Scrambling in Japanese as Pure Merge*

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Abstract
There is mounting evidence that scrambling in Japanese is an instance of Pure Merge, i.e., a movement that takes place without being motivated by the necessity of feature checking (cf. Fukui (1993); Saito and Fukui (1998); Saito (To appear)). However, a blind application of this approach predicts that anything can be scrambled anywhere in Japanese, which is not the case. There are restrictions on movable elements and possible landing sites. In order to explain away the restriction while maintaining the scrambling-as-Merge analysis, I propose that scrambling in Japanese is a syntactic operation that creates a predicate, of which a scrambled phrase becomes a subject at LF. I also show that scrambling in Japanese obeys an LF interface economy condition like the one proposed by Fox (2000). After demonstrating that the scrambling-as-Merge analysis is maintainable, I locate the availability of scrambling in Japanese in a larger picture envisaged by Saito (2002) under the name of the Derivational Configurational Parameter.

Keywords: Scrambling, Non-feature-driven movement, Pure Merge, (Non-)Configurationality, Predication, Interface economy.

1. Introduction

The theoretical status of scrambling has been radically changed over the transition from the Government and Binding (GB) theory to the Minimalist Program. In the GB framework, the sole movement rule is Move-α. Since the application of Move-α is in principle optional, anything can be moved anywhere. The well-formedness of the resulting structures is determined by universal principles such as Projection Principle, X-bar theory, Binding Theory, Empty Category Principle, and so on. In this framework, the optionality of scrambling is not considered to be a problem. Rather, scrambling could be regarded as the best illustration of Move-α. However, since the GB theory was superceded by the Minimalist Program, the optionality of scrambling has turned out to be a problem because in the Minimalist paradigm,

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Move is no longer taken to be optional and must be motivated by the necessity of feature-checking. To solve this problem, many attempts have been made to adjust scrambling to the Minimalist view of Move. For example, Grewendorf and Sabel (1999) postulate a scrambling-inducing feature (Σ-feature in their terminology) and account for a certain differences of scrambling in Japanese and German. Karimi (1999) analyzes scrambling in Persian as a movement into Topic/Focus positions in the left-periphery area of a clause. If movement into such positions is motivated by Topic/Focus features, scrambling in Persian ceases to be a problem. See Kidwai (2000), Sauerland (1999) and Miyagawa (1997, 2001) for other feature-based accounts of scrambling.

Although these feature-based accounts have a lot of conceptual and empirical advantages, they reveal weaknesses especially when they are evaluated in light of cross-linguistic variations, as pointed out by Saito (2000). For instance, scrambling in German, Hindi, and Persian clearly has a semantic effect and thus matches feature-based analyses. (I will refer to scrambling in these languages as *German-type scrambling*.) On the other hand, scrambling in Japanese and Korean does not necessarily affect interpretation. (I will call scrambling in these languages *Japanese-type scrambling*.) If this difference is taken seriously, it will be difficult to analyze Japanese-type scrambling on a par with German-type scrambling.

Assuming that there are two types of scrambling, represented by German and Japanese, we expect there to be two distinct solutions to the optionality problem. Suppose German-type scrambling is a feature-driven movement. Then, a pair of two sentences that are transformationally related by scrambling can be analyzed as starting from a different numeration. Hence, the optionality problem for German-type scrambling is solved. Now the question is: How do we handle the optionality of Japanese-type scrambling? Saito (2000) argues that scrambling in Japanese is non-feature-driven, in contrast to scrambling in German and Hindi because only the former allows (radical) reconstruction. (See Section 2 for the details.) If scrambling in Japanese is non-feature-driven, the optionality problem can be resolved in the following way. Assuming with Chomsky (2000) that Move consists of feature checking + Merge, we can think of Japanese scrambling as Move that does not involve feature-checking.[1] In other words, we can regard Japanese scrambling as an instance of pure Merge. Given Chomsky's (1995) assumption that Merge is an inevitable operation to build syntactic objects and thus applies without any cost, it follows that Japanese scrambling also applies without any cost. Accordingly, the optionality of Japanese-type scrambling does not pose any problem for the Minimalist view of Move.

Viewing scrambling in Japanese as an instance of pure Merge amounts to resurrecting the scrambling-as-Move-α-analysis in the GB era. However, the scrambling-as-Merge-analysis is

[1] More correctly, Chomsky (2000) claims that Move consists of Agree + Pied-Piping + Merge. Here, I put aside the mysterious ingredient of Move, Pied-Piping.

not so easy to maintain as the scrambling-as-Move-α-analysis for two reasons. First, the scrambling-as-Merge-analysis, just like the scrambling-as-Move-α-analysis, implies that any arbitrary element can be merged to any arbitrary position as far as the conditions on Merge such as the extension condition and the cyclicity of derivation are observed. However, the Minimalist theory has eliminated most of the grammatical principles of the GB theory. As a result, it will be unclear in many cases how the ill-formed structures are ruled out. (See section 3.) Second, even if we can solve the optionality problem with Japanese-type scrambling, there remains the deeper question: Why does Japanese allow scrambling (non-feature-driven movement) unlike English?[2] To answer this question, Saito (2002), adapting Hale's (1982, 1983) configurationality parameter to a current Minimalist framework, proposes a macro-parameter, which he refers to as Derivational Configurational Parameter (DCP).[3]

(1) Derivational Configurational Parameter (DCP):
Selectional relation (broadly construed to include feature-checking) is a necessary condition for Merge in English-type languages, but not in Japanese-type languages.
a. Merge applies only to satisfy selectional requirements. (Merge implies selection.)
b. Selectional requirements must be satisfied by the application of Merge. (Selection implies Merge.)

According to the DCP, languages with the negative value for (1a) allow Merge to apply without being forced by the necessity of feature-checking. Thus, Japanese-type languages can be analyzed as having a negative setting for this parameter.[4] On the other hand, in languages with a positive value for (1a), Merge applies only to satisfy selectional requirements including

[2] Of course, this is a good question in the GB period as well. However, given the optionality of Move-α, the real question is rather why there are languages that do not allow scrambling.
[3] See Fukui (1993) and Saito and Fukui (1998) for the view that optional movement is in fact prevalent in human language. They propose in effect that movement can be free only if it does not change the directionality of projection. Thus, in head-final languages like Japanese, leftward movement can be free, which is scrambling. On the other hand, in head-initial languages like English, rightward movement can be free, which they claim is exemplified by Heavy NP Shift, and leftward movements such as A-movement and WH-movement are allowed in English because they are enforced by the need for feature-checking. Note in passing that they argue that the fact that Japanese does not have rightward movement indicates that this language does not involve feature-checking in syntax. The idea to correlate the optionality of movement with the directionality of projection can be traced back to Saito (1985: 243), where he discusses the impossibility of rightward scrambling in Japanese.
[4] According to Saito (2002), Japanese has a negative value for parameter (1b) as well. Thus, this language allows arguments to be base-generated in a non-theta position, which raises the possibility of base-generation approach to scrambling as is proposed by Bošković and Takahashi (1998). In this paper, I will leave this possibility open. See Bailyn (2002) for a relevant discussion.

feature-checking, which entails that the application of Move is always accompanied by feature-checking. Consequently, such languages do not have scrambling (e.g., English) or may have an apparent free word phenomenon, which in fact is triggered by a feature-checking purpose, hence necessarily revealing a semantic effect as in German-type scrambling.

The DCP is very intriguing in two respects: (i) it gives us a macro-parametric guideline in the investigation of "non-configurational" phenomena; (ii) it releases us from postulating a "scrambling" feature in every apparent free word order changing operation merely for the theory-internal reason. However, it should be noticed that the validity of the DCP depends on how successful the scrambling-as-Merge-analysis is. As is mentioned above, this analysis implies that anything can be merged anywhere, but the fact is that Japanese scrambling has certain restrictions both on what can be scrambled and where it should move to. Thus, the validity of the DCP is contingent upon whether we can explain away the restrictions in a principled fashion.

The aim of this paper is to defend the DCP, which underlies the scrambling-as-Merge-analysis. The structure of the paper is as follows. Section 2 recapitulates Saito's (2000) claim that scrambling in Japanese is a non-feature-driven movement. Section 3 points out as a potential problem for the scrambling-as-Merge-analysis that there are certain restrictions both on scramblable elements and on possible landing sites. In sections 4, in order to explain away the restrictions, I will propose a semantic characterization of scrambling in Japanese and, then in section 5, I will demonstrate that the restrictions can be derived from the proposal, in tandem with an LF interface economy condition. In section 6, I will show that other will-known properties of Japanese scrambling are also derivable from the proposed theory. Section 7 concludes the paper.

2. Radical Reconstruction

This section reproduces Saito's (2000) argument that scrambling in Japanese is non-feature-driven whereas scrambling in German and Hindi is feature-driven. Let us first compare Japanese scrambling and German scrambling as regards the availability of scope reconstruction.

(2) a. dareka-ga daremo-o butta (some>every, *every>some) [Japanese]
someone-Nom everyone-Acc hit
'Someone hit everyone.'
b. daremo-o_i dareka-ga t_i butta (some>every, every>some)
everyone-Acc someone-Nom hit

(3) a. dass eine Frau jeden liebt (some>every, *every>some) [German]
that some woman everybody loves
'Some woman loves everybody.'
b. dass jeden$_i$ eine Frau t_i liebt (*some>every, every>some)
that everybody some woman loves (Fanselow 1990: 123)

(2a) and (3a) exemplify the basic word order of Japanese and German, namely, SOV. In such cases, it is normally held that only surface scope is obtainable in both languages. However, a difference emerges in a scrambled structure in which the object precedes the subject as in (2b) and (3b): Scrambling in both languages yields wide scope for the scrambled quantifier, but Japanese allows a "reconstructed" reading as well, whereas German fixes the relative scope interpretation at the surface level of representation.

