 for discussions on Subjacency. For the purpose of exposition, I will assume that NP and S (or S') are the bounding nodes in Japanese. As noted in fn.46, Chomsky (Class Lectures, Fall, 1983) proposes a new formulation of Subjacency, which involves a contextual definition of bounding nodes. Although I will not discuss this new formulatin of Subjacency here, the discussion in the text seems to be quite compatible with it.

51. Here, I am assuming that scrambling out of a complex NP always violates Subjacency. However, as noted above, the effect of Subjacency is sometimes quite weak when a phrase is moved out of a "pure complex NP." See Chomsky (Lecture Notes, Fall, 1983) for a possible account of this fact.

52. If S and NP are the bounding nodes in Japanese, a question may arise regarding examples such as the following, which seem to involve multiple adjunctions to S:

(i) $[_S$ Sono hon $-o_i$ $[_S$ John-ni$_j$ $[_S$ Mary-ga $[_{VP}$ $\underline{t}_j$ $\underline{t}_i$
that book-acc -to -nom

watasita]]]] (koto)
handed fact

(Mary handed that book to John)

Here, the scrambling of sono hon-o (that book-acc) may cross two S nodes, S_2 and S_3. Following the suggestion in May (1977), I will assume that S_2 and $_3$ in (i) count as a single node for the purpose of Subjacency, since S_2 is in fact a copy of S_3 created by adjunction.

53. Given our account of (159), (161), it will be interesting to check whether there are wh-island effects on scrambling. Since scrambling does not use COMP as "escape hatch," we should predict that whether a COMP is occupied by a wh-phrase or not does not affect the possibility of "long-distance" scrambling. Although Japanese lacks syntactic wh-movement, an embedded question is necessarily accompanied by an overt Q-morpheme ka (Q-morpheme in the sense of Baker, 1970). Thus, it is possible, in principle, to check the effect of this Q-morpheme on scrambling.

However, in this case, we are faced with a problem of judgement. There are a number of perfectly grammatical examples where a phrase is scrambled over the Q-morpheme. For example,

(i)a. Sono hon-o_i John-ga [Mary-ga $\underline{t}_i$ katta ka dooka]
that book-acc -nom -nom bought whether

siritagatte iru (koto)
want-to-know fact

(John wants to know whether Mary bought that book)

b. Sono hon-o_i John-ga [Mary-ga dare-ni $\underline{t}_i$ watasita ka]
that book-acc -nom -nom who -to handed Q

siritagatte iru (koto)
want-to-know fact

(John wants to know who Mary gave that book to)

Given examples such as these, Yoshimura (1984) concludes that there are no wh-island effects with scrambling. On the other hand, as Nobuko Hasegawa (personal communication) points out, there are cases of scrambling where we can detect a slight "wh-island-like effect." (iib) is slightly worse than (iia).

(ii)a. Sono hon-o_i John-ga [Mary-ga $\underline{t}_i$ katta to]
that book-acc -nom -nom bought COMP

omotte iru (koto)
think fact

(John thinks that Mary bought that book)

b.?Sono hon-o_i John-ga [dare-ga $\underline{t}_i$ katta ka]
that book-acc -nom who -nom bought Q

siritagatte iru (koto)
want-to-know fact

(John wants to know who bought that book)

According to my judgement, the marginality of (iib) is roughly equivalent to that of "weak pure complex NP violation."

If we take (ia-b) to be the basic data and assume that the marginality of (iib) is to be attributed to some independent factor, then we can say tht there are no wh-island effects on scrambling, as expected. On the other hand, if we take (iib) to be basic, then we must say that there are at least some "wh-island-like effects" with scrambling. In this case, the "wh-island-like effect" can probably be attributed to the nominal nature of the question marker ka. As shown below, S's with the complementizer to (that) never appear with a Case marker, but embedded questions do, and sometimes must, appear with a Case marker.

(iii)a. [Mary-ga sono hon-o kaita to] (*-o/ *-ga)
-nom that book-acc wrote COMP -acc/-nom

omowarete iru
think (passive)

(It is believed that Mary wrote that book)

b. [Mary-ga dono hon -o katta ka] *(-ga) mondai-da
-nom which book-acc bought Q -nom problem-cop

(The problem is which book Mary bought)

c. John-ga [Mary-ga doko-ni iru ka] (-o) siritagatte iru
-nom -nom where-at is Q -acc want-to-know

(koto)
fact

(John wants to know where Mary is)

Given this fact, it seems possible that ka is a nominal, and embedded questions in Japanese are not S's but NPs. If this is the case, then the "wh-island-like effect" on scrambling can be considered as a subcase of the complex NP effect.

Chapter 4

Topicalization and Scrambling

In the preceding chapters, I defended the scrambling analysis of the "free word-order" phenomenon, and argued that there is very little reason, if any, to assume that scrambling is clause-bound. The purpose of this chapter is to discuss and clarify some well known issues concerning the syntax of topic constructions in Japanese on the basis of the results obtained in the preceding chapters.

The first issue has to do with the fact that topicalization in Japanese is not constrained by the Subjacency Condition.[1] It is well known, since Kuno (1973a), that relativization and topicalization in Japanese do not obey the island constraints. Some of Kuno's examples are shown below.

(1)a. $[_{NP}[_{S}[_{Adjunct}\underline{e}_i$ sinda noni] dare-mo kanasimanakatta]
died although anyone saddened-not-was

$hito_i$]
person

(Lit. the person who, although (he) died,
no one was saddened)

b. Sono $hito_i$-wa $[_{S}[_{Adjunct}\underline{e}_i$ sinda noni] dare-mo
that person-top died although anyone

kanasimanakatta]
saddened-not-was

(Speaking of that person, no one was saddened
although (he) died)

(2)a. $[_{NP}[_{S}[_{NP}[_{S}\underline{e}_i\ \underline{e}_j$ kite iru] $yoohuku_j$]-ga yogorete iru]
wearing suit -nom dirty be

$sinsi_i$]
gentlemen

(Lit. a gentleman who the suit that (he) is wearing
is dirty)

b. Sono $sinsi_i$-wa $[_{S}[_{NP}[_{S}\underline{e}_i\ \underline{e}_j$ kite iru] $yoohuku_j$]-ga
that gentleman-top wearing suit -nom

yogorete iru]
dirty be

(Speaking of that gentleman, the suit he is
wearing is dirty)

Examples in (1) indicate that adjuncts are not islands for relativization and topicalization. Those in (2) show that relativization and topicalization out of relative clauses

are possible in Japanese. On the other hand, as noted in Chapter 3, it has been pointed out in the literature that scrambling is subject to the island constraints. (Cf. Haig, 1976, Harada, 1977, Kuno, 1978b.) Some of the relevant examples are repeated below.

(3)a. Ano hon $-o_i$ [$_S$John-ga [$_S$,Mary-ga $\underline{e}_i$ katta to]
that book-acc -nom -nom bought COMP

omotte iru rasii]
think seem

(It seems that John thinks that Mary bought that book)

b.?*Ano hon $-o_i$ [$_S$John-ga [$_{NP}$[$_S$$\underline{e}_j$ $\underline{e}_i$ katta] $hito_j$]-o
that book-acc -nom bought person-acc

sagasite iru rasii]
looking-for seem

(It seems that John is looking for the person who bought that book)

(4)a. Tookyoo-ni_i [$_S$Mary-ga [$_S$,John-ga $\underline{e}_i$ ikitagatte iru to]
Tokyo -to -nom -nom want-to-go COMP

omotte iru rasii]
think seem

(It seems that Mary thinks that John wants to go to Tokyo)

b.?*Tookyoo-ni_i [$_S$Mary-ga [$_{Adjunct}$John-ga $\underline{e}_i$ ikitagatte iru
Tokyo -to -nom -nom want-to-go

noni] musisite iru rasii]
although ignoring seem

(It seems that although John wants to go to Tokyo, Mary is ignoring that fact)

(3b) shows that scrambling out of a relative clause results in an ungrammatical sentence. (4b), on the other hand, indicates that adjuncts are islands for scrambling. Thus, although the judgement is not always clear-cut, it seems that scrambling is in fact constrained by Subjacency.[2]

The data in (1)-(4) raise a problem as to why there is such a contrast between relativization and topicalization on the one hand and scrambling on the other. The following section is concerned with this problem. I will first discuss Kuno's (1973a,b) analysis of topic constructions, and argue for his proposal that topic in Japanese can be base-generated in the sentence-initial position. Then, I will discuss Perlmutter's (1972) proposal to attribute the lack of island effects in relativization to the fact that Japanese is a PRO-drop language. Although Perlmutter considers only relativizatoin, his proposal straightforwardly extends to the case of topicalization. I will argue that given Kuno's analysis of topic constructions in Japanese, Perlmutter's account must be correct. Finally, I will examine the implications of the fact that Perlmutter's account does not extend to the case of scrambling. It will be shown that if our generalization that an NP in an adjoined position must bind a variable

(cf. Chapter 2, Section 3.2) is correct, then we do expect scrambling to obey Subjacency.

The second issue to be discussed in this chapter concerns the derivation of topic constructions in Japanese. One of the earliest analyses of this construction in the generative framework is found in Kuroda (1965b). There, he analyzes this construction in terms of a movement rule, which he calls "wa-Phrase Inversion." According to his analysis, (5a), for example, is derived from (5b) through the preposing of ano hon-wa (that book-top).[3]

(5)a. Ano hon -wa John-ga katta
that book-top -nom bought

(Speaking of that book, John bought it)

b. John-ga ano hon-wa katta

Since then, the topic construction has been discussed extensively in the literature, and at this point, there seems to be a general agreement among Japanese linguists that it does not involve movement, or at least, movement of the kind that can be characterized as an instance of Move-alpha.[4] This general agreement is to a large extent due to the examples and the discussion of this construction provided in Kuno (1973a).

In the second section of this chapter, I will examine the properties of PP topics, as opposed to NP topics, and argue that there are instances of sentence-initial PP topics that cannot be base-generated in that position and hence, must be moved to that position. The discussion there provides support for Kuroda's movement analysis, and leads us to the hypothesis that an NP topic not only can be base-generated in the sentence-initial position as proposed in Kuno (1973a), but also can be moved to that position as proposed in Kuroda (1965b). I will suggest there also that Kuroda's "wa-Phrase Inversion" rule should be considered as a subcase of scrambling.