Saito (2000) tries to attribute this difference to the presence of a scrambling-inducing feature in German and the absence thereof in Japanese. In other words, he claims that German scrambling is feature-driven whereas Japanese scrambling is non-feature-driven. The conceptual reasoning behind this idea stems from an economy consideration that requires that the semantic effect of a feature-driven movement be represented at LF. If a pair of two sentences that are transformationally related by a feature-driven movement yields the same interpretation, there would be no reason to bother to involve a movement-inducing feature in the numeration of one sentence to begin with.[5] Thus, economy prevents the semantic effect of feature-driven movement from being undone at LF. Let me state the condition in (4), which feature-driven movements must obey.

(4) The semantic effect of syntactic movement must be represented at LF.

This said, the impossibility of scope reconstruction with German scrambling can be taken as evidence that it is feature-driven. Thus, the numeration of (3b) is different from that of (3a) in that the former contains a scrambling-inducing feature in some lexical item (See note 5.) By contrast, the availability of reconstructed reading with Japanese scrambling follows if we assume that it is non-feature-driven and thus that it does not have to obey condition (4).[6,7]

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[5] By this I do not mean that a movement-inducing feature is an independent lexical item. I assume following Chomsky (1995) that a movement-inducing feature is contained in a bundle of features that makes up a lexical item.

[6] Scope or binding reconstruction in WH-movement in English, as illustrated in (i-ii), does not violate the condition in (4) because, whether reconstruction takes place or not, the semantic effect of WH-movement, which I take to be WH-scope marking, is represented at LF.

(i) [how many pictures] do you think [t that Mary will give everyone t]
(how many>every, how many<every)

(ii) [Which picture of himself$_i$/$_j$] does John$_i$ said [t that Bill$_j$ likes t]

Let us now consider what Saito (1989) calls radical reconstruction, which is schematically illustrated in (5).

(5) a. WH_i $[_{CP}$ t_i Q] (Syntax)
b. $\cancel{WH}_i$ $[_{CP}$ WH_i Q] (LF)

Radical reconstruction is a kind of reconstruction by which a WH-phrase or a larger phrase containing a WH-phrase that is moved out of its scope domain is interpreted as if it had not been moved. Here I interpret the implementation of the operation as the combination of deleting the higher copy and interpreting the lower one at LF as in (5b) (cf. Chomsky 1995: Ch.3). Before considering crucial data, let us see the well-formedness condition of WH-questions in Japanese. As the contrast in (6) indicates, a WH-phrase must be within the c-command domain of a question complementizer *ka*, which marks the WH-scope.

(6) a. $[_{TP}$ John-ga Mary-ni $[_{CP}$ $[_{TP}$ dare-ga kuru] ka] osieta] (koto)
John-Nom Mary-Dat who-Nom come Q taught fact
'John told Mary who was coming.'
b. *$[_{TP}$ John-ga dare-ni $[_{CP}$ $[_{TP}$ Mary-ga kuru] ka] osieta] (koto)
John-Nom who-dat Mary-Nom come Q taught fact
'John told who Mary was coming.' (Saito 1989: 190)

With this in mind, let us examine the data in (7-8). The (a)-examples are grammatical because the WH-phrase *dono hon-o* "which book-Acc" is contained within the c-command domain of the question complementizer, hence clearly observing the well-formedness condition of WH-questions. In the (b)-examples, however, the WH-phrase itself or the larger constituent containing it is scrambled out of the c-command domain of the scope marker. The resultant structures are not perfectly acceptable probably due to a processing difficulty but much better than (6b).

[7] Judging from the unavailability of scope reconstruction, it seems that scrambling in Russian belongs to German-type. See note 19 and Bailyn (2002) for Russian scrambling. It is also noteworthy that change of word order in Warlpiri and Mohawk does not necessarily yields semantic effects. Thus, they may be grouped together with Japanese. For Warlpiri see Hale (1983), Legate (2002) and references cited there and for Mohawk see Baker (1996).

(7) a. [$_{TP}$ Mary-ga [$_{CP}$ [$_{TP}$ John-ga dono hon-o tosyokan-kara karidashita] ka]
Mary-Nom John-Nom which book-Acc library-from checked-out Q
siritagatteiru] (koto)
want-to-know fact
'Mary wants to know which book John checked out from the library.'

b. ?[dono hon-o]$_i$ [$_{TP}$ Mary-ga [$_{CP}$ [$_{TP}$ John-ga t_i tosyokan-kara karidashita] ka]
which book-Acc Mary-Nom John-Nom library-from checked-out Q
siritagatteiru] (koto)
want-to-know fact (Saito 1989: 191)

(8) a. [$_{TP}$ Mary-ga [$_{CP}$ [$_{TP}$ minna-ga [$_{CP}$ [$_{TP}$ John-ga dono hon-o tosyokan-kara
Mary-Nom everyone-Nom John-Nom which book-Acc library-from
karidashita] to] omotteiru] ka] siritagatteiru] (koto)
checked-out C think Q want-to-know fact
'the fact that Mar wants to know which book everyone thinks that John checked out from the library.'

b. ??[$_{CP}$ [$_{TP}$ John-ga dono hon-o tosyokan-kara karidashita] to]$_i$ [$_{TP}$ Mary-ga
John-Nom which book-Acc library-from checked-out C Mary-Nom
[$_{CP}$ [$_{TP}$ minna-ga t_i omotteiru] ka] siritagatteiru] (koto)
everyone-Nom think Q want-to-know (fact) (Saito 1989: 192)

Saito (1989) claims that this fact indicates that semantic effects of scrambling can be cancelled at LF, yielding the same LF representation as the derivation without scrambling, as shown in (5b). Consequently, in light of condition (4), the availability of radical reconstruction with Japanese scrambling can be viewed as evidence that it is non-feature-driven.

Crucially, WH-movement in English does not undergo radical reconstruction in spite of the fact that it allows scope reconstruction. Saito (1989) notes the contrast in (9).

(9) a. Who$_i$ t_i knows [which picture of whom]$_j$ Bill bought t_j
b. ??[which picture of whom]$_i$ do you wonder who$_j$ t_j bought t_i
(Riemsdijk and William 1981, cited by Saito 1989: 187)

(9a) is ambiguous; *Whom* can take either matrix or embedded scope. When it takes matrix scope, it is assumed to undergo covert WH-movement to the Spec-C of the higher clause. Then consider (9b). This example violates a WH-island condition, as is reflected by its marginality. But the interpretation is clear; *Whom* can only take matrix scope. This means that WH-movement cannot undergo radical reconstruction. If it could, then it would be possible to reconstruct the WH-phrase *which picture of whom* into its base-position, as in (10a), then to

move *whom* to the Spec-C in the embedded clause and the rest of the WH-phrase to Spec-C in the matrix clause, as in (10b). This representation would yield embedded scope reading for *whom*, which is unavailable.

(10) a. Q you wonder [$_{CP}$ who$_j$ Q [$_{TP}$ t$_j$ bought [which picture of whom]]]
(After radical reconstruction)
b. [$_{CP}$ [which picture of t$_i$]$_k$ Q you wonder [$_{CP}$ who$_j$ [$_{C'}$ whom$_i$ Q [$_{TP}$ t$_j$ [bought t$_k$]]]]]
(After covert WH-movement)

Similarly, topicalization is not permitted to execute radical reconstruction, as is pointed by Saito (1989: 188).

(11) a. ??Who said that [the man that bought what]$_i$, John knows whether Mary likes t$_i$
b. *Mary thinks that [the man that bought what]$_i$, John knows who likes t$_i$

In each instance, *the man that bought what* is topicalized in the embedded clause across a WH-island, and so these examples are marginal to begin with. However, there is a clear contrast in grammaticality between them. In (11a), where the matrix clause is a WH-question, *what* can take matrix scope.[8] In (11b), on the hand, where the matrix clause is declarative, *what* cannot take any scope. Therefore, example (11b) is ruled out as an instance of vacuous quantification. The ungrammaticality of (11b) suggests that topicalization cannot undergo radical reconstruction because if it could, then we would have an LF representation like (11c) which results from reconstruction of the topic phrase and covert movement of *what*. If such an LF representation were obtainable, (11b) could be interpreted as a multiple embedded question, contrary to fact.

(11) c. Mary thinks that John knows [$_{CP}$ who$_i$ [$_{C'}$ what$_j$ Q [$_{TP}$ t$_i$ likes [the man that bought t$_j$]]]]

The unavailability of radical reconstruction with WH-movement and topicalization in English confirms the standard assumption that they are feature-driven movements. Hence, their semantic effects, WH-scope marking and topicality, must be represented at LF in conformity with condition (4).

Let us now turn to a comparison of Japanese scrambling with Hindi scrambling. Saito (2002) points out that scrambling in Hindi does not manifest radical reconstruction.[9,10]

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[8] In fact, *what* must take matrix scope because the topic phrase containing the WH-phrase cannot undergo radical reconstruction just like the A'-moved WH-phrase as seen in (9b).

[9] We cannot test whether German scrambling allows radical reconstruction or not because of the following two properties of German: (i) long-distance scrambling is prohibited, hence a WH-phrase

(12) a. ye baat [kii raam jaanna caahtaa hE [kii siitaa-ne laibrerii-se kOnsi kitaab nikaalii]]
this talk that Ram to-know want is that Sita-Erg library-from which book took-out
'the fact that Ram wants to know which book Sita took out from the library.'

b. *ye baat [kii kOnsi kitaab$_i$ raam jaanna caahtaa hE [kii siitaa-ne laibrerii-se t_i nikaalii]]
this talk that which book Ram to-know want is that Sita-Erg library-from took-out
(Saito 2002, the data taken from p.c. with Kidwai)

As the ungrammatically of (12b) shows, the WH-phrase *kOnsi kitaab* 'which book' cannot be scrambled out of its scope domain, the embedded clause. Once it does, then it cannot be reconstructed back to its scope domain and fails to take scope, which will be ruled out by the ban against vacuous quantification. Since scrambling in Hindi patterns with WH-movement and topicalization in English, it is reasonable to conclude that it is a feature-driven movement.

In this section, I have recapitulated Saito's (2000) claim scrambling in Japanese is non-feature-driven whereas scrambling in German and Hindi are feature-driven. This classification is based on the economy consideration that requires that the semantic effect of a feature-driven movement be represented at LF. In the reminder of this paper, I will assume that scrambling in Japanese is non-feature driven.

3. Restrictions on Scrambling in Japanese

In the previous section, we saw that scrambling in Japanese is a non-feature-driven movement. If we combine this premise with Chomsky's claim that Move consists of feature-checking + Merge, then we can regard scrambling in Japanese as an instance of pure Merge. The scrambling-as-Merge-analysis implies that anything can be scrambled anywhere in Japanese. However, this implication is not true. There are certain restrictions both on scramblable elements and possible landing sites. In this section, we will see these restrictions as a potential problem for the scrambling-as-Merge-analysis.

3.1. Impossibility of Scrambling of Predicates, Modifiers, Adjuncts, and Subjects

In Japanese, there are certain elements which cannot undergo scrambling. These include (i)

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cannot be moved out of an interrogative clause by scrambling; (ii) in-situ WH-phrases cannot be scrambled.

[10] Like German scrambling, Hindi scrambling does not allow scope reconstruction.

(i) a. hər admi kIsi ɔrət-ko pyar kərta he (every>some, *some>every)
each man some woman-Acc love does is
'Every man loves some woman.'

b. [kIsi ɔrət-ko]$_i$ hər admi t_i pyar kərta he (*every>some, some>every)
some woman-Acc each man loeve does is (Kidwai 2000: 7)

predicates, (ii) modifiers, (iii) adjuncts, (iv) subjects, (v) remnants of scrambling. Here, I will concentrate on the first four elements and defer a discussion of remnant movement to the next subsection. Let us first examine the data shown in (13-16).

(13) Scrambling of predicates

a. *Kasikoku$_i$ Taro-ga [$_{SC}$ Hanako-o t$_i$] omotta
intelligent Taro-Nom Hanako-Acc considered "
'Intelligent, Taro considered Hanako."

b. *Kasiko-i$_i$ Taro-ga [$_{CP}$ Hanako-o t$_i$ to] omotta
intelligent-Pres Taro-Nom Hanako-Acc C considered "
'Intelligent, Taro considered that Mary is."

c. ?*[Kasiko-i to]$_i$ Taro-ga [$_{CP}$ Hanako-o t$_i$] omotta
intelligent-Pres C Taro-Nom Hanako-Acc considered "
'That intelligent, Taro considered Mary is."

d. *[$_{NP}$ Toti-no zyooto-o]$_i$ John-ga Mary-ni t$_i$ sita
land-Gen giving-Acc John-Nom Mary-Dat did
'John gave Mary a land.'

(13a) shows that the predicate of a small clause (SC) cannot be scrambled. (13b-c) exemplify a peculiar construction in Japanese in which the subject of a finite clause is marked by an accusative case particle. Their ungrammaticality indicates that neither the tense-inflected predicate itself nor the predicate + C can be scrambled. (13d) indicates that nominal predicates of a light verb cannot be scrambled, which precludes a simple treatment of the impossibility of scrambling of predicates based on the categorical status (e.g., AP vs DP) or the presence/absence of a Case particle.

(14) Scrambling of modifiers

a. *Kireina$_i$ John-ga kooen-de [t$_i$ josei-ni] hitome bore sita
beautiful John-Nom park-at woman-Dat at-first-sight fall-in-love-with did
'John fell in love with a beautiful woman at the park.'

b. *[Kasiko-i]$_i$ Taro-ga MIT-de kino [t$_i$ gakusei-ni] atta
intelligent-Pres Taro-Nom MIT-at yesterday student-Dat met
'Taro met an intelligent student at MIT yesterday.'

c. *[$_{RC}$ Mary-ga hanasiteita]$_i$ Taro-wa MIT-de kino [t$_i$ gakusei-ni] atta
Mary-Nom talked-about Taro-TOP MIT-at yesterday student-Dat met
'Taro met the student yesterday who Mary talked about.'

(14a) manifests the immovability of nominal adjectives; (14b) exhibits the impossibility of

scrambling of adjectives, and (14c) shows that relative clauses cannot be scrambled.[11] All of these examples in (13-14) would be grammatical if they did not involve scrambling.

(15) Scrambling of adjuncts

a. [Riyuu-monaku] Mary-ga [John-ga sono setu-o sinjiteiru to] omotteiru
reason-without Mary-Nom John-Nom that theory-Acc believe C think
'Without any reason, Mary thinks that John believes in that theory.'

b. Naze Mary-wa [$_{CP}$ Bill-ga kubi-ni natta to] omotteiru no
why Mary-Top Bill-Nom was fired C think Q
'Why does Mary think that Bill was fired.' (Saito 1985: 175)

Both instances in (15) demonstrate that the adjuncts in the leftmost position of the sentence can only be construed with the matrix verb. This means that they cannot be analyzed as being scrambled from the lower clause; otherwise, they could be construed with the embedded verb through the trace. More generally, we may say that adjuncts cannot be scrambled any distance; they are base-generated in the position where they surface.

(16)Scrambling of subjects

a. [$_{TP}$ [$_{DP}$ san-nin-no gakusei-ga]$_i$ kinoo [$_{VP}$ t_i hon-o katta]]
3-CL-Gen student-Nom yesterday book-Acc bought
'Three students bought books yesterday.'

b. [$_{TP}$ gakusei-ga$_k$ kinoo [$_{VP}$[$_{DP}$ san-nin t_k] hon-o katta]]
student-Nom yesterday 3-CL book-Acc bought

c. [$_{TP}$ gakusei-ga kinoo [$_{VP}$ [$_{DP}$ go-satu-no hon-o] katta]]
student-Nom yesterday five-CL-Gen book-Acc bought
'Student bought five books yesterday .'

d. [hon-o$_i$ [$_{TP}$ gakusei-ga kinoo [$_{VP}$ [$_{DP}$ t_i go-satu] katta]]]
book-Acc student-Nom yesterday five-CL bought

e. *[$_{TP}$ gakusei-ga hon-o kinoo san-nin katta]
student-Nom book-Acc yesterday 3-CL bought
'Three students bought books yesterday.'

f. *[gakusei-ga$_k$ [hon-o$_i$ [$_{TP}$ t_k kinoo [$_{VP}$[$_{DP}$ t_k san-nin] t_i katta]]]]
student-Nom book-Acc yesterday 3-CL bought

Saito (1985) demonstrates that subjects cannot be scrambled, based on the data involving

[11] Since adjectives in Japanese, when used attributively, involve a tense morpheme, as in *kasiko-i* "intelligent-Pres," it is often argued (e.g., Shibatani (1978)) that they form a relative clause. If so, example (14b) illustrates the same point as (14c), the impossibility of scrambling of relative clauses.

floating quantifiers (FQs).[12,13] First, consider the (16a-b) and the (16c-d) pairs. In (a) and (c), the numeral quantifier immediately precedes the nominal they are associated with whereas in (b) and (d), the numeral quantifier and the nominal are separated with their grammaticality intact. Saito assumes the following licensing condition on FQs: floating quantifiers must be adjacent to a trace of the nominal they are construed with. In the present cases, the FQ is licensed because it is adjacent to the subject A-trace in (b) and because it is adjacent to the scrambling trace of the object in (d). Keeping this in mind, let us examine example (e), where the floating quantifier which is supposed to be associated with the subject is separated by the object and the adverb. If this instance could be analyzed as shown in (f), where the object is scrambled to the left of the subject and the subject is further scrambled to the left of the object. Then, the ensuing structure satisfies the licensing condition for FQs, with the FQ adjacent to the subject A-trace. However, the example is ungrammatical. This means that there must be some illegal step in the derivation of (16f). The derivation involves (i) A-movement of subject, (ii) scrambling of object, (iii) scrambling of subject. Given that (i) and (ii) as well as multiple scrambling are well-established in Japanese, it follows that it is scrambling of subject that counts as an illegal step in the derivation of (16f).[14] I will take this conclusion to be correct and set it as an explanandum of this paper.