4.1 Topic Construction in Japanese

4.1.1 Kuno's Analysis

As mentioned above, it is largely due to Kuno's (1973a) data and discussion that there is a general agreement among Japanese linguists that the topic construction in Japanese does not involve movement. (Cf. also Kuno, 1970, 1973b.) His argument that the topic in Japanese can be base-generated in the sentence-initial position, I believe, is quite convincing. The argument is based on sentences

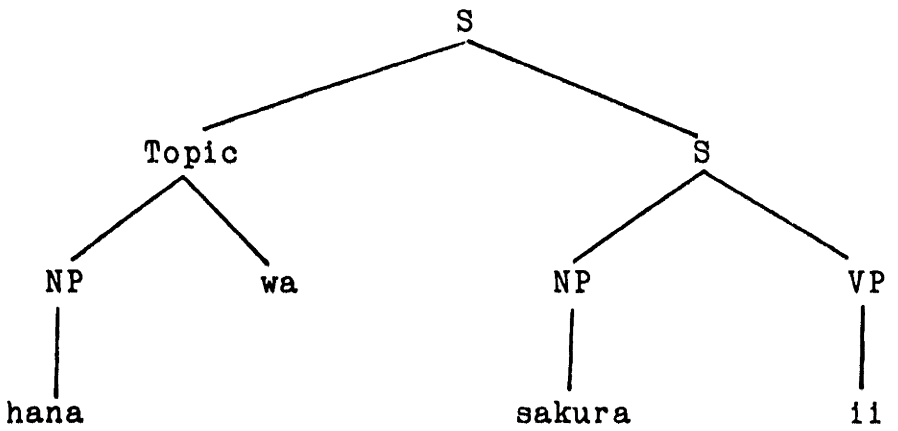
such as the following, where the topic does not bind any argument position in the sentence:

(6)a. Sakana-wa [$_S$tai-ga oisii]
fish-top red snapper-nom tasty
(Speaking of fish, red snapper is tasty)

b. Hana-wa [$_S$sakura-ga ii]
flower-top cherry blossoms-nom good
(Speaking of flowers, cherry blossoms are the best)

Since the topic does not bind any argument position in these examples, it seems impossible to derive these examples by movement. Thus, given examples such as those in (6), it seems reasonable to assume that topic in Japanese can be base-generated in the sentence-initial position. Kuno (1973a, pp. 253-254) suggests that the D-structure of (6b), for example, is as follows:[5]

(7)



We find another observation in Kuno (1973a) that seems to support his base-generation hypothesis. That is, as mentioned above, topicalization in Japanese is not constrained by the island constraints. The relevant examples (1b) and (2b) are repeated below in (8).

(8)a. Sono hito$_i$-wa [$_S$[$_{Adjunct}$ e$_i$ sinda noni] dare-mo
that person-top died although anyone

kanasimanakatta]
saddened-not-was

(Speaking of that person, no one was saddened although (he) died)

b. Sono sinsi$_i$-wa [$_S$[$_{NP}$[$_S$ e$_i$ e$_j$ kite iru] yoohuku$_j$]-ga
that gentleman-top wearing suit -nom

yogorete iru]
dirty be

(Speaking of that gentleman, the suit he is wearing is dirty)

If the topics in the sentences in (8) are moved from the position of e_i to the sentence-initial position, then we must say that the island constraints do not hold in Japanese, clearly an undesirable result. Thus, these sentences constitute further evidence for Kuno's hypothesis.

An interesting contrast is noted in Hasegawa (1981, 1984) with respect to topicalization out of relative clauses in Japanese. First, note that (8b) involves topicalization of a subject out of a relative clause contained in a subject. Hasegawa argues that topicalization out of relative clauses is allowed only in such cases, and that it is not as free as the discussion in Kuno (1973a,b) might suggest.[6] Her generalization is stated in (9).

(9) Hasegawa's Generalization

> Topicalization out of relative clauses is allowed only when the subject is topicalized out of a relative clause contained in a subject.

Although the contrast she points out is not clear-cut in many cases, I believe that it is nevertheless a real one. For example, the examples in (10a) and (10b) are somewhat worse than (8b) and (10c).

(10)a.??Ano hon$_i$-wa [$_S$John-ga [$_{NP}$[$_S$$\underline{e}_j$ $\underline{e}_i$ katta] hito$_j$]-ni
that book-top -nom bought person-to

aitagatte iru rasii]
want-to-meet seem

(Speaking of that book, it seems that John wants to meet the person who bought it)

b.?Russell$_i$-wa [$_S$John-ga [$_{NP}$[$_S$$\underline{e}_j$ $\underline{e}_i$ atta koto-ga aru]
-top -nom met fact-nom have

hito$_j$]-o mituketa rasii]
person-acc found seem

(Speaking of Russell, it seems that John found a person who actually met him)

c. Sono syoonen$_i$-wa [$_S$[$_{NP}$[$_S$$\underline{e}_i$ $\underline{e}_j$ kawaigatte ita]
that boy -top was-fond-of

inu$_j$]-ga sinde simatta]
dog -nom have-died

(Speaking of that boy, the dog that he was fond of has died)

However, it seems to me that the sentences in (10a) and (10b) are still better than their scrambling counterparts. The scrambling counterparts of (10a) and (10b) are given in (11).

(11)a.?*Ano bon -o$_i$ [$_S$John-ga [$_{NP}$[$_S$$\underline{e}_j$ $\underline{e}_i$ katta] hito$_j$]-ni
that book-acc -nom bought person-to

aitagatte iru rasii]
want-to-meet seem

(It seems that John wants to meet the person who bought that book)

b.?*Russell-ni$_i$ [$_S$John-ga[$_{NP}$[$_S$e$_j$ e$_i$ atta koto-ga aru]
-to -nom met fact-nom have

hito$_j$]-o mituketa rasii]
person-acc found seem

(It seems that John found a person who actually met Russell)

Consequently, if the examples in (11) are ruled out by the Subjacency Condition, then it is likely that the marginality of the examples in (10a) and (10b) is due to a constraint weaker than Subjacency.[7] At this point, it is not clear to me why the examples in (10a) and (10b) are worse than those in (8b) and (10c). But the contrast between the examples in (10a) and (10b) on the one hand and those in (11) on the other suggests that the former examples do not constitute a problem for Kuno's generalization that the topic construction in Japanese is not constrained by the island constraints.

We have seen above that topic in Japanese need not bind any argument position. But since topic constitutes a part of the sentence, it seems reasonable to assume that it must be licensed in some way, that is to say, it must have some syntactic and/or semantic role in the sentence. Sentences such as those in (6) are necessarily interpreted as

statements "about" the topic. (Cf. Kuno, 1973a, in particular, pp.253-254, fn.12.) Thus, sakana-wa (fish-top) in (6a), for example, is most naturally translated as "speaking of fish." We may say that the topic in such cases is licensed by some sort of "aboutness relation" holding between the topic and the rest of the sentence.

If what is required of a topic is only the "aboutness relation" with the rest of the sentence, then we should expect overt resumptive pronouns to be allowed in topic constructions in Japanese. This is so since there should be cases where the sentence following the topic is "about" the topic and at the same time contains a pronoun which is coreferential with the topic. It is already noted in Kuno (1973a) that topic construction does allow overt resumptive pronouns, although somewhat marginally, and thus, our prediction is borne out.[8]

(12)a. ?Sono nito$_i$ -wa [$_S$John-ga kare$_i$-no imooto-o yoku
that person-top -nom he -gen sister-acc well

sitte iru rasii]
know seem

(Speaking of that person, it seems that John knows his sister very well)

b. ?Hirosima$_i$-wa [$_S$Amerika-ni [$_{NP}$[$_S$e$_j$ soko$_i$-kara kita]
-top -in there-from came

hito$_j$]-ga oozei iru]
person-nom many be

(Speaking of Hiroshima, there are many people in the States who are from there)

4.1.2 Topic Construction and Empty Pronominals

We have seen above that Kuno's base-generation hypothesis for topics in Japanese is well motivated. One of the pieces of supporting evidence for this hypothesis was the fact that topicalization in Japanese is not subject to the island constraints. This is totally unexpected if the sentence-initial topic is not base-generated as such but is in the sentence-initial position due to movement. Thus, the fact in question constitutes evidence for Kuno's base-generation hypothesis to the extent that it constitutes evidence against the movement hypothesis. However, Kuno's hypothesis does not by itself account for the fact that topic construction in Japanese is not constrained by the island constraints. Let us consider the following English example:

(13) ?the candidate$_i$ who$_i$ most people that support him$_i$ are rich and conservative

In (13), which is acceptable, although marginally, to many speakers, the relation between who and him is not constrained by Subjacency. Thus, if the Subjacency Condition is a condition on movement, as argued in Lasnik & Saito (1984) (cf. also Chomsky, 1982, Huang, 1982, Pesetsky, 1982 for relevant discussion), then we cannot say that who is moved from the position of him and him itself is inserted later to cover up the trace of movement. Hence, it seems that who in this example is base-generated in COMP. If this is the case, then we must say that relative operators can be freely base-generated in COMP in English. But nevertheless, relativization in English is subject to the Subjacency Condition. Thus, (13) is totally ungrammatical without the overt resumptive pronoun, as shown below.

(14) *the candidate$_i$ who$_i$ most people that support e_i are rich and conservative

This fact suggests that the fact that a construction need not involve syntactic movement does not by itself "license Subjacency violations."

Then, why is it that topicalization in Japanese, as opposed to relativization in English, is not constrained by

the island constraints? To my knowledge, Perlmutter (1972) was the first to provide a solution to this problem. Here, without discussing the exact proposal he makes, I will simply summarize his insights in terms of the GB theory. Perlmutter (1972) is concerned with relativization, but his account directly extends to topicalization, as we will see directly.

As mentioned above, relativization in Japanese, like topicalization, is not subject to the island constraints. Kuno (1973a, pp.243-260) notes that relativization and topicalization share many other properties. For example, overt resumptive pronouns are possible in relative clauses in Japanese. (But cf. fn.8.) The following example is from Kuno (1973a, p.273):

(15) [?] [$_{NP}$[$_{S}$watasi-ga kare$_i$-no namae-o wasurete simatta]
I -nom he -gen name -acc have-forgotten
okyakusan$_i$]
guest
(?the guest who I have forgotten his name)

Furthermore, the relative head need not be coindexed with any position in the relative clause. I will again cite an example from Kuno (1973a, p.255):

(16) $[_{NP}[_{S}$Syuusyoku-ga taihen-na] buturigaku],
employment-nom difficult-cop physics

$[_{NP}[_{S}$sotugyoo-ga taihen-na] gengogaku]
graduation-nom difficult-cop linguistics

-- dono gakumon-mo yooi-de-wa nai
every discipline easy not

(Physics, where finding a job is difficult, and linguistics, where graduation is difficult -- no discipline is easy)

From these facts we can conclude that relativization need not involve movement.[9,10] In fact, as Kuno (1973a) points out, what is required of the relative head seems to be only the "aboutness relation" with the relative clause.