3.2. The Impossibility of Remnant Scrambling

As a possible problem for his Scrambling-as-Move-α-analysis, Saito (1985) discusses why remnants of scrambling cannot be scrambled. (Hereafter, I will refer to the scrambling of remnants of scrambling as *remnant scrambling*.) Let us examine the examples in (17). (17a) represents a canonical word order of a sentence that embeds another clause. (17b) shows that the embedded object can be long-distance scrambled and (17c) indicates that the embedded clause can be scrambled to the left of the matrix subject. However, as shown in (17d), these two instances of scrambling cannot be applied simultaneously.

(17) a. John-ga Mary-ni [$_{CP}$ Taro-ga Hanako-o nagutta to] itta
John-Nom Mary-Dat Taro-Nom Hanako-Acc hit C said
'John said to Mary that Taro hit Hanako.'

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[12] The time of his writing was a couple of years before the VP-internal subject hypothesis was proposed by Fukui (1986), Speas (1986), Sportiche (1988) and so on. Thus, Saito assumes that subjects are base-generated below S. Here I will adapt his assumption to this widely accepted hypothesis.

[13] Saito's (1985) main concern was why subjects cannot be long-distance scrambled. As we will see in section 5.1, long-distance scrambling of subjects in fact is possible.

[14] See section 6.2 for a discussion of multiple scrambling.

b. Hanako-o$_i$ [$_{TP}$ John-ga Mary-ni [$_{CP}$ Taro-ga t_i nagutta to] itta]
Hanako-Acc John-Nom Mary-Dat Taro-Nom hit C said
c. [$_{CP}$ Taro-ga Hanako-o nagutta to]$_j$ John-ga Mary-ni t_j itta
Taro-Nom Hanako-Acc hit C John-Nom Mary-Dat said
d. *[$_{CP}$ Taro-ga t_i nagutta to]$_j$ Hanako-o$_i$ John-ga Mary-ni t_j itta
Taro-Nom hit C Hanako-Acc John-Nom Mary-Dat said

The ungrammaticality of (17d) is not due to the ban on the application of multiple scrambling of a nominal and a clausal argument, which is fine as proved by (18).

(18) Mary-ni$_j$ [$_{CP}$ Taro-ga Hanako-o nagutta to]$_i$ John-ga t_j t_i itta
Mary-Dat Taro-Nom Hanako-Acc hit C John-Nom said
'To Mary, that Taro hit Hanako, John said.'

How do we rule out example (17d) and rule in example (18)? Notice that (17d) differs from (18) in that the former contains an unbound trace of the scrambled object, which violates the Proper Binding Condition (PBC).

(19) Proper Binding Condition
Traces must be bound. (Saito 1985: 170)

Since there is an independent reason for the ungrammaticality of (17d), Saito (1985) concludes that examples like (17d) do not require any restriction on the application of scrambling in Japanese.

If the PBC is a real constraint, the impossibility of remnants scrambling will not pose a problem for the scrambling-as-Merge-analysis as well. However, since we do not yet understand the nature of the PBC, this conclusion is not warranted. Therefore, I take the ungrammaticality of examples like (17d) as a potential problem, just in case that it turns out that the PBC does not capture any significant generalization of natural language.[15]

[15] There are some attempts to attribute the PBC effects to independent principles of a grammar. Kitahara (1997) and Sauerland (1999) try to derive the PBC effects from the Minimal Link Condition and the A-over-A constraint. Kuno (2000) and Takahashi (2000) propose that the PBC can be regarded as a constraint imposed on the linearization process in the phonological component. Cecchetto (2000) and Hiraiwa (2002) claim that the PBC effects are derivable from the Phase Impenetrability Condition of Chomsky (2000, 2001). Saito (To appear) suggests a way to view the PBC as a constraint on the application of Merge.

3.3. Landing Sites of Scrambling

Let us now to turn restrictions on the landing sites of scrambling. The scrambling-as-Merge-analysis implies that any position can be a landing site of scrambling as far as the extension condition is observed.[16] Accordingly, it is predicted that sentence-peripheral and VP-peripheral positions are possible landing sites of scrambling. Indeed, the data so far examined show that the left-edge of a sentence can be a landing site of scrambling.[17] Thus, an argument of an embedded clause can be scrambled to the left edge of a matrix sentence as in (20a) and (21a) or to the left edge of an embedded clause as in (20b) and (21b).

(20) a. [sono hon-o_i [$_{TP}$ John-ga minna-ni [$_{CP}$ [$_{TP}$ Mary-ga t_i motteiru] to] itta]] (koto).
that book-Acc John-Nom everyone-Dat Mary-Nom have C said fact
'John told everyone that Mary has that book.'

b. [$_{TP}$ John-ga minna-ni [$_{CP}$ [sono hon-o_i [$_{T'}$ Mary-ga t_i motteiru]] to] itta] (koto).
John-Nom everyone-Dat that book-Acc Mary-Nom have C said fact

(21) a. ?[Boston-e_i [$_{TP}$ Masao-ga Kumiko-ni [$_{CP}$ [$_{TP}$ Takashi-ga t_i itta] to] itta]] (koto).
Boston-to Masao-Nom Kumiko-Dat Takashi-Nom went C said fact
'Masao told Kumiko that Takashi went to Boston.'

b. [$_{TP}$ Masao-ga Kumiko-ni [$_{CP}$ [Boston-e_i [$_{TP}$ Takashi-ga t_i itta]] to] itta] (koto).
Masao-Nom Kumiko-Dat Boston-to Takashi-Nom went C said fact

As for scrambling to a VP-peripheral position, the permutation of the double objects within VP could be a candidate. As shown in (22b), the direct object (DO) is moved to the left of the indirect object (IO).[18]

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[16] By virtue of the extension condition, DPs/NPs and PPs, once built into a structure, cannot be landing sites of scrambling. But Takano (2002) argues for this possibility in the formation of what he calls surprising constituents (= a focused element that consists of more than one DP/NP or PP). In this paper, I will not discuss whether the movement in the formulation of a surprising constituent is scrambling or not. Also, I will leave untouched the issues concerning DP/NP-internal scrambling. See note 25 and Saito (1985) for discussion.

[17] Saito has been arguing that the landing site of scrambling is an adjoined position. Saito (1985) argued that it is an S-adjoined position; Saito (1992), adopting the IP-system, regards it as an IP-adjoined position. I will leave the exact landing site unspecified until section 4.

[18] Here I assume that the IO-DO is the base order. But see Miyagawa (1997), who contends that there is no fixed initial word order for the objects of ditransitive verbs. According to him, both IO-DO and DO-IO orders could be a result of either base generation or movement.

(22) a. [$_{TP}$ John-ga [$_{VP}$ Mary-ni kono syasin-o miseta/ageta/okutta]]
John-Nom Mary-Dat this picture-Acc showed/gave/sent
'John showed/gave/sent Mary this picture.'
b. [$_{TP}$ John-ga [$_{VP}$ kono syasin-o$_i$ Mary-ni t_i miseta/ageta/okutta]]
John-Nom this picture-Acc Mary-Dat showed/gave/sent
'John showed/gave/sent this picture to Mary.'

Moreover, it is pointed out by Saito (1985: 225-226) that an object of a control clause can be scrambled to the position between the matrix subject and the controller argument, which he identifies as a VP-adjoined position. (23b) is a case in point.[19]

(23) a. [$_{TP}$ John-ga Mary-ni [PRO kono ronbun-o yomu youni] meijita]
John-Nom Mary-Dat this paper-Acc read C ordered
'John ordered Mary to read this paper.'
b. [$_{TP}$ John-ga [$_{VP}$ kono ronbun-o$_i$ Mary-ni [PRO t_i yomu youni] meijita]]
John-Nom this paper-Acc Mary-Dat read C ordered

Given the data in (22-23) (and note 18), it seems that VP-peripheral positions can also be a landing site of scrambling as expected under the scrambling-as-Merge-analysis. However, if the movement of an embedded object in (23b) is scrambling and there is a landing site at the VP-peripheral position, it should be possible to scramble an embedded object out of a finite clause to the VP-peripheral position in an upper clause. This prediction is not borne out. As shown in (24-25), the resulting structures are marginal to almost unacceptable, hence a problem for the present analysis.[20]

(24) ??[$_{TP}$ John-ga [$_{VP}$ sono hon-o$_i$ minna-ni [$_{CP}$ [$_{TP}$ Mary-ga t_i motteiru] to] itta]] (koto).
John-Nom that book-Acc all-to Mary-Nom have C said fact
'John told everyone that Mary has that book.' (Saito 1985: 267)

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[19] The so-called Raising-to-Object exemplified by (i-b) in which the embedded subject is moved to the left of the matrix adverb could also be analyzed as an indication that VP can be a landing site of scrambling, contrary to Kuno (1976) and Hiraiwa (2001) among many others.
(i) a. John-ga [$_{VP}$ orokanimo [$_{CP}$ Mary-o kasikoi to] omotta] (koto)
John-Nom foolishly Mary-Acc intelligent C considered (fact)
'John stupidly' considered that Mary is intelligent
b. John-ga [$_{VP}$ Mary-o$_i$ [$_{VP}$ orokanimo [$_{CP}$ t_i kasikoi to] omotta]] (koto)
John-Nom Mary-Acc foolishly intelligent C considered (fact)

[20] Saito (1985) cites an example like (23b) as evidence for his scrambling-as-Move-α-analysis and leaves the marginality of (24) unexplained.