Let us now consider the following examples of relative clauses with "Subjacency violation":

(17)a. $[_{NP}[_{S}[_{NP}[_{S}\underline{e}_i\ \underline{e}_j$ kite iru] yoohuku$_j$]-ga yogorete iru]
wearing suit -nom dirty be

sinsi$_i$]
gentleman

(Lit. a gentleman who the suit that (he) is wearing is dirty)

b. $[_{NP}[_{S}[_{NP}[_{S}\underline{e}_i\ \underline{e}_j$ osiete ita] seito$_j$]-ga rakudaisita]
teaching was student-nom flunked

sensei$_i$]
teacher

(Lit. the teacher who the students that (he) was teaching flunked)
(Kuno, 1973a, p.239)

If $\underline{e}_i$ is produced by movement, then the examples in (17) should be ruled out by the Subjacency Condition. Thus, $\underline{e}_i$ in these examples cannot be produced by movement. But we know from examples such as (15) and (16) that relativization in Japanese need not involve movement. Thus, the only remaining problem is how the gap $\underline{e}_i$ is produced. If $\underline{e}_i$ in (17) can only be a trace of movement, then we have no account for the fact that relativization in Japanese is not subject to the island constraints. On the other hand, if $\underline{e}_i$ in (17) need not be a trace of movement, then examples in (17) can be generated without movement and we expect those examples to be grammatical.

Perlmutter (1972) argues that there is good reason to believe that gaps in relative clauses need not be produced by movement in Japanese. Japanese is a PRO-drop language in the sense that pronouns in this language need not have phonetic content. Given an appropriate context, the

following sentences are perfectly acceptable:

(18)a. e moo dekaketa yoo-desu
already went out seem

(It seems that he/she/they went out already)

b. e [$_S$' John-ga e motte kuru to] omoimasu
-nom bring COMP think

(I think that John will bring it/them)

The sentences in (18), as indicated in the translations, are interpreted as if there are pronouns in the positions of "missing arguments." Thus, we can say that those positions are actually occupied by phonetically null pronouns (pro). And once we assume that Japanese has phonetically null pronouns, nothing prevents them from appearing in relative clauses. Thus, e_i in (17) can be pro and hence, need not be a trace of movement.

Under the account outlined above, the relative clauses in (17) are not constrained by the island constraints exactly for the same reason that relative clauses with overt resumptive pronouns are not constrained by those constraints. In fact, we can say that e_i in (17) is a resumptive pronoun although it is not overt. Thus, the grammaticality of relative clauses such as those in (17) is attributed to the fact that Japanese has null pronouns,

i.e., in Perlmutter's terms, to the fact that Japanese has the rule of "PRO-drop." Relativization in English, on the other hand, is subject to the island constraints because English does not have null pronouns.

Perlmutter's account for relative clauses such as those in (17) automatically extends to cases of topicalization with "island constraint violations." Let us consider again the examples in (8), which are repeated below in (19).

(19)a. Sono hito$_i$ -wa [$_S$[$_{Adjunct}$ $\underline{e}_i$ sinda noni] dare-mo
that person-top died although anyone

kanasimanakatta]
saddened-not-was

(Speaking of that person, no one was saddened although (he) died)

b. Sono sinsi$_i$ -wa [$_S$[$_{NP}$[$_S$ $\underline{e}_i$ $\underline{e}_j$ kite iru] yoohuku$_j$]-ga
that gentleman-top wearing suit -nom

yogorete iru]
dirty be

(Speaking of that gentleman, the suit he is wearing is dirty)

As we saw above, Kuno (1973a) has shown convincingly that topic in Japanese can be base-generated in the sentence-initial position, and that what is required of a sentence-initial topic is only the "aboutness relation" with the rest of the sentence. Thus, if $\underline{e}_i$ in the examples in

(19) need not be a trace of movement, the sentences in (19) can be generated without movement and consequently, we expect these examples to be grammatical. But we know already that pronouns need not have phonetic content in Japanese. Hence, $\underline{e}_i$ in (19) can be an empty pronoun, and need not be a trace of movement. Thus, we correctly predict that the sentences in (19) should be grammatical, and more generally, we predict, again correctly, that topicalization in Japanese is not subject to the island constraints.

4.1.3 Variable Binding and the Subjacency Condition

4.1.3.1 The Condition against Free Variables

In the preceding section, I briefly reviewed Perlmutter's (1972) account of why relativization in Japanese is not subject to the island constraints, and discussed how it extends to topicalization as well. When a topic binds a gap in the sentence, it has the following structure:

(20) $[_S \text{Topic}_i\ [_S \ldots \underline{e}_i \ldots]]$

Here, the topic can be base-generated in the sentence-initial position, and $\underline{e}_i$ can be a null pronoun. Thus, a structure in (20) need not be derived by movement,

and hence, is not constrained by the island constraints.

The situation is different in the case of relativization in English, which has the following structure:

(21) $[_{NP}$ relative $head_i$ $[_{S'} wh_i$ $[_S \ldots \underline{e}_i \ldots]]]$

I assumed on the basis of examples such as the following that relative operators in English can be base-generated in COMP:

(22) ?the $candidate_i$ who_i most people that support him_i are rich and conservative

If $\underline{who}_i$ in (22) is moved from the position of $\underline{him}_i$, then this example should be ruled out by the Subjacency Condition. But (22) is, for many speakers, marginally acceptable, and is far better than (23).

(23) *the $candidate_i$ who_i most people that support $\underline{e}_i$ are rich and conservative

Thus, if (23) is ruled out by Subjacency, (22) cannot be in violation of this condition. It follows that $\underline{who}_i$ in (22) is not moved from the position of $\underline{him}_i$ but instead is base-generated in COMP.

However, the contrast between (22) and (23) indicates that a relative operator can be base-generated in COMP when it binds an overt pronoun but not when it binds an empty category. If $\underline{who}_i$ in (23) can be base-generated in COMP, then this example cannot be ruled out by the Subjacency Condition. Here, the distinction between (22) and (23) is accounted for if $\underline{e}_i$ in (23) can be produced only by movement. If this is the case, $\underline{e}_i$ in (23) must be produced by the movement of $\underline{who}_i$ and hence, (23) must violate the Subjacency Condition. In the preceding section, we attributed the insensitivity of topicalization in Japanese to the island constraints to the fact that Japanese has null pronouns, and hypothesized that (23) is ruled out because English does not have null pronouns and consequently $\underline{e}_i$ in this example must be a trace of movement.

This account crucially relies on the assumption that variables can be produced only by movement, where variable is defined as follows (cf. Chapter 2, fn.29):

(24) X is a variable if (i) $X = [_{NP}\underline{e}]$
(ii) X is in A-position
(iii) X = [-pronominal, -anaphor]

(Cf. Chomsky, 1982, pp.78-79.)

It is widely assumed that empty categories as well as lexical categories are classified in terms of the features [$\pm$ pronominal] and [$\pm$ anaphor]. (Cf. in particular, Chomsky, 1982, Chapter 5.) According to this classification, empty pronouns are empty categories with the feature specification [+pronominal, -anaphor], and traces of wh-movement in argument positions, i.e., variables, are specified as [-pronominal, -anaphor]. Thus, the trace in (25), for example, is nothing but an empty NP with the feature specification [-pronominal, -anaphor].

(25) What$_i$ did you buy t_i

If such NPs can be base-generated, then e_i in (23) can be base-generated as a variable. Then, who$_i$ and e_i can both be base-generated in (23), and consequently, under the assumption that Subjacency is a condition on movement, this example cannot be ruled out by the Subjacency Condition.

This leads us to the question of why variables cannot be base-generated. Since nothing prevents the base-generation of variables as such, it must be the case that such base-generation leads to a violation of some principle. The problem can be stated alternatively as follows:

(26) Why is it impossible to "base-generate Subjacency violations"?

This question is already discussed in Chomsky (1982). There, he hypothesizes that the content of empty categories is functionally determined at each syntactic level. In particular, he assumes the following principle of functional determination:[11]

(27) Suppose X is an $[_{NP}\underline{e}]$ in A-position.

Then X is a variable iff X is locally A'-bound.

He further assumes the following indexing mechanism:

(28)a. Move-alpha coindexes the moved constituent with its trace.

b. Free-indexing of A-positions at S-structure.

c. Free-indexing of A'-positions at LF.

Let us consider the following configuration in the light of these assumptions:

(29) $\underline{Wh}\ [_S \ldots \underline{e} \ldots]$, where $\underline{wh}$ is in A'-position and $\underline{e}$ is in A-position.

Suppose $\underline{e}$ is a trace produced by the movement of $\underline{wh}$. Then, by (28a), $\underline{wh}$ and $\underline{e}$ are coindexed. Thus, $\underline{e}$ is A'-bound by $\underline{wh}$. Now, suppose that $\underline{wh}$ and $\underline{e}$ are base-generated. Then,

since e is in A-position, it receives an index at S-structure. However, since wh is in A'-position, it does not receive an index until LF. Thus, wh and e are not coindexed at S-structure, and hence, by (27), the latter cannot be a variable at this level. Hence, it is impossible to create a wh-variable relation at S-structure by base-generation.

Chomsky's account can be maintained in its basic form independently of the functional approach to empty categories. Suppose we base-generate the following configuration:

(30) wh $[_S$ ... t ...], where wh is in A'-position and t is a variable.

Then, by (28), t, but not wh, receives an index at S-structure. Thus, t is not bound by wh at this level. Consequently, (30) can be ruled out by the following condition discussed in Chapter 3:[12]

(31) Traces (non-pronominal empty categories) must be bound. (=Chapter 3 (17))

If (31) is responsible for excluding the base-generation of wh-trace relation, then this condition clearly must apply not only at LF but also at S-structure. The indexing

mechanism in (28) allows the wh in (30) to receive the same index as t at LF, and hence, if (31) applies only at LF, then a wh-trace relation can be created by base-generation without violating this condition.

In fact, as N. Chomsky pointed out to me (personal communication), if we do not adopt the functional approach to empty categories, then there seems to be good reason to suppose that (31) applies at D-structure as well, and hence, at every syntactic level. It was noted by Chomsky (Class Lectures, Fall, 1983), among others, that the distribution of parasitic gaps is constrained by the Subjacency Condition (Cf. also Contreras, 1984.) Thus, we find contrasts such as the following:

(32)a. ?the book$_i$ which$_i$ you read t_i after telling John that you enjoyed e_i

b.?*the book$_i$ which$_i$ you read t_i after meeting a man who enjoyed e_i

Rejecting the functional approach to empty categories, and hence, the analysis of parasitic gaps based on this approach, on independent grounds, Chomsky (Class Lectures, Fall, 1983) proposes to analyze parasitic gaps as traces of

empty operators.[13] According to this hypothesis, (33a), for example, has tne structure in (33b).

(33)a. Which papers did you file without reading

b. $[_S$,Which papers$_i$ $[_S$did you file $\underline{t}_i$ $[0_i$ [without reading $\underline{t}_i$]]]]

Since parasitic gaps are produced by movement, we can now account for the fact that their distribution is constrained by the Subjacency Condition.

It is not my intent to discuss Chomsky's analysis of parasitic gaps here. But what is of interest for the purpose here is why (32b) must be in violation of the Subjacency Condition. If Subjacency is a condition on movement, as I have been assuming in this thesis, then (32b) can be ruled out by Subjacency only if parasitic gaps cannot be base-generated. In this sense, it seems to me that the examples in (32) constitute evidence against the functional approach to empty category itself. Under the functional approach, $\underline{e}_i$ in (32b) can be base-generated as, say, PRO. This is allowed since PRO is prohibited from appearing in a governed position by the Binding Theory, and the Binding Theory does not apply at D-structure.[14] At S-structure,

which is moved to COMP from the position of t and consequently is coindexed with t. Since e is in an A-position, it can receive the same index as which through free indexing at this level. Thus, e is interpreted as a variable at S-structure, and no principle is violated. Hence, under the functional approach to empty categories, we should expect (32b) to be fully grammatical. In fact, if Subjacency is indeed a condition on movement, then the examples in (32) constitute evidence not only against the functional approach to empty categories as such, but also against any theory which allows an empty category to have different feature specifications at different levels. Thus, the examples in (32) support Chomsky's (Class Lectures, Fall, 1982; Fall, 1983) and Safir's (1984) position that the features of empty categories are inherent and cannot be changed across levels.

Let us go back to the question of why e in (32b) cannot be base-generated. As noted above, if Subjacency is a condition on movement, then (32b) can be ruled out by this condition only if e in this example cannot be base-generated. First, we know on independent grounds that e in (32b) must be a variable at S-structure. It cannot be PRO or an NP trace because of the Binding Theory. And it cannot be a pro since English does not have pro. Thus, if

we adopt the hypothesis that an empty category cannot have different feature specifications at different syntactic levels, then it follows that e in (32b) cannot be base-generated as a pro, a PRO, or an NP-trace. Then, what prevents the base-generation of this empty category as a variable? At this point, it seems reasonable to assume that such base-generation results in violation of the condition in (31). But note that e in (32b) can receive an index at S-structure, and hence, at this level, can be bound by which. Thus, even if e in (32b) is base-generated as a variable, it does not violate the condition in (31) at S-structure. Hence, if the hypothesis that the base-generation of this empty category as a variable is prohibited by (31) is correct, then (31) must be operative not only at S-structure and LF but also at D-structure. If (31) applies at D-structure, then it straightforwardly follows that e in (32b) cannot be base-generated as a variable. At D-structure, which is still in the position of t, and hence e cannot be A'-bound. In fact, e cannot be bound at all at this level, since it cannot receive an index through free indexing until S-structure. Thus if e in (32b) is base-generated as a variable, it is immediately ruled out by (31) at D-structure.

As we saw above, if we do not adopt the functional

approach to empty categories, the fact that "Subjacency violations cannot be base-generated" suggests that the condition in (31) must be operative at every syntactic level. Since the recent arguments against the functional approach seem quite convincing (cf. Chomsky, Class Lectures, Fall, 1982; Safir, 1984; Brody, 1983), I will conclude that (31) indeed applies at every syntactic level, in particular, at D-structure. As noted above, once we assume that (31) applies at D-structure, it follows that variables cannot be base-generated. Free indexing of A-positions does not take place until S-structure, and hence, variables, if base-generated, have no index at D-structure. Thus, they cannot be bound at D-structure, and consequently, violate (31). Note that under this approach, it is unnecessary to stipulate that free indexing of A'-positions takes place only at LF. This stipulation was made in order to rule out the wh-variable relation created by base-generation at S-structure. But under the approach proposed here, such a relation is already ruled out at D-structure. Thus, we can assume the following simplified indexing mechanism, according to which A'-positions as well as A-positions are subject to free-indexing at S-structure.[15]

(34)a. Move-alpha coindexes the moved constituent with its trace.

b. Free indexing of A-positions and A'-positions at S-structure.

4.1.3.2 Some Differences between Topicalization and Scrambling

In Section 1.2, I discussed Perlmutter's (1972) account of the fact that relativization in Japanese is not constrained by the island constraints. There, I discussed his insights in the terms of the GB Theory without going into the details of his original proposal. An objection to his original proposal is raised in Haig (1976). Haig notes that given Perlmutter's proposal, we should expect that both topicalization and scrambling ("emphatic fronting" in Haig's terms) would be insensitive to the island constraints, but the latter, contrary to this prediction, seems to be subject to the island constraints. (Cf. examples (1)-(4).) I believe that Haig's objection is a sound one. However, it is not the purpose of this section to discuss his objection to Perlmutter's proposal. The purpose of this section is to suggest an account for the contrast between topicalization and scrambling noted by Haig.

Some examples of Subjacency violations with scrambling are

shown below.

(35)a.?*Ano hon$_i$ -o [$_S$John-ga [$_{NP}$[$_S$ e_j e_i katta] hito$_j$]-ni
that book-acc -nom bought person-to

aitagatte iru rasii]
want-to-see seem

(It seems that John wants to see the person who bought that book)

b.*Mary-o$_i$ [$_S$John-ga [$_{NP}$[$_S$ e_j e_i sagasite iru] hito$_j$]-o
-acc -nom looking-for person-acc

mikaketa rasii]
saw seem

(It seems that John saw a person who was looking for Mary)

The issue here is very similar to the one discussed in the preceding section with respect to English relative clauses, that is, why the scrambled object and e_i in the examples in (35) cannot be base-generated so that the Subjacency Condition is not violated. Or more generally, the question is why the configuration of scrambling cannot be base-generated.

Let us first consider the case of English relative clauses again. We saw above that overt resumptive pronouns can appear in English relative clauses. In this case, we have the configuration shown in (36).

(36) $[_{NP}$relative head$_i$ $[_{S'}$wh$_i$ $[_S$ ... pronoun$_i$ ...]]]

We also saw above that the relation of the relative operator and the resumptive pronoun is not constrained by the Subjacency Condition. Assuming that the Subjacency Condition is a condition on movement, we concluded that relative operators can be base-generated in COMP. But when the relative operator binds a variable, its relation with the variable is constrained by the Subjacency Condition. The relevant configuration is shown below.

(37) $[_{NP}$relative head$_i$ $[_{S'}$wh$_i$ $[_S$ ... $\underline{e}_i$ ...]]]

Since we know already that relative operators can be base-generated in COMP, if variables can also be base-generated, we do not expect the relation of <u>wh</u> and <u>e</u> in (37) to be constrained by the Subjacency Condition. I argued above that variables can be produced only by movement because of the condition in (31), and that this is why the relation of <u>wh</u> and <u>e</u> is constrained by Subjacency.

Now, let us consider the case of scrambling. The relevant configuration is shown in (38).

(38) $[_S$Scrambled phrase$_i$ $[_S$ ... $\underline{e}_i$ ...]]

The fact that scrambling is constrained by the island constraints indicates that the scrambled phrase and e in (38) cannot both be base-generated. We know already from the discussion of English relative clauses that variables cannot be base-generated. Thus, if e in (38) is a variable, then the configuration in (38) can be produced only by movement, and we do expect the relation between the scrambled phrase and e to be constrained by the Subjacency Condition. However, there is a further complication in the case of scrambling. We saw above that Japanese has empty pronouns. In fact, Perlmutter's insight was that relativization in Japanese is not constrained by the island constraints because Japanese has empty pronouns. We saw above that his insight extends to the following configuration with topicalization:

(39) $[_S \text{topic}_i \; [_S \; \cdots \; e_i \; \cdots \;]]$

As Kuno (1973a) showed convincingly, topic in Japanese can be base-generated in the sentence-initial position. And e in (39) can also be base-generated as an empty pronoun (pro). Thus, we do not have to appeal to movement to generate the configuration in (39). Consequently, we do not expect the relation of topic and e in (39) to be constrained by the Subjacency Condition. This account crucially relies

on the assumption that pro can be freely base-generated in Japanese. After all, we do expect that pro can be freely base-generated, since it is only a pronoun without phonetic features. Nevertheless, the fact that scrambling is constrained by the island constraints indicates that the following configuration cannot be base-generated:

(40) $[_S$object NP_i $[_S$ ... pro_i ...]]

At this point, it should be clear from the discussion above that if the configuration in (40) can be excluded on independent grounds, then we can account for the fact that scrambling is constrained by Subjacency. If the empty category in (38) cannot be pro and hence must be a variable, then the configuration in (38) can be produced only by movement, and consequently, we expect scrambling to be constrained by Subjacency. And given the discussion on scrambling and resumptive pronouns in the preceding chapters, we in fact expect the configuration in (40) to be ill-formed.

Recall that scrambling never allows overt resumptive pronouns. A couple of examples from the preceding chapters are repeated below.

(41)a.*John$_i$-o [$_S$Mary-ga kare$_i$-o mita] (koto)
-acc -nom he -acc saw fact

(John, Mary saw him) (=Chapter 2 (118b))

b.*Sono hon$_i$-o [$_S$John-ga [$_S$,Mary-ga sore$_i$-o katta to]
that book-acc -nom -nom it -acc bought COMP

omotte iru (koto)
think fact

(That book, John thinks that Mary bought it)
(=Chapter 3 (9a))

The following examples show the contrast between topicalization and scrambling with respect to the possibility of overt resumptive pronouns:

(42)a.??Tookyoo$_i$-wa [$_S$John-ga [$_S$,raigetu soko$_i$-ni ikoo to]
Tokyo -top -nom next month there-to go COMP

omotte iru rasii]
think seem

(Speaking of Tokyo, it seems that John is thinking of going there next month)

b.*Tookyoo$_i$-ni [$_S$John-ga [$_S$,raigetu soko$_i$-ni ikoo to]
Tokyo -to

omotte iru rasii]

(43)a.??John$_i$-wa [$_S$Bill-ga [$_S$,Mary-ga kare$_i$-o kiratte iru
-top -nom -nom he -acc dislike

to] omoikonde iru rasii]
COMP be-convinced seem

(Speaking of John, it seems that Bill is convinced that Mary dislikes him)

b.*John$_i$-o [$_S$Bill-ga [$_S$,Mary-ga kare$_i$-o kiratte iru to]
-acc

omoikonde iru rasii]

(44)a.?Sono boosi$_i$-wa [$_S$John-ga [$_{NP}$e$_j$ sore$_i$-o kabutte ita
that hat -top -nom it -acc wearing was

hito$_j$]-o yoku sitte iru rasii]
person-acc well know seem

(Speaking of that hat, it seems that John knows the person who was wearing it very well)

b.*Sono boosi$_i$-o [$_S$John-ga [$_{NP}$e$_j$ sore$_i$-o kabutte ita
that hat -acc

hito$_j$]-o yoku sitte iru rasii]

On the basis of examples such as those in (41), I suggested the following descriptive generalization in Chapter 2:

(45) An NP in an adjoined position must bind a variable.