(25) ?*[$_{TP}$ Masao-ga [$_{VP}$ Boston-e$_i$ Kumiko-ni [$_{TP}$ Takashi-ga t$_i$ itta to] itta]] (koto).
Masao-Nom Boston-to Kumiko-Dat Takashi-Nom went C said fact
'Masao told Kumiko that Takashi went to Boston.' (Sakai 1994: 295)

How do we account for the contrast between (22b) and (23b) on the one hand and (24) and (25) on the other? Since, to the best of my knowledge, there is no independent principle or constraint that blocks the scrambling in (24-25), there is enough reason to set forth a restriction on possible landing sites of scrambling. To explain the ill-formedness of examples (24-25), let us hypothesize that there is no landing site of scrambling within VP. Then, a question arises: What movement is involved in examples (22b) and (23b)? Answers to this question can be found in those works such as Ura (2000) for the permutation of double objects and Uchibori (2001) for the movement out of a control clause. They argue that the movements involved in instances like these are object shift. Here adopting their analyses, I will assume that apparent cases of VP-internal scrambling are object shift.[21,22]

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[21] Given that subjects cannot be scrambled and that VP cannot be a landing site of scrambling, it is predicted that the embedded subject in (24-25) cannot be scrambled to the VP-edge of the matrix clause. The prediction is borne out as shown in (i) and (ii).

(i) *[$_{TP}$ John-ga [$_{VP}$ Mary-ga$_i$ minna-ni [$_{CP}$ [$_{TP}$ t$_i$ sono hon-o motteiru] to] itta]] (koto).
John-Nom Mary-Nom all-to that book-Acc have C said fact
'John told everyone that Mary has that book.'

(ii) *[$_{TP}$ Masao-ga [$_{VP}$ Takashi-ga$_i$ Kumiko-ni [$_{TP}$ t$_i$ Boston-e itta to] itta]] (koto).
Masao-Nom Takashi-Nom Kumiko-Dat Boston-to went C said fact
'Masao told Kumiko that Takashi went to Boston.'

It is noteworthy that these instances are much worse than (24-25). This is probably because they involve scrambling of an unscramblable element to a position ineligible for a landing site, augmenting the degree of deviance.

[22] There is another piece of evidence that VP cannot be a landing site of scrambling. Miyagawa (1986) convincingly shows that Japanese has a restructuring rule, by which two VPs are collapsed into one. Verbs such as *ik* "go" *kur* "come" are typical verbs that trigger a restructuring. Example (i-a) contains a past form of a restructuring verb as the head of VP1. When restructuring takes place, the head of VP2 is fused with the head of VP1, *kaw* "buy" in the present case, so that the boundary that delineates the two VPs disappears syntactically, which I represent by omitting the VP1 bracket and connecting the two verb heads in boldface as show in (i-b). Notice that when restructuring takes place, *sono-hon-o* "that book-Acc," which is originally the internal argument of VP1, can show up anywhere within the VP2 as shown in (i-c&d).

(i) a. John-ga [$_{VP2}$ zitensya-de Kanda-ni [$_{VP1}$ sono-hon-o kai-ni] itta]
John-Nom bicycle-by Kanda-to that-book-Acc buy-to went
'John went to Kanda to buy that book.
b. John-ga [$_{VP2}$ zitensya-de Kanda-ni sono-hon-o **kai-ni-itta**]
John-Nom bicycle-by Kanda-to that-book-Acc buy-to went
c. John-ga [$_{VP2}$ zitensya-de sono-hon-o Kanda-ni **kai-ni-itta**]
John-Nom bicycle-by that-book-Acc Kanda-to buy-to went
d. John-ga [$_{VP2}$ sono-hon-o zitensya-de Kanda-ni **kai-ni-itta**]
John-Nom that-book-Acc bicycle-by Kanda-to buy-to went

With this background in mind, let us consider (ii-a). In this instance, restructuring is blocked because there is an intervening element *Kanda-ni* 'Kanda-to' between the head of VP1 and that of

4. Proposal

The scrambling-as-Merge-analysis implies that any arbitrary element can be scrambled to any arbitrary position in Japanese unless the conditions on the application of Merge are violated. However, as we saw in the last section, it is impossible to apply scrambling to predicates, modifiers, adjuncts, subjects, and remnants of scrambling. (Hereafter, I will refer to these elements as *unscramblable elements*.) I also hypothesize, assuming that apparent VP-internal scrambling is an instance of object shift, that the landing site of scrambling must be sentence-peripheral positions. In the face of these restrictions, can we maintain the scrambling-as-Merge-analysis or is there any advantage to do so if we put aside the data concerning radical reconstruction? Under the scrambling-as-Merge-analysis, it is undesirable to say that scrambling simply cannot "see" the unscramblable elements because such a provision cannot be derived from the conditions imposed on Merge. However, if we assume that scrambling in Japanese is feature-driven, then it will in principle be possible to stipulate that unscramblable elements cannot be scrambled because they cannot carry a scrambling-inducing feature. On this account, the lack of a scrambling-inducing feature in the unscramblable elements explains why they cannot be scrambled in essentially the same way as the lack of a WH-feature in proper names explains why they cannot undergo WH-movement. Similarly, the restriction on landing sites can be captured by stating that only a certain head in the sentence-peripheral position, say, T can take on a feature that attracts a carrier of a scrambling-inducing feature. However, this account is no more than a restatement

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VP2. In case restructuring is blocked, the internal argument of VP1 cannot turn up between the subject and an element of VP2 as in (ii-b) although it can show up at the initial position of the sentence as in (ii-c). Miyagawa (1986) takes contrasts like the one between (i-c&d) and (ii-b) as evidence for the claim that Japanese does have a restructuring rule that can be executed if a restructuring verb is adjacent to the head of an inner VP. However, he does not explain why it is impossible to scramble the internal argument of VP1 to the position between the subject and an element of VP2 as in (ii-b). Here, I would like to interpret the impossibility of having such an instance of scrambling as another piece of evidence that VP cannot be a landing site of scrambling. (This which in turn supports the hypothesis that movement to the edge to VP observed in (22b), (23b) and note 19 is an instance of object shift.) For the sake of completeness of argument, let me hypothesize that the permutation observed in (i-c&d) results from free base-generation within the restructured VP. This sort of hypothesis has already been entertained by Miyagawa (1996, 1997) with respect to the permutation of internal arguments of ditransitive verbs, and I think that this is a natural consequence of elimination of the D-structure (and the Projection Principle) and thus shifting the role of assignment/interpretation of a theta-role to the LF interface.

(ii) a. John-ga [$_{VP2}$ zitensya-de [$_{VP1}$ sono-hon-o kai-ni] Kanda-ni itta]
John-Nom bicycle-by that-book-Acc buy-to Kanda-to went
'John went to Kanda to buy that book.

b. *[$_{TP}$ John-ga [$_{VP2}$ sono-hon-o zitensya-de [$_{VP1}$ t_i kai-ni] Kanda-ni itta]]
John-Nom that-book-Acc bicycle-by buy-to Kanda-to went

c. sono-hon-o [$_{TP}$ John-ga [$_{VP2}$ zitensya-de [$_{VP1}$ t_i kai-ni] Kanda-ni itta]]
that-book-Acc John-Nom bicycle-by buy-to Kanda-to went

of the restrictions and will not lead us to any deeper understanding of scrambling in Japanese. Furthermore, given the fact that predicates, modifiers and adverbs can be scrambled in languages like Russian, as shown in (26), we would have to explain why the possible carriers of a scrambling-inducing feature differ from one language to another.[23]

(26) a. On [dovol'noj rabotoj Marii]$_i$ sčitaet ee t_i davno
he-Top satisfied-Fem work-Instr Mary-Gen consider her long since
'He has considered her satisfied with Mary's work long since.' (Bailyn 2002: 643)
b. Ja zelenujui$_i$ xoču, čtoby ty kupila [t_i knigu]
I green-Acc want that you buy book-Acc
'I want you to buy a green book.' (Ibid: 648)
c. Ja bystro$_i$ xoču, čtoby oni t_i dopisali kursovye
I quickly want that they wrote papers
'I what them to write their papers quickly.' (Ibid: 648)

Considering these difficulties with the feature-based analysis, it seems too premature to abandon the scrambling-as-Merge-analysis.

In order to maintain the scrambling-as-Merge-analysis and ultimately to defend the Derivational Configurationality Parameter that underlies the analysis, I propose that scrambling in Japanese be characterized as in (27).

(27) Scrambling in Japanese is a syntactic operation that merges a maximal projection with a root constituent and turns that root constituent into a predicate at LF.

(28) illustrates this process. (28a) and (28b) are transformationally related by the scrambling of the object *kono hon-o* 'this book-Acc.' Here I assume, adopting the theory of agreement and phrase structure proposed by Fukui (1986) and Kuroda (1988), the landing site of scrambling is an outer Specifier of T. When the syntactic object involving scrambling is transferred to LF, the trace of a scrambled phrase is converted into a variable to be bound by the scrambled phrase, as shown in (28c).[24] In other words, the T' constituent is rendered into

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[23] Scrambling in Russian seems to be a feature-driven movement because it does not allow scope reconstruction. We cannot test the availability of radical reconstruction because Russian does not allow long-distance scrambling.
(i) a. Kto-to xočet, čtoby Boris uvidel každogo mal'čika (some>every, *every>some)
someone-Nom wants that Boris saw [every boy]-Acc
'Someone wants Boris to see everybody.'
b. [Každogo mal'čika]$_i$ Kto-to xočet, čtoby Boris uvidel t_i (*some>every, every>some)
[every boy]-Acc someone-Nom wants that Boris saw (Bailyn 2002: 642)

[24] One could argue that if we are to establish a binder-variable relation by movement, the binder must

a predicate, to which the scrambled grammatical object is applied as the subject of predication. Thus, the LF representation in (28c) can be paraphrased as in (28d).[25]

(28) a. [$_{TP}$ John-ga kino Harvard bukkusutoa-de kono hon-o katta]
John-Nom yesterday Harvard Bookstore-at this book-Accbought
'This book, John bought at Harvard Bookstore.'
b. [$_{TP}$ kono hon-o$_i$ [$_{T'}$ John-ga kino Harvard bukkusutoa-de t_i katta]] (Syntax)
this book-Acc John-Nom yesterday Harvard Bookstore-at bought
'This book, John bought at Harvard Bookstore.'
c. [$_{TP}$ kono hon-o$_i$ [$_{T'}$ John-ga kino Harvard bukkusutoa-de x_i katta]] (LF)
this book-Acc John-Nom yesterday Harvard Bookstore-at bought
d. This book is such that John bought *it* at Harvard Bookstore yesterday.

However, this is not the only way to interpret the example in (28b). Since scrambling in Japanese is by assumption non-feature-driven, the scrambled object can undergo radical reconstruction without violating the economy condition in (4), which is repeated in (29).

(29) The semantic effect of syntactic movement must be represented at LF.

If we assume the copy theory of movement of Chomsky (1995), the mechanism of radical reconstruction can be analyzed as a deletion of the head of a chain. Thus, we will obtain an LF representation such as (30) for (28b).

(30) [$_{TP}$ ~~kono hon-o~~ [$_{T'}$ John-ga kino Harvard bukkusutoa-de kono hon-o katta]] (LF)
John-Nom yesterday Harvard Bookstore-at this book-Acc bought
'John bought this book at Harvard Bookstore.'

When the scrambled phrase gets deleted, then its trace cannot be converted into a variable because if it is, the variable will remain unbound and the resultant structure will violate the

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occupy an A'-position such as TP-adjoined position. Indeed, Saito (1985) claims that the landing site of scrambling is an adjoined position and that traces of scrambling are variables. I have nothing special to say about such criticism, but even if it is proved that the landing site of scrambling is a TP-adjoined position, it will not affect the following argument in any crucial respect. All we will have to do is to make a necessary adjustment in the discussion of an A-movement property of scrambling (See note 32). Since the theoretical status of A/A'-distinction and substitution-vs-adjunction distinction is an unsettled issue, I will leave the related questions open.

[25] Although scrambling seems to affect the focus structure of a sentence, especially in the case of long-distance scrambling, the exact semantic import scrambling is far from clear. Accordingly, this paraphrase should be regard as a conventional way to capture the nuanced meaning of scrambled sentences.

ban against free variable. Therefore, when radical reconstruction takes place, as in (30), the scrambled element is interpreted in its base-position via the assignment of a thematic role, not via predication. In this case, the LF representation of (28b) will be exactly the same as that of (28a).

5. Deriving the Restrictions on Scrambling in Japanese

In this section, I will demonstrate that the semantic-functional characterization of scrambling in Japanese in (27), repeated in (31), enables us to explain away the restrictions in combination with an economy condition to be proposed.

(31) Scrambling in Japanese is a syntactic operation that merges a maximal projection with a root constituent and turns that root constituent into a predicate at LF.

5.1. The Impossibility of Scrambling of Predicates, Modifiers, Adjuncts and Subjects: Revisited

In section 3.1, we saw that it is impossible to move predicates, modifiers, adjuncts, and subjects by scrambling in Japanese. A representative example for each case is repeated below.

(32) Scrambling of predicates

*[$_{TP}$ Kasikoku$_i$ [$_{T'}$ Taro-ga [$_{SC}$ Hanako-o t$_i$] omotta]]

intelligent Taro-Nom Hanako-Acc considered "

'Intelligent, Taro considered Hanako.'

(33) Scrambling of modifiers

*[$_{TP}$ Kireina$_i$ [$_{T'}$ John-ga kooen-de [t$_i$ josei-ni] hitome bore sita]]

beautiful John-Nom park-at woman-Dat at-first-sight fall-in-love-with did

'John fell in love with a beautiful woman at the park.'

(34) Scrambling of adjuncts (The sentence-initial adjunct must be construed with the matrix verb)

[$_{TP}$ [Riyuu-monaku] [$_{T'}$ Mary-ga [John-ga sono setu-o sinjiteiru to] omotteiru]]

reason-without Mary-Nom John-Nom that theory-Acc believe C think

'Without any reason, Mary thinks that John believes in that theory.'

(35) Scrambling of subjects

*[$_{TP}$ gakusei-ga$_k$ [$_{T'}$ hon-o$_i$ [$_{T'}$ t$_k$ kinoo [$_{VP}$[$_{DP}$ t$_k$ san-nin] t$_i$ katta]]]]

student-Nom book-Acc yesterday 3-CL bought

'Three students bought books yesterday.'

Given the semantic-functional characterization of Japanese scrambling in (31), it seems that the impossibility of scrambling of predicates, modifiers, and adjuncts straightforwardly

follows because they can never be a subject of predication, hence ineligible targets of scrambling. Strictly speaking, however, this argument has a fatal flaw because Merge is blind to the semantic consequences of its application. So it should in principle be possible to merge these unscramblable elements with TP, and the resultant structures will be rendered interpretable through radical reconstruction. Taking (32) for example, its LF representation can be illustrated as in (36).

(36)[$_{TP}$ ~~Kasikoku~~ [$_{T'}$ Taro-ga [$_{SC}$ Hanako-o kasikoku] omotta]] (LF)
Taro-Nom Hanako-Acc intelligent considered
'Taro considered Hanako Intelligent.'

As a result of radical reconstruction, (32) should have the same LF representation as its unscrambled counterpart at the end point of derivation, and thus it is predicted be grammatical, which is not the case. This means that (31) alone does not suffice to rule out the instances such as those in (13-15) and (32-34). Therefore, I propose the economy condition on syntactic movement given in (37), borrowing an insight from Fox's (2000) Output Economy.[26]

(37) Syntactic movement must potentially have an effect on LF outcome.

Given this condition, the impossibility of scrambling of predicates, modifiers, and adjuncts follows because scrambling of these elements will not create any new predicate, hence having no effect on LF outcome even potentially. In a similar vein, the impossibility of subject scrambling can be explained. Since grammatical subjects are normally subjects of predication to begin with, subject scrambling will not create any new predicate that is otherwise unavailable, which violates condition (37). Consequently, the restriction on scramblable elements is explained away under the scrambling-as-Merge-analysis by the semantic-functional characterization of Japanese scrambling in (31) and the economy condition in (37).

Here a caution is in order. As discussed in section 2, scrambling in Japanese allows radical reconstruction because it is non-feature-driven and thus does not have to obey the condition in

[26] Output Economy states that optional operations must affect the output (Fox 2000: 75). Here, I interpret it as a more general condition that applies to obligatory operations as well. Fox claims that Output Economy has as its consequence two conditions, Scope Economy and Word Order Economy. The former requires that covert movement (Quantifier Raising and Lowering) change the meaning of a sentence whereas the latter requires that overt movement change surface word order. The condition in (37) is an amalgamation of Scope Economy and Word Order Economy as it necessitates that overt movement have a potential effect on LF outcome. To put it differently, condition (37) can be thought of as a strengthened version of Word Order Economy in that it requires that overt movement not only change surface word order but also have semantic effects.

(4), repeated below.

(38) The semantic effect of syntactic movement must be represented at LF.

It should be noted that there is no contradiction in arguing that Japanese scrambling observes (37) but not (38) because the former is a condition on syntactic movement whereas the latter is a condition on reconstruction at LF (= copy deletion). Accordingly, we have reached the following view: Every syntactic movement, whether feature-driven or not, must create a syntactic object that will be mapped into an otherwise unavailable LF representation in accordance with condition (37), and its effects can be undone only when the movement is non-feature-driven and may ignore condition (38).[27]

Given the condition in (37), we can attribute the ungrammaticality of the examples in (13-16) and (32-35) to the failure for the scrambling of predicates and so on to create a new predicate. If so, we can make the following prediction: Anything can be scrambled if it creates a new predicate. Here I will take up two cases, long-distance scrambling of subjects and adjuncts. Let us first consider long-distance scrambling of subjects.