(42b) shows that resumptive pronouns are not allowed not only with NP scrambling but also with PP scrambling. And the (a) sentences in (42)-(44) show that if topic NPs are base-generated in the position adjoined to S as suggested in

Kuno (1973a), then topic constructions in Japanese will be an exception to the generalization in (45). I will come back to these problems in the following section.

But whatever the status of (45) may be as a generalization, the examples in (42)-(44) show clearly that topicalization, but not scrambling, allows resumptive pronouns. Thus, if the topics in (42)-(44) are adjoined to S, then we can say that (45) is true in the case of scrambling and not in the case of topicalization. And this, in turn, implies that the configuration in (46a) is allowed but the one in (46b) is not.

(46)a. $[_S \text{topic}_i\ [_S \ldots \underline{\text{pro}}_i \ldots]]$

b. $[_S \text{obj} \cdot \text{t}\ \text{NP}_i\ [_S \ldots \underline{\text{pro}}_i \ldots]]$

(46b) is excluded simply because a scrambled NP must bind a variable. And given this conclusion, we expect scrambling to be constrained by Subjacency. The following configuration cannot be base-generated because the empty category must be a variable:

(47) $[_S \text{object}\ \text{NP}_i\ [_S \ldots \underline{e}_i \ldots]]$

If variables can be produced only by movement, as I argued above, then the configuration in (47) must be derived by

movement and hence, we expect it to be subject to the Subjacency Condition. Thus, given the fact that topicalization but not scrambling allows resumptive pronouns, the contrast between topicalization and scrambling with respect to Subjacency, which was noted by Haig (1976), is expected. The fact that scrambling is constrained by Subjacency seems totally consistent with Perlmutter's (1972) PRO-drop account for the absence of Subjacency effects with topicalization.

4.1.3.3 Operator Binding and Resumptive Pronouns

So far in this chapter, three constructions came into the discussion; relativization in English, and scrambling and topicalization in Japanese. We saw above that topic in Japanese need not bind any position in the sentence and can be licensed by virtue of the "aboutness relation." We also saw above that resumptive pronouns are possible in English relative clauses. But in this construction, the "aboutness relation" clearly does not suffice, as shown below.

(48)a.?the man who$_i$ if they hire him$_i$, then everyone will be happy

b.*the man who$_i$ if they hire Mary, then everyone will be happy

(49) *the circus which$_i$ elephants are interesting

And finally, we saw that scrambling never allows resumptive pronouns, and that a scrambled phrase must bind a trace. This, of course, implies that a scrambled phrase cannot be licensed by virtue of the "aboutness relation." In this section, I will briefly speculate on this three-way contrast. In particular, I will suggest that the differences between scrambling and topicalization in Japanese should be attributed to the theory of licensing, and thus, the discussion in this section is very much in the spirit of the direction of research suggested in Sportiche (1983, Chapter 3).

Let us first consider the differences between scrambling and topicalization in Japanese. As noted above, if Kuno's (1973a) suggestion is correct that topics in Japanese are in the position adjoined to S, then scrambling conforms to the following generalization but topicalization does not:

(50) An NP in an adjoined position must bind a variable.

Here, another difference between topics and scrambled phrases is that the former, but not the latter, are licensed by the "aboutness relation." In other words, the presence of a sentence-initial topic can be justified by virtue of

its having this relation with the rest of the sentence, but the presence of a scrambled phrase cannot be justified in this way. This implies that if every phrase needs to be licensed, as seems plausible, then scrambled phrases must be licensed in some other way. Given this observation, it seems reasonable to assume that a scrambled NP can be licensed only by virtue of being a binder of a variable. If Kuno (1973a) is right in that a sentence-initial topic requires only the "aboutness relation" with the rest of the sentence, then this means that such a topic can receive an interpretation by virtue of this relation. Since a scrambled NP cannot be interpreted in this way, it obviously receives an interpretation in some other way. It is not in an argument position, and hence, it cannot be interpreted as an argument of the verb. Thus, we can hypothesize that the only way that it can receive an interpretation is by virtue of being in a chain with a variable. According to this hypothesis, a variable transmits its semantic role to the scrambled phrase, and thus licenses the scrambled phrase. If only variables can form chains with scrambled NPs and transmit their semantic roles to scrambled NPs, then the fact that scrambling conforms to the generalization in (50) can be made to follow from the theory of licensing.

Although the hypothesis suggested above is still quite

speculative at this stage and the details need to be worked out, it seems to me that it provides a reasonable way to interpret the generalization in (50). According to this hypothesis, (50), to the extent that it is true, will follow from (51), and hence, as a descriptive generalization, it can be rewritten as (52).

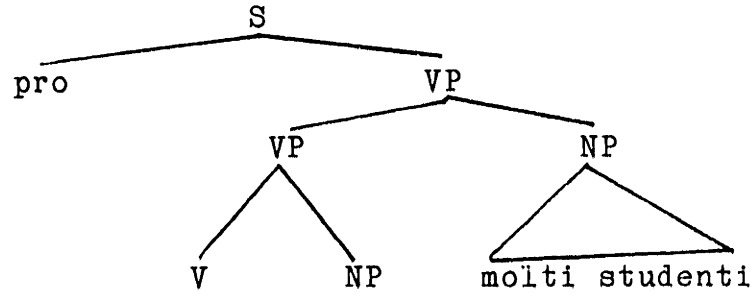
(51) NPs must be licensed.

(52) An NP in an adjoined position must bind a variable unless it is licensed in some other way.

Topic in Japanese need not bind a variable because it can be licensed by the "aboutness relation." Another exception to the generalization in (50) noted in Chapter 2 (Section 3.2) was the postverbal subject in Italian. The relevant example (130) is repeated below.

(53)a. Hanno fatto domanda molti studenti (Burzio, 1981)
have made application many students

b.



As shown in (53b), the postverbal subject is adjoined to VP, but it clearly does not bind a variable. Thus, it does not

seem to conform to the generalization in (50). However, it is widely assumed that the postverbal subject forms a chain with the empty category in the preverbal subject position, and thus, receives the semantic role assigned to this empty category. (Cf. for exmaple, Jaeggli, 1980, Chomsky, 1981, Belletti and Rizzi, 1981, Burzio, 1981.) That is, in the case of the postverbal subject in Italian, it is assumed that there is an independent mechanism which allows the transmission of the theta-role assigned to the preverbal subject position to the postverbal NP. Hence, we can assume that the postverbal subject is licensed by this mechanism, and for this reason, it does not have to bind a variable. If this hypothesis is correct, then the postverbal subject in Italian also conforms to (52).[16]

It was noted in Chapter 2 that not only scrambling but also heavy NP shift and embedded topicalization in English conform to the generalization in (50). Some relevant examples ((125) and (129)) are repeated below.

(54) He's a man to whom liberty$_i$ we could never grant (*it$_i$)
(Baltin, 1982a)

(55) John met [$_{NP}$a man that bought (*it$_i$) for his mother [$_{NP}$that painting by Rembrandt]$_i$] in the park
(Rochemont, 1984)

In these cases, there is clearly no reason to suppose that the adjoined NPs are licensed by the "aboutness relation." Furthermore, the adjoined NPs cannot be receiving semantic roles by direct theta-role assignment or by virtue of being in a chain with an expletive empty category. In (54), the topicalized NP is adjoined to S, and clearly, is not in a position of direct theta-role assignment. In (55), the heavy-NP-shifted NP is adjoined to VP. But it is an argument of the verb bought, and hence, its theta-role is assigned by this verb and not by the VP. And in both (54) and (55), there are no expletive NPs to form chains with the adjoined NPs. Thus, in embedded topicalization and heavy NP shift, we can say that NPs in adjoined positions can be licensed only by virtue of being a binder of a variable, exactly as in the case of scrambling.

If the hypothesis discussed above is in essence the correct way to interpret the generalization in (50), then it follows that relative operators in English can be licensed independently of their bindees. This is so because we hypothesized above that only variables can transmit their semantic role to their A'-binders, and as we saw above, overt resumptive pronouns are possible in relative clauses in English. Here, one difference between relative operators on the one hand and scrambled phrases, heavy-NP-shifted NPs

and embedded topics in English on the other is that only the former is in COMP. Thus, we can hypothesize that relative operators can be licensed as operators by virtue of being in COMP. This seems to be a reasonable hypothesis since there are some wh-operators that do not bind any position. For example, as shown below, whether is one of them.

(56) I don't know whether John will come

Thus, we must be able to base-generate at least some operators in COMP and license them by virtue of the fact that they are in COMP. The hypothesis here is that this is true of all operators in COMP.

Note that relative operators in COMP are licensed as operators, and not by the "aboutness relation." And certain operators do require variables in the semantic sense, i.e., vacuous quantificaton is prohibited. The constrast in (48), which is repeated below, indicates that although resumptive pronouns do not license NPs in A'-position, they can serve as variables in the semantic sense.

(48)a.?the man who$_i$ if they hire him$_i$, then everyone will be happy

b.*the man who$_i$ if they hire Mary, then everyone will be happy

The difference between relative operators in English and topics in Japanese seems to be that only the former requires a semantic variable.

Note also that the requirement on operators illustrated in (48) can be satisfied only by a restricted set of overt elements. For example, (57a) is marginal, but (57b) and (58) are totally out.

(57)a.?the man who$_i$ the fact that Mary spoke to him$_i$
upset John

b.*the man to whom$_i$ the fact that Mary spoke to him$_i$
upset John

(58)*the place where$_i$ the fact that Mary went there$_i$
upset John

The contrast between (48a) and (57a) on the one hand and (57b) and (58) on the other indicates that only pronouns (NPs) can save operators from a violation of the condition against vacuous quantification.

This observation provides us with an independent reason for why scrambled PPs must bind traces. As shown above, a scrambled PP must bind an empty category. The relevant example, (42b) is repeated below as (59).

(59)*Tookyoo$_i$-ni [$_S$John-ga [$_S$,raigetu soko$_i$-ni ikoo to]
Tokyo -to -nom next month there-to go COMP

omotte iru rasii]
think seem

(It seems that John is thinking of going to Tokyo next month)

Here, we may try to account for the ungrammaticality of (59) in terms of the theory of licensing, exactly as in the case of examples of NP-scrambling with resumptive pronouns. However, there is a reason, independent of licensing, that (59) should be ungrammatical. Suppose that the scrambled PP in (59) satisfies the requirement of licensing. Then, since it neither receives a semantic role directly nor is licensed by the "aboutness relation," it seems reasonable to assume that it is licensed as an operator. But if scrambled PPs are licensed as operators, then it is plausible that they are subject to the condition against vacuous quantification, exactly like relative operators in English. And if this is the case, then (59) can be ruled out exactly like (57b) and (58). Soko-ni (to there) in (59) is not an (NP) pronoun, and hence, cannot save the scrambled PP from the condition against vacuous quantification.

If our generalization that only (NP) pronouns can save operators from the condition against vacuous quantification

is correct, then it should not make any difference whether soko-ni (to there) in (59) is overt or empty. Here, a question may be raised as to whether there is a PP analogue of an empty pronoun. But let us suppose, for the sake of argument, that Japanese has such an element, which we may call PP-pro.[17] Then, even if we substitute this element for soko-ni (to there) in (59), then the sentence should still be ungrammatical, since according to our hypothesis, only (NP) pronouns can save operators from the condition against vacuous quantification. Thus, in the following configuration of scrambling, the empty category cannot be a PP-pro but must be a trace:

(60) $[_{S}PP_{i}\ [_{S} \cdots \underline{e}_{i} \cdots]]$

If e in (60) is a PP-pro, then the condition against vacuous quantification is violated. But if it is a trace, then there will be no violation of this condition. And if e in (60) must be a trace, then we expect PP-scrambling to be subject to Subjacency, since traces, as I argued above, can be produced only by movement. Thus, the ungrammaticality of examples such as (11b), which is repeated below as (61), is expected.

(61)?*Russell-ni$_i$ [$_S$John-ga [$_{NP}$[$_S$ $\underline{e}_j$ $\underline{e}_i$ atta koto-ga aru]
-to -nom met fact-nom have

hito$_j$]-o mituketa rasii]
person-acc found seem

(It seems that John found a person who actually met Russell)

So far in this section, I suggested the following:

(62)a. Topics in Japanese are licensed by the "aboutness relation." (Cf. Kuno, 1973a.)

b. Relative operators in English are licensed as operators by virtue of being in COMP.

c. Scrambled NPs must bind variables because of the theory of licensing.

d. Scrambled PPs must bind traces because of the condition against vacuous quantification.

It is of course quite possible that scrambled PPs require traces also because of the theory of licensing. If the discussion above is on the right track, then it is not evident that the theory of licensing is relevant in the case of PP-scrambling, since there is an independent reason that scrambled PPs must bind traces. However, since it seems that it is nothing but a stipulation to limit (62c) to NPs, I will hypothesize that the theory of licensing requires that a scrambled phrase of any category must bind a trace. According to this hypothesis, (51) and (52) can be restated

as follows:[18]

(63) XPs must be licensed.

(64) An XP in an adjoined position must bind a trace unless it is licensed in some other way.

4.2 Topicalization as a Subcase of Scrambling

We saw in the preceding section that scrambling and topicalization in Japanese have different sets of properties. In particular,

(65)a. Topicalization, but not scrambling, allows resumptive pronouns.

b. Scrambling, but not topicalization, is subject to Subjacency.

As noted above, the properties of scrambling in (65) are expected if a scrambled phrase must bind a trace. This hypothesis implies that the configuration of scrambling can be obtained only by movement. On the other hand, the property of topicalization in (65a) follows if we assume with Kuno (1973a) that topic in Japanese can be licensed by the "aboutness relation." It was also noted in the preceding section that due to the examples and discussion of topic construction in Kuno (1973a), there is a general

agreement among Japanese linguists that this construction does not involve movement. (But cf. fn.4.)

However, it should be noted that Kuno's examples show only that topic in Japanese can be base-generated. If topic can be base-generated and licensed by the "aboutness relation," then we expect that it need not bind any position in the sentence and also that resumptive pronouns are possible in topic constructions. Furthermore, given that Japanese has null pronouns, we expect the topic-e relation to be exempted from Subjacency. But it is not necessary to assume that topic must be base-generated in the sentence-initial position to obtain these consequences. We can assume equally well that a sentence-initial topic can be base-generated in that position and also can be moved to that position. In this section, I will argue that topicalization in Japanese in fact can involve movement. I will first briefly go over Kuroda's (1965b) movement analysis of topic construction in Japanese, and then, present some evidence in support of this analysis.

4.2.1 Kuroda's Movement Analysis

As noted above, Kuno (1973a) suggests that topic in Japanese is base-generated in a position adjoined to S.

Kuroda (1965b), on the other hand, proposes the following set of rules to account for the topic construction in Japanese (p.63):[19]

(66)a. Sen $\longrightarrow$ S-wa

b. wa-Attachment
$[X - NP - Y]_S$ - wa $\longrightarrow$ $[X - NP+wa - Y]_S$ - wa

c. wa-Deletion
$[X - NP+wa - Y]_S$ -wa $\longrightarrow$ $[X - NP+wa - Y]_S$

d. si-Insertion
V - AUX - wa $\longrightarrow$ V - wa - si-AUX

e. wa-Phrase Inversion
##X - NP - wa $\longrightarrow$ ##NP - wa - X, where X is not X' - NP - wa.

According to Kuroda's proposal, the derivation of (67) will be roughly as in (68).

(67) Ano hon -wa John-ga katta
that book-top -nom bought

(Speaking of that book, John bought it)

(68)a. $[_S$John+ga - ano hon - katta] - wa

$\downarrow$ wa-Attachment

b. $[_S$John+ga - ano hon+wa - katta] -wa

$\downarrow$ wa-Deletion

c. [$_S$John+ga - ano hon+wa - katta]



wa-Phrase Inversion

d. [$_S$ano hon+wa - John+ga - katta]

Kuroda's proposal to derive (68d) from (68c) seems quite attractive, since it seems that topic need not be in the sentence-initial position in Japanese. An example with topic-in-situ is shown below.[20]

(69) John-ga kinoo sono hon -o sono bubun-dake-wa
-nom yesterday that book-acc that part-only-top

yonda rasii
read seem

(It seems that John read at least that part of that book yesterday)

This example cannot be derived by preposing the subject NP John-ga to the sentence-initial position, since, as I argued in Chapter 3, subject NPs are not subject to scrambling. Thus, it seems likely that the wa-phrase in (69) is actually in the object position. And if this is the case, then examples such as (69) can be straightforwardly accounted for by making the wa-Phrase Inversion rule optional.[21] Furthermore, once we make this rule optional, there does not seem to be any reason to distinguish it from scrambling. Hence, we can simply assume that Kuroda's wa Phrase

Inversion rule is a subcase of scrambling.

Note here that if topics can appear in situ as suggested above, then it requires a stipulation to prevent Kuroda's movement derivation, unless scrambling can be prevented from applying to wa-phrases on independent grounds. Hence, it seems reasonable, at this point, to suppose that examples such as (67) can in fact be derived by movement, as proposed in Kuroda (1965b). Given this conclusion, the structure of (67), then, will be ambiguous. The sentence-initial topic may be base-generated in that position, as proposed in Kuno (1973a). In this case, the empty category in the object position will be pro. Or, the sentence-initial topic may be moved to that position, as suggested in Kuroda (1965b). In this case, nothing prevents the empty category in the object position from being a variable, and hence, the topic can be licensed as a binder of a variable without appealing to the "aboutness relation."

4.2.2 PP-topicalization

According to our hypothesis, examples such as (67) with sentence-initial topics have two possible derivations. The sentence-initial topic can be base-generated in that position or it can be moved to that position by scrambling.

But clearly, not all examples with sentence-initial topics have two possible derivations. The sentence-initial topic must be base-generated in that position when it does not bind a subjacent empty category. Thus, it is clear that we must maintain Kuno's base-generation hypothesis regardless of whether we adopt Kuroda's movement analysis or not. In this section, I will argue that there are examples of topic constructions which can be derived only by movement. This conclusion implies that we must maintain the movement analysis regardless of whether the topic can be base-generated in the sentence-initial position or not, and hence, provides further evidence for our hypothesis that examples such as (67) have two possible derivations.

We saw above that topicalization in Japanese is quite distinct from scrambling in that it allows resumptive pronouns and is not subject to Subjacency. However, the examples of topic constructions considered so far all had NP topics, and topics in Japanese are by no means limited to NPs. For example, as shown below, PPs also can appear with the topic marker <u>wa</u>.

(70)a. Pekin-ni-wa John-ga itte kita
Peking-to-top -nom made-a-trip

(John made a trip to Peking)

b. Hirosima -kara-wa hito-ga oozei kita
Hiroshima-from-top person-nom many came

(Many people came from Hiroshima)

(71)a. Pekin -ni-wa [$_S$Bill-ga [$_S$,John-ga itta to]
Peking-to-top -nom -nom went COMP

omotte iru rasii]
think seem

(It seems that Bill thinks that John went to Peking)

b. Hirosima -kara-wa [$_S$minna-ga [$_S$,hito -ga oozei
Hiroshima-from-top all -nom person-nom many

kuru daroo to] yosoosite ita]
come will COMP anticipating was

(Everyone was anticipating that many people will come from Hiroshima)

The sentences in (71) show that PP topicalization is not clause-bound.

So far, the behavior of PP topics seems perfecty normal. That is, it seems to be exactly like that of NP topics. However, when we turn to those properties that distinguish NP topicalization from scrambling, we notice that PP topicalization shares the properties of the latter and not the former. Recall, first, that scrambling, but not NP topicalization, is constrained by Subjacency. Here, as shown below, PP topicalization does seem to be constrained

by Subjacency.

(72)a. John-ga [$_{NP}$[$_{S}$Pekin-ni itta koto-ga aru] hito]-o
-nom Peking-to went fact-nom have person-acc

mituketa rasii
found seem

(It seems that John found a person who has been to Peking)

b.??Pekin-wa John-ga [$_{NP}$[$_{S}$e itta koto-ga aru] hito]-o
-top

mituketa rasii

c.?*Pekin-ni John-ga [$_{NP}$[$_{S}$t itta koto-ga aru] hito]-o
-to

mituketa rasii

d.*Pekin-ni-wa John-ga [$_{NP}$[$_{S}$e itta koto-ga aru] hito]-o
-to-top

mituketa rasii

(73)a. John-ga [$_{NP}$[$_{S}$Russell-ni atta koto-ga aru] nihonzin]-o
-nom -to met fact-nom have Japanese -acc

oozei sitteru rasii
many know seem

(It seems that John knows many Japanese who actually met Russell)

b.?Russell-wa John-ga [$_{NP}$[$_{S}$e atta koto-ga aru] nihonzin]-o
-top

oozei sitteru rasii

c.?*Russell-ni John-ga [$_{NP}$[$_{S}$t atta koto-ga aru] nihonzin]-o
-to

oozei sitteru rasii

d.*Russell-ni-wa John-ga [$_{NP}$[$_{S}$e atta koto-ga aru] nihonzin]-o
-to-top

oozei sitteru rasii

(74)a. Mary-ga [John-ga soko -ni ikitagatteru noni] musisite
-nom -nom there-to want-to-go despite ignoring

iru rasii
is seem

(It seems that Mary is ignoring John's wish to go there)

b.??Soko-wa Mary-ga [John-ga e ikitagatteru noni] musisite
-top

iru rasii

c.?*Soko-ni Mary-ga [John-ga e ikitagatteru noni] musisite
-to

iru rasii

d.*Soko-ni-wa Mary-ga [John-ga t ikitagatteru noni] musisite
-to-top

iru rasii

The (a) sentences in (72)-(73) contain a relative clause, and (74a) contains an adjunct. In the (b) sentences, an object of a postposition is topicalized out of an island. In the (c) sentences, a PP is scrambled out of an island. And in the (d) sentences, a PP is topicalized out of an island. The examples in (72)-(74) unfortunately require subtle judgements, since all of the (b)-(d) sentences are not perfect. Nevertheless, it seems to me that the contrast between the (b) sentence and the (c-d) sentences is a real

one. And if this is the case, it seems that PP topicalization, as opposed to NP topicalization, obeys the island constraints, exactly like scrambling.