(39) a. (*)Sono okasi-ga$_i$ John-ga [t$_i$ oisii to] omotteiru (koto).
that candy-Nom John-Nom tasty C think fact
'John thinks that that candy is tasty.'
b. (*)Sono hon-ga$_i$ John-ga [t$_i$ yoku ureteiru to] omotteiru (koto).
that book-Nom John-Nom well selling C think fact
'John thinks that that book is selling well.' (Saito 1985: 185)

These examples are discussed by Saito (1985) and considered to be ungrammatical. However, they sound not so bad to me especially when a pause is put after the scrambled subject. Saito starred both instances, but I would put at worst two question marks. Kasai (2002) also disagrees with Saito's judgment and constructs the examples in (40), which he judges to be

[27] As the condition (37) is imposed on both feature-driven and non-feature-driven movements, it is possible to state that it is a condition on the application of Merge. The reason why I do not claim so is that it is unclear whether the Merge of an expletive has a semantic effect. (Indeed, movement of an expletive is also a potential problem. But see Bošković (2002b) and Epstein and Seely (1999), who claim that expletives do not move.) In order to accommodate the Merge of an expletive, it could be argued that Merge must have an effect either on syntax by satisfying selectional requirements (including feature-checking) or on LF by producing some semantic effects. On this view, the Merge of an expletive is ruled in because it triggers a checking of some feature, EPP and/or Case. If Japanese does not involve agreement process or feature-checking in syntax, as is contended by Fukui (1986), Kuroda (1986), Fukui (1993), Fukui and Sakai (To appear), and Saito and Fukui (1998), then the lack of an expletive in this language follows from the above condition on the application of Merge. In this paper, I will not delve into this issue.

grammatical.[28]

(40) a. [[Gian-no tukutta sityuu]-ga$_i$ Nobita-ga [t$_i$ oisii to] omotteiru] koto-ga
Gian-Gen cooked stew-Nom Nobita-Nom tastey C think fact-Nom
Suneo-o odorokaseta (koto).
Suneo-Acc surprised fact
'The fact that Nobita thinks that the stew which Gian cooked is tasty surprised Suneo.

b. [[Kotosi-no UCI Working paper]-ga$_i$ Naomi-ga [t$_i$ totemo yoku ureteiru to]
This year's UCI Working papers-Nom Naomi-Nom very well selling C
omoikondeiru] koto-ga Hajime-o odorokaseta (koto).
imagine fact-Nom Hajime-Acc surprised fact
'The fact that Naomi imagined that this year UCI Working papers is selling very well surprised Hajime.'

Assuming for the sake of discussion that those examples involving the long-distance scrambling of a subject are grammatical, let us consider how the present proposal rules them in. As is suggested above, because grammatical subjects are subject of predication to begin with, clause-internal scrambling of subjects does not create any new predicate, hence

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[28] I suspect that if there is any factor that makes long-distance scrambling of subjects difficult, it should be due to the fact that two subjects bearing the same case-particles are permuted, which causes a processing difficulty. But this difficulty seems to me to be remedied to some extent in examples in (39) and (40) because the two subjects differ in animacy. (Saito takes this possibility into account. Nevertheless he judges the above examples to be ungrammatical.) And indeed, if two subjects with the same case-particle are not distinct in animacy, long-distance scrambling of subjects is totally impossible. Thus, the string in (i-a) can only be analyzed as in (i-b), not (i-c).

(i) a. Taro-ga Mary-ga sigoto-o yameta to omotteiru
Taro-Nom Mary-Nom job-Acc quit C think

b. [$_{TP}$ Taro-ga [$_{CP}$ [$_{TP}$ Mary-ga sigoto-o yameta] to] omotteiru]
Taro-Nom Mary-Nom job-Acc quit C think
'Taro thinks that Mary quit her job.'

c. *[$_{TP}$ Taro-ga$_i$ [$_{T'}$ Mary-ga [$_{CP}$ [$_{TP}$ t$_i$ sigoto-o yameta] to] omotteiru]
Taro-Nom Mary-Nom job-Acc quit C think
'Taro is such that Mary thinks that *he* quit his job.'

Now it seems that there are two independent processing-related factors that we have to take into consideration, namely, case-particle and animacy of subjects. Accordingly, if we construct an example, where two subjects are distinct in terms of case-particle and animacy, long-distance scrambling of a subject should be good. The prediction is proved to be correct by the grammaticality of example (ii), where the scrambled subject is [Dat, -Animate] while the matrix subject is [Nom, +Animate]. (The other patterns to be added.)

(ii) [$_{TP}$ Kono ongaku-ni$_i$ [$_{T'}$ Mary-ga [$_{CP}$ [$_{TP}$ t$_i$ [$_{NP}$ [$_{RC}$ e$_i$ hitobito-o hikitukeru] miryoku-ga] aru to]]
this music-Dat Mary-Nom people-Acc attract charm-Nom exist C
omotteiru]] (koto)
think fact
'This music is such that Mary thinks that *it* has the charm to attract people.'

violating condition (37). By contrast, long-distance scrambling of subjects does create a new predicate, thereby meeting condition (37). The examples in (39) can be paraphrased as in (41).

(41) a. The candy is such that John thinks that *it* is tasty.
b. This book is such that John thinks that *it* is selling well.

The examples in (39) and (40), if grammatical, verify the prediction that anything can be scrambled if it creates a new predicate, which in turn supports the present analysis of Japanese scrambling.

Let us now turn to long-distance scrambling of adjuncts. Saito (1985) points out that it is not always the case that adjuncts cannot be long-distance scrambled, as illustrated by examples (42).

(42) a. [Kono heya-de]$_i$ John-ga [$_{CP}$ Mary-ga t_i Bill-ni au to] omotteiru (koto)
this room-in John-Nom Mary-Nom Bill-Dat mett C think fact
'John thinks that Mary will meet Bill in this room.'
b. [Sono seki-de]$_i$ John-ga [$_{CP}$ Mary-ga t_i Bill-no waruguti-o itta to]
that meeting-at John-Nom Mary-Nom Bill-Gen ill-remarks-Acc said C
syutyoosita (koto)
insisted fact
'John insisted that Mary spoke ill of Bill at that meeting.' (Saito 1985: 174)

In these examples, the sentence-initial adjunct can be construed with the embedded verb (as well as with the matrix verb in (42b)). What is the difference between the examples in (42) and those in (15) and (34)? Obviously, the scramblable adjuncts contain a specific/referential NP whereas the unscramblable ones contain a non-specific/non-referential NP. The difference is reflected by their paraphrasability using a *such that* relative clause. While examples (42) can be paraphrased as in (43), example (34), repeated as (44a), cannot, as shown in (44b).

(43) a. This room is such that John thinks that Mary will meet Bill in *it*.
b. This meeting is such that John insisted that Mary spoke ill of Bill at *it*.
(44) Scrambling of adjuncts (The sentence-initial adjunct must construed with the matrix verb)
a. [$_{TP}$ [Riyuu-monaku] [$_{T'}$ Mary-ga [John-ga sono setu-o sinjiteiru to] omotteiru]]
reason-without Mary-Nom John-Nom that theory-Acc believe C think
'Without any reason, Mary thinks that John believes in that theory.'
b. #Reasons are such that Mary thinks that John believes in that theory without *them*.

Assuming that the paraphrasability using a *such that* relative clause diagnoses whether the

scrambled structure has created a new predicate or not, we can explain the difference in grammaticality between the examples in (42) and that in (44a) on the basis of the economy condition in (37).

5.2. The Impossibility of Remnant Scrambling: Revisited

In section 3.2, we saw that the impossibility of remnant scrambling exemplified by (17d), which is repeated in (45), could be attributed to the PBC.

(45) *[$_{CP}$ Taro-ga t_i nagutta to]$_j$ Hanako-o$_i$ John-ga Mary-ni t_j itta
Taro-Nom hit C Hanako-Acc John-Nom Mary-Dat said
'John said to Mary that Taro hit Hanako.'

Although the account is descriptively correct, it has not attained an explanatory adequacy because the nature of the PBC has not been fully understood. (See note 14.) Thus, the ungrammaticality of examples like (45) is a potential problem for the scrambling-as-Merge-analysis. In this subsection, I will demonstrate that the economy condition in (37), repeated in (46), makes it possible for us to explain the impossibility of remnant scrambling in essentially the same manner as we explained the impossibility of scrambling of predicates and so on in the previous subsection.

(46) Syntactic movement must potentially have an effect on LF outcome.

Assuming the cyclicity and the bottom-up derivation, the two instances of scrambling involved in (45) can be analyzed as illustrated in (47).

(47) a. [$_{TP}$ Hanako-o$_i$ [$_{T'}$ John-ga Mary-ni [$_{CP}$ Taro-ga t_i nagutta to] it (1st SCR)
Hanako-Acc John-Nom Mary-Dat Taro-Nom hit C said
'Hanako is such that John said to Mary that Taro hit *her*.'
b. *[$_{TP}$ [$_{CP}$ Taro-ga t_i nagutta to]$_j$ [$_{T'}$ Hanako-o$_i$ [$_{T'}$ John-ga Mary-ni t_j itta]]] (2nd SCR)
Taro-Nom hit C Hanako-Acc John-Nom Mary-Dat said

The first scrambling moves the embedded object to the outer Spec of T of the matrix clause. Notice that at this point of the derivation, the matrix T' constituent has become a predicate, of which the embedded CP is a part. As a result, the lower clause that contains a trace of the scrambled phrase has lost the status as a clausal argument. Therefore, the second scrambling applied to the embedded CP does not create any new predicate, hence violating the economy condition in (46). If condition (46) can be subsumed by the economy principle that underlies

the computational system of human language, we can conclude that the present solution has come closer to an explanatory adequate account of the impossibility of remnant scrambling than the solution that resorts to the PBC.[29]

5.3. Landing Sites of Scrambling: Revisited

In section 3.3, we observed that scrambling of an embedded object into a position between matrix arguments renders the ensuing structures marginal to almost unacceptable, as exemplified by (24) and (25), repeated in (48) and (49).

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[29] In the present analysis, the impossibility of remnant scrambling is handled in the same way as the impossibility of scrambling of non-arguments, namely, predicates, modifiers and adjuncts. Thus, it is predicted that if there is a language that allows scrambling of such elements, remnant scrambling is also allowed in that language. The prediction is borne out by the following data drawn from (i) Russian, (ii) Polish and (iii) Hindi. (I owe the Hindi data to p.c. with Rajesh Bhatt and Veneeta Dayal.)