If the (d) sentences in (72)-(74) are ruled out by Subjacency, as I suggested above, then the PP topics in those examples must be moved to the sentence-initial position from the position of e. This result implies that sentence-initial PP topics cannot be licensed by the "aboutness relation." If PP topics can be licensed by this relation, then there is no reason that the (d) sentences in (72)-(74) must be derived by movement. Note that the question of whether Japanese has PP-pro is irrelevant here. Suppose that there is PP-pro in this language. Then, if PP topics can be licensed by the "aboutness relation," then the topic-e relation in the (d) sentences in (72)-(74) can be base-generated and hence, Subjacency cannot be violated in these examples. On the other hand, if Japanese does not have PP-pro, then there is no reason to suppose that the empty categories in (72d)-(74d) are required by the Projection Principle. As noted in fn.16, (75b) is perfectly acceptable as an answer to (75a).

(75)a. John-wa nani-o sono tukue-no ue -ni oita no
-top what-acc that desk -gen top-on put

(What did John put on that desk)

b. Kabin-o oite ita yoodesu
vase -acc putting was seem

(It seems that John was putting a flower vase on it)

Thus, if Japanese does not have PP-pro, then it seems that the Projection Principle does not even require verbs like ok (put) to have a locative PP. But if PP topics can be licensed by the "aboutness relation," then we expect (72d)-(74d) to be allowed exactly like Kuno's examples in (6) even if there are no empty PPs in these examples.

(6)a. Sakana-wa [$_S$tai-ga oisii]
fish -top red snapper-nom tasty

(Speaking of fish, red snapper is tasty)

b. Hana -wa [$_S$sakura-ga ii]
flower-top cherry blossoms-nom good

(Speaking of flowers, cherry blossoms are the best)

Thus, whether Japanese has PP-pro or not, we can conclude on the basis of (72d)-(74d) that PP topics cannot be licensed by the "aboutness relation."[22]

If our conclusion is correct that PP topics cannot be

licensed by the "aboutness relation," then they must be licensed in some other way, most plausibly by virtue of being a binder of a trace, or at least, in some other way as an operator. Even in the latter case, PP topics will be required to bind traces, since they will be subject to the condition against vacuous quantification. If only traces and (NP) pronouns can serve as "semantic variables," as I argued above, then PP operators must bind traces to avoid violating this condition. Thus, if PP topics cannot be licensed by the "aboutness relation," it follows that they must bind traces. And since traces can be produced only by movement, we expect PP topicalization to be constrained by Subjacency.

Given the discussion above, we predict that PP topicalization should be like scrambling in another respect as well. Since PP topicalization is like scrambling in that it must involve movement, we predict that it should be like scrambling also with respect to the possibility of resumptive pronouns. And this prediction is clearly borne out. As shown below, PP topicalization never allows resumptive pronouns.

(76)a.?Russell$_i$-wa John-ga [kare$_i$-ni atta koto-ga aru hito]-o
-top -nom he -to met fact-nom have person-acc

oozei sitte iru rasii
many know seem

(Speaking of Russell, it seems that John knows many people who have actually met him)

b.*Russell$_i$-ni John-ga [kare$_i$-ni atta koto-ga aru hito]-o
-to

oozei sitte iru rasii

c.*Russell$_i$-ni-wa John-ga [kare$_i$-ni atta koto-ga aru hito]-o
-to-top

oozei sitte iru rasii

(77)a.?Hirosima$_i$-wa Amerika-ni [soko$_i$-kara kita hito]-ga
-top America-in there-from came person-nom

oozei iru
many are

(Speaking of Hiroshima, there are many people in America who came from there)

b.*Hirosima$_i$-kara Amerika-ni [soko$_i$-kara kita hito]-ga
-from

oozei iru

c.*Hiirosima$_i$-kara-wa Amerika-ni [soko$_i$-kara kita hito]-ga
-from-top

oozei iru

The (a) sentences are grammatical since NP topics can be licensed by the "aboutness relation." On the other hand, the (b)-(c) sentences are ungrammatical because scrambled

phrases and PP topics must bind traces. The (c) examples provide us with further evidence that PP topics cannot be licensed by the "aboutness relation." If the "aboutness relation" suffices to license the sentence-initial topics in (76c) and (77c), then nothing should prevent kare-ni (to him) and soko-kara (from there) from appearing in these sentences.

In this section, it was shown that PP topicalization patterns with scrambling, and not with NP topicalization, with respect to Subjacency and the possibility of resumptive pronouns. This fact, as noted above, strongly suggests that PP topicalization always involves movement.[23] I proposed to attribute this to the impossibility of licensing PP topics by virtue of the "aboutness relation."[24] The discussion in this section clearly supports Kuroda's movement analysis of topic constructions, and hence, our hypothesis that sentence-initial topics in principle can either be base-generated in that position or be moved to that position. If PP topicalization always involves movement, as I argued above, then the derivation of topic constructions by movement should be possible. And there is no reason, as far as I know, to claim that such derivation is possible for PP topicalization but not for NP topicalization. Thus,

examples such as (67) should in fact have two possible derivations.

(67) Ano hon -wa John-ga katta
that book-top -nom bought

(Speaking of that book, John bought it;
or That book, John bought)

The sentence-initial topic can be base-generated in that position, and also can be moved to that position. But when a topic does not have a subjacent coindexed empty category, it must be base-generated in that position. And when a sentence-initial topic is not licensed by the "aboutness relation," it must be moved to that position. The latter case is instantiated by the examples of PP topicalization discussed above. Given our hypothesis that "topicalization by movement" is a subcase of scrambling, it is not surprising at all that PP topicalization has the properties of scrambling, since PP topicalization is scrambling.[25]

4.3 Conclusion

In this chapter, I examined the consequences of the discussion on scrambling in Chapters 2-3 for the analysis of topic constructions in Japanese. In Section 1, comparing

the properties of topicalization and scrambling, I first defended Kuno's (1973a) hypothesis that topics in Japanese can be base-generated in the sentence-initial position. Then, I turned to Perlmutter's (1972) PRO-drop account for the fact that topicalization in Japanese is not constrained by Subjacency. I argued there that given Kuno's hypothesis that what is required of a topic is only the "aboutness relation" with the rest of the sentence, Perlmutter's account must be correct. In Section 1.3, I discussed Haig's (1976) objection to Perlmutter's account; namely that it accounts for topicalization but is falsified by the facts of scrambling. I showed there that given the fact that scrambling does not allow resumptive pronouns, we do not expect Perlmutter's account to extend to the case of scrambling. And finally, I suggested that the impossibility of resumptive pronouns with scrambling should be accounted for in terms of the theory of licensing.

The main concern of Section 2 was the derivation of the topic construction in Japanese. I first argued that although Kuno's argument that topic in Japanese can be base-generated in the sentence-initial position is quite convincing, we can consistently maintain Kuno's base-generation hypothesis and Kuroda's (1965b) movement analysis simultaneously. And then, in Section 2.2, I

presented some evidence that topicalization in Japanese can, and in some cases, must, involve movement. I suggested also that "topicalization by movement" is a subcase of scrambling. On the basis of the discussion in this chapter, I concluded that topic in Japanese can be base-generated in the sentence-initial position as suggested in Kuno (1973a), but can also be moved to that position as proposed in Kuroda (1965b).

Footnotes Chapter 4

1. In this chapter, I will use the term "Subjacency" as a cover term for both CED and the Subjacency Condition discussed in Chapter 3, Section 3.2.

2. Cf. Chapter 3, Section 3.2 for discussion of some of the unclear cases.

3. (5b) is awkward, but is itself grammatical. Examples such as (5b) which seem to have topic in situ will be discussed later in this chapter.

4. This agreement is by no means unanimous. Notably, S.-Y. Kuroda maintains the basic features of his 1965 analysis (Kuroda, 1979, fn.3, 1984). Also, an analysis of topic construction in terms of movement of an empty operator is proposed in Hasegawa (1984) and Imai (1983).

5. Kuno refers to our "topic" as "theme". This terminological difference does not have any significance in this thesis.

6. Hasegawa argues that this is also the case with relativization out of a relative clause. See also Kuno (1973a, p.240) and Inoue (1976b, pp.177-180) for similar observations on relativization out of relative clauses. Some counterexamples to Hasegawa's generalization can be found in Kornfilt, Kuno and Sezer (1980).

7. See Kornfilt, Kuno and Sezer (1980) for some relevant discussion. They argue that what appears to be a crossing effect on relativization in Japanese should be attributed to perceptual reasons and not to a grammatical principle.

8. As noted in Kuno (1973a), overt resumptive pronouns are also allowed in relative clauses. One of his

examples (p.237) is shown below.

(i)[?] [$_{NP}$[$_{S}$watasi-ga kare$_i$-no namae-o wasurete simatta]
I -nom he -gen name-acc forgot

okyakusan$_i$]
guest

(the guest whose name I have forgotten)

As indicated in the judgement, examples with overt resumptive pronouns are often marginal. Kuno states that examples such as (i) are awkward but not ungrammatical. My judgement is in accord with his. Also, as Kuno (1973a, pp.123-237) notes, overt resumptive pronouns in topic construction and relative clauses are allowed only under some circumstances. In fact, resumptive pronouns in Japanese seem to have basically the same properties as those in English. As in the case of English, we find much variation in the judgement of the speakers with respect to examples with overt resumptive pronouns. Furthermore, Japanese is like English in that an overt resumptive pronoun is allowed only when it is embedded "deeply enough." For example, (iia) is much less grammatical than (iiia).

(ii)a. (*)[$_{NP}$[$_{S}$Mary-ga kare$_i$-o nagutta] otoko$_i$]
-nom he -acc hit man

b. (*) the man$_i$ who$_i$ Mary hit him$_i$

(iii)a.(?)[$_{NP}$[$_{S}$Mary-ga [$_{S'}$kare$_i$-no imooto-ga tensai-da
-nom he -gen sister-nom genius-cop

to omotte iru] otoko$_i$]
COMP think man

b.(?) the man$_i$ who$_i$ Mary thinks that his$_i$ sister is a genius.

As is the case with its English counterpart, (iiia) is unacceptable for some speakers. (This is true for the examples in (i) and (12) as well.) But for those who accept (iiia), there is a contrast between (iia) and (iiia). The existence of such a contrast of course

does not imply that (iia) should be considered ungrammatical. My judgement is that (iia) is extremely awkward and is unacceptable as a sentence of colloquial Japanese, but is nevertheless grammatical. Cf. also Kosaka (1980) and Kuno (1980b) for relevant discussion.

9. Kuno(1973a) hypothesizes that relativization in Japanese involves the deletion of a theme [topic] under identity with the relative head. According to this hypothesis, relative clauses are base-generated with topic in the sentence-initial position, as shown below.

$$\text{(i)} \quad [_{NP}[_{S}\ \text{topic}_i\ [_{S}\ldots]]\ NP_i]$$

The topic is eventually deleted under identity with the relative head. Since Kuno assumes that topicalization does not involve movement, under his hypothesis, relativization does not involve movement either.

10. Perlmutter concludes that relativization in Japanese necessarily does not involve movement, i.e., "shadow pronoun deletion" in his terms, on the basis of the fact that overt resumptive pronouns are possible in relative clauses. Although his conclusion may be correct, examples such as (15) do not necessarily lead us to this conclusion. As shown in (13), overt resumptive pronouns are allowed, at least for some speakers, in English relative clauses as well. But this fact does not show that relativization in English does not involve movement even when the relative clause contains a gap. In fact, it is crucial for Perlmutter that the gap in an English relative clause is created by movement ("shadow pronoun deletion" in his terms), since relativization in English is subject to the island constraints.

11. X <u>binds</u> Y if (i) X and Y are coindexed, and
(ii) X c-commands Y.

X <u>locally binds</u> Y if (i) X binds Y, and
(ii) there is no Z such that
X binds Z and Z binds Y.

X <u>A'-binds</u> Y if (i) X binds Y, and
(ii) X is in an A'-position.

(Cf. Chomsky, 1981, pp.184-185.)

x <u>c-commands</u> Y if neither X nor Y dominates the other and the first branching node dominating X dominates Y.

(Cf. Reinhart, 1979.)

12. Since variables cannot be locally A-bound because of Condition (C) of the Binding Theory, (31) implies that variables must be locally A'-bound.

13. An analysis of parasitic gaps in terms of empty operators is also proposed in Contreras (1984). For further arguments against the functional determination of empty categories, see Safir (forthcoming), Brody (1984).

14. That the Binding Theory does not apply at D-structure can be easily shown by examples such as the following:

(i) They$_i$ seem to each other$_i$ [$_S$t$_i$ to be too stubborn]

At D-structure, <u>they</u> in (i) is in the position of <u>t</u>. Thus, the anaphor <u>each other</u> is not bound at this level, and hence, if the Binding Theory applies at D-Structure, (i) should be ruled out exactly as the following ungrammatical sentence:

(ii) *John said to each other$_i$ that [$_S$they$_i$ are too stubborn]

That PRO can appear in the object position at D-structure, but not at S-structure, can be shown by the following examples:

(iii)a. <u>D-Structure</u>: It is difficult [$_S$,[$_S$__ to be nominated PRO for the Nobel Prize]]

b. <u>S-structure</u>: It is difficult [$_S$,[$_S$PRO$_i$ to be nominated <u>t$_i$</u> for the Nobel Prize]]

(iv) *It is difficult [$_S$,for [$_S$John to nominate PRO for the Nobel Prize

15. In the terms of Higginbotham's (1983a) proposal to replace indices with linking, which was discussed briefly in Chapter 2, Section 3.1, (34) will be stated as follows:

(i) Link X to Y,

where (i) applies freely between any two positions at S-Structure and automatically in the case of movement. Similarly, (31) can be restated as

(ii) Traces (non-pronominal empty categories) must be linked.

16. It has been proposed recently that the postverbal subject is assigned a theta-role directly by the VP, and need not form a theta-chain with the expletive empty category in the preverbal subject position. (Cf. for example, Safir, 1982b.) Also, as noted in Chapter 2, fn. 49, Travis(1984) suggests that the postverbal subject is directly dominated by S and that there is no preverbal subject position in the construction exemplified by (52). Under these hypotheses, the postverbal subject is in an argument position and hence, will be licensed through direct theta-role assignment.

17. The fact that (ib) is possible as an answer to (ia) may be taken as evidence that Japanese has PP-pro.

(i)a. John-wa nani-o sono tukue-no ue-ni oita no
-top what-acc that desk-gen top-on put

(What did John put on that desk?)

b. Kabin-o oite ita yoodesu
vase-acc putting was seem

(It seems that John was putting a flower vase on it.)

Not only the subject John but also the locative PP sono tukue-no ue-ni (on that desk) is missing in (ib). But it is not clear that this example shows convincingly that Japanese has PP-pro.

Longobardi (1984) points out the following contrast in Italian, which he attributes to Guglielmo Cinque:

(ii)a. A chi hai dato il tuo portafoglio
'To whom did you give your wallet'

b. *Ho dato a Mario
'I gave to Mario'

(iii)a. Che cosa hai dato a Mario
'What did you give to Mario'

b. Ho dato il mio portafoglio
'I gave my wallet'

A similar contrast can be found in English. For example,

(iv)a. Where did you put the book
b. *I put on the table

(v)a. What did you put on the table
b. I put the book

As Longobardi notes, given these examples, it seems possible that the Projection Principle requires only the direct object as complement of verbs such as give and put. And if this is the case, then there is no need to assume PP-pro for (ib).

18. I assume that the extraposed S's in examples such as the following are licensed by the same mechanism that licenses the postverbal subject in Italian:

(i) It surprised me that John won the race

(ii)a. ?John believes it sincerely that Reagan is a good president
b. ?The man who believes it sincerely that Reagan is a good president arrived from Boston yesterday

In all of these examples, an S' is extraposed and adjoined to VP but does not bind a trace. I will assume here that the S's in these examples are licensed by virtue of being in a chain with expletive it. Cf. Belletti and Rizzi, 1981, Chomsky, 1981 for discussion.

19. Here, I will concentrate on Kuroda's wa-Phrase Inversion rule and will not discuss the rules in (66a-d). See Kuroda (1965b) for an extensive discussion on what he calls "attachment transformations." (Cf. also Inoue, 1969) For the data

that are relevant for the si-Inversion rule, see Kuroda (1965b, pp.58-64).

20. (68c), as it stands, is extremely awkward and may even be considered unacceptable by some speakers. However, since there are perfectly natural sentences of the same form, as shown in (69), I will assume that (68c) is fully grammatical and that the unnaturalness of this sentence is due to semantic/functional reasons.

The awkwardness of (68c) may be related to the fact that when a topic appears non-sentence-initially, it receives what has been called the "contrastive" interpretation. (Cf. Kuno 1973a, 1973b, Kuroda, 1976a, Kitagawa, 1982.) (68c) is interpreted roughly as,

(i)a. John bought that book but not the others OR
b. John bought at least that book.

Sentence initial topics also receive this interpretation when they are stressed. Further investigation into the nature of the "contrastive interpretation of wa" may lead us to the understanding of the awkwardness of topics in situ.

It should be noted here that it is not evident, at this point, that wa as a marker of theme (speaking of...) and wa as a marker of contrast (at least...) are to be distinguished semantically. It seems quite possible that wa has only one meaning but sentences with wa may be interpreted differently due to the overall semantics and pragmatics of the sentence. For example, we can hypothesize that wa is a topic marker basically in the sense of Kuroda (1965b, 1972) and that topics with old information will be interpreted as theme and topics with new information (or focus) will be interpreted contrastively. If this is the case, then the theme/contrastive distinction may partially follow from Kuno's (1978c) information flow principle, which states roughly that elements with new information tend to follow those with old information in word order. I will assume here that the theme/contrastive distinction can be accounted for along this line, and hence, that wa has only one meaning. See Kuroda (1965b, 1972, 1976a, 1976b, 1979), Kuno (1973a, 1973b), Muraki (1974), Kitagawa (1982) for discussions on the semantics and pragmatics of wa.

21. Kuroda (1965b) himself assumes that wa-Phrase Inversion is obligatory. But he also notes (p.74, fn.8) that there are instances of NP-wa that are best analyzed as not having undergone this rule.

Kitagawa (1982) proposes a non-configurational analysis of topic construction, which also accounts for the fact that topics in Japanese can appear in situ. He assumes, following Hale (1980) and Farmer (1980), that Japanese sentences are generated by a rule of the following form:

(i) S ——→ XP* V

Under his analysis, topics are freely inserted under any instance of XP, and then, evaluated pragmatically with respect to the predicate-argument structure of the verb.

22. A similar NP/PP asymmetry is noted in Cinque (1977). He shows that left-dislocation in Italian is constrained by Subjacency if the dislocated phrase is a PP but not if it is an NP. He also appeals to the notion of "aboutness" to account for this contrast. It is of coure not clear if the "aboutness" relevant for Italian left-dislocation is the same as the one discussed in Kuno (1973a). But nonetheless, as was originally pointed out to me by Luigi Rizzi (personal communication), the similarity between Italian left-dislocation and Japanese topicalization is quite striking.

23. That is, of course, aside from the cases where PP topics appear in situ. As in the case of NP topics, PP topics are allowed only marginally in situ. (Cf. fn. 19.) For example,

(i)?John-ga $[_{NP}[_{S}$Pekin-ni-wa itta koto-ga aru]
-nom -to-top went fact-nom have

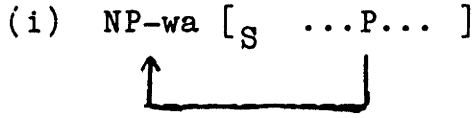
hito]-o mituketa rasii
person-acc found seem

(It seems that John found a person who has been at least to Peking.)

(i) is still far better than (72d), where the PP topic Pekin-ni-wa (Peking-to-top) is moved to the sentence-initial position.

24. A question still remains as to why PP topics cannot be licensed by the "aboutness relation," and I do not have any interesing answer to offer to this question. But the idea that only NP topics can be licensed by the "aboutness relation" seems plausible at least on intuitive grounds. Intuitively, it seems quite possible that a sentence can be construed more easily as a statement about "John" or "Tokyo" than as one about "to John" and "from Tokyo."

25. It should be noted that the analysis of NP vs. PP topicalization proposed here is somewhat reminiscent of the account of Japanese topic construction provided in Kuroda (1962). There, he suggests that topic in Japanese is always base-generated in the sentence-initial position as an NP, and further, that examples with sentence-initial PP topics are derived from D-structures of the following form through the movement of a postposition:



According to this hypothesis, NP topics are base-generated sentence-initially, but PP topicalization always involves movement.

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