(i) a. On [dovol'noj rabotoj Marii]$_i$ sčitaet ee t_i davno (Scrambling of predicate)
he-Top satisfied-Fem work-Instr Mary-Gen consider her long since
'He has considered her satisfied with Mary's work long since.' (Bailyn 2002: 643)

b. Ja zelenujui$_i$ xoču, čtoby ty kupila [t_i knigu] (Scrambling of modifier)
I green-Acc want that you buy book-Acc
'I want you to buy a green book.' (Ibid: 648)

c. Ja bystro$_i$ xoču, čtoby oni t_i dopisali kursovye (Scrambling of adverb)
I quickly want that they wrote papers
'I what them to write their papers quickly.' (Ibid: 648)

d. ??Joh [dat^j knigu t_i]$_j$ neudačno Marii$_i$ pytals^{j}a t_j (Remnant scrambling)
John give book unsuccessfully Mary tried
'John tried unsuccessfully to give a book to Mary.' (p.c. Sasha Makarova)

(ii) a. Świadomy$_i$ byłeś t_i tych problemów (Scrambling of predicate)
aware be-2sg these problems
'You are aware of these problems.'

b. Ładne$_i$ kupujesz [t_i kwiaty] (Scrambling of modifier)
nice buy-2sg flowers
'You buy nice flowers.'

c. Janek [podarowa ćksiązę t_i]$_j$ nieudolnie [Marysi]$_i$ próbował t_j (Remnant scrambling)
John give book unsuccessfully Mary tried
'John tried unsuccessfully to give a book to Mary.' (Szczegielniak 1997: (30))

(iii) a. hoshiyaar$_i$ mEN Ram-ko [t_i maan-taa] huN (Scrambling of predicate)
intelligent I Ram-Dat consider-Hab be.Prs.1sg.
'I consider Ram intelligent.'

b. [Chomsky-dwaaraa likhii]$_i$ Rahul-ne [t_i kitaabeN] khariidiN (Scrambling of modifier)
Chomsky-by written Rahul-Erg books.f bought.f
'Rahul bought books written by Chomsky.

c. dhyaan-se Ram-ne [yeh kitaab t_i parh-nii] chaah-ii (Scrambling of adverb)
[care-with]$_i$ Ram-Erg this book read-Inf want-Pfv.
'Ram wanted to read this book carefully.'

d. [t_i parh-nii]$_j$ akasar [yeh kitaab]$_i$ Ram-ne t_j chaah-ii (Remnant scrambling)
read-Inf often this book Ram-Erg want-Pfv
'Ram often wanted to read this book.'

(48) ??[$_{TP}$ John-ga [$_{VP}$ sono hon-o$_i$ minna-ni [$_{CP}$ [$_{TP}$ Mary-ga t_i motteiru] to] itta]] (koto).
John-Nom that book-Acc all-to Mary-Nom have C said fact
'John told everyone that Mary has that book.' (Saito 1985: 267)

(49) ?*[$_{TP}$ Masao-ga [$_{VP}$ Boston-e$_i$ Kumiko-ni [$_{TP}$ Takashi-ga t_i itta to] itta]] (koto).
Masao-Nom Boston-to Kumiko-Dat Takashi-Nom went C said fact
'Masao told Kumiko that Takashi went to Boston.' (Sakai 1994: 295)

Based on these data, we have hypothesized that there is no landing site of scrambling within VP. However, the present proposal makes a stronger prediction: Only a clause-denoting constituent can provide a landing site for scrambling. This prediction stems from the semantic-functional characterization of Japanese scrambling in (27), repeated in (50), and the economy condition in (37), repeated in (51) because scrambling to a non-clause-denoting constituent will not create any new predicate and fail to satisfy the economy condition.

(50) Scrambling in Japanese is a syntactic operation that merges a maximal projection with a root constituent and turns that root constituent into a predicate at LF.

(51) Syntactic movement must potentially have an effect on LF outcome.

Accordingly, the question of what are possible landing sites of scrambling in Japanese boils down to the question of what are clause-denoting constituents. Possible candidates are TP and VP. TP is clearly a clause-denoting constituent, and indeed, the data so far examined indicate that TP provides a landing site of scrambling. On the other hand, VP is not a full-fledged clause-denoting constituent in that it lacks information concerning tense and aspect.[30,31]

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[30] If this is on the right track, NP-internal scrambling should be impossible. Potential counterexamples to this prediction are presented by Saito (1985: 233). As the examples in (i-b) and (ii-b) show, it seems that genitive-marked postpositional phrases can undergo NP-internal scrambling.

(i) a. [$_{NP}$ Seifugun-no syuto-kara-no tettai]
government army-Gen capital-from-Gen withdraw
'The government army's withdraw from the capital'
b. [$_{NP}$ Syuto-kara-no$_i$ Seifugun-no t_i tettai]
capital-from-Gen government army-Gen withdraw

(ii) a. [$_{NP}$ John-no minami-amerika-e-no ryokoo]
John-Gen South-America-to-Gen travel
'John's travel to South America'
b. [$_{NP}$ Minami-amerika-e-no$_i$ John-no t_i ryokoo]
South-America-to-Gen John-Gen travel

If the permutation between the genitive phrases is a genuine instance of scrambling, we cannot say that VP is not a clause-denoting node because it lacks tense and aspect. Alternatively, we could argue that VP is a clause-denoting node but that its head cannot host multiple specifiers unlike T, hence VP cannot provide landing sites of scrambling. The difference between T and V can be related to the fact that Japanese allows multiple nominative constructions but not multiple accusative constructions. The vantage point of this alternative is that it can accommodate NP-internal scrambling because Japanese

Therefore, I conclude that only outer specifiers of TP can be a landing site of scrambling, which explains the ill-formedness of the examples in (48-49).

6. Other Properties of Scrambling in Japanese

So far we have been mainly concerned with what scrambling in Japanese cannot do and seen that the restrictions on scramblable elements and possible landing sites can be derived from the semantic-functional characterization of scrambling in (50) and the economy condition on syntactic movement in (51). In this section, we will turn to the question of what scrambling in Japanese can do and see how such properties are explained under the present proposal.

6.1. A/A'-scrambling

Inspired by Mahajan (1990) and Webelbuth (1992), Saito (1992) argues that scrambling in Japanese has properties of both A- and A'-movement. (52) exemplify a case of A-scrambling.

(52) a. *[$_{TP}$ Masao-ga otagai$_i$-no sensei-ni karera-o$_i$ syookaisita]
Masao-Nom each other-Gen teacher them-Acc introduced
'Masao introduced to each other's teacher, them.
b. Karera-o$_i$ [$_{TP}$ Masao-ga otagai$_i$-no sensei-ni t$_i$ syookaisita]
them-Acc Masao-Nom each other-Gen teacher introduced
'Them, Masao introduced to each other's teacher.' (Saito 1992)

(52a) is ungrammatical because the local anaphor *otagai* 'each other' is not bound by the intended antecedent coindexed with it, hence violating the Binding Condition A. In (52b), on the other hand, the object is scrambled to the left of the subject; as a result, the anaphor is successfully bound. Saito interprets the ability of scrambling to change A-binding relations as evidence that scrambling in Japanese bears a property of A-movement. Turning now to a case of A'-scrambling, let us consider (53).

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allows multiple occurrences of genitive phrases within an NP, as shown in the examples in (i-ii).

[31] After writing up this section, another possibility occurred to me that VP cannot be a clause-denoting node because VP-internal subjects that have undergone A-movement to Spec-TP cannot be reconstructed due to a ban against A-movement reconstruction as is suggested by Chomsky (1995) and Lasnik (1999). Also note that the alternative suggested in the footnote 30 is undermined given the fact that in Korean, which allows multiple accusatives, examples like (48-49) are severely degraded. Considering that the first possibility proposed in the text has a weakness in light of the NP-internal scrambling data and that the second possibility has a weakness too in terms of the Korean data, it seems that the third possibility based on the impossibility of A-movement is on the right track.

(53) zibun-zishin$_i$-o [$_{TP}$ Hanako$_i$-ga t_i hihansita]
self-self-Acc Hanako-Nom ciriticized
'Herself, Hanako criticized.' (Saito 1992)

If the scrambled phrase, which is co-indexed with the R-expression, occupied an A-position, the Binding Condition C would be violated. But the example is fine. Thus, the landing site of scrambling must be analyzed as an A'-position in this case. Furthermore, in order for the scrambled phrase to satisfy its own anaphoric requirement, it must be reconstructed into its base position. Assuming that the availability of reconstruction of bare anaphors is a general property of A'-movement, as is indicated by the contrast in (54), example (53) lends additional support to the hypothesis that scrambling in Japanese has A'-movement properties too.

(54) a. *Each other$_i$ seemed to [John and Mary]$_i$ [t_i to be happy]
b. Each other$_i$ [John and Mary]$_i$ hate t_i

In order to elucidate the A/A' properties of scrambling in Japanese, Saito (1992) proposes a mechanism of reanalysis that applies at LF. First, he assumes that the landing site of scrambling is an IP-adjoined position, which counts as an A'-position. If nothing happens at LF, scrambling exhibits A'-movement properties, namely, the failure of A-binding and the reconstruction, as seen in (53). Then, to derive A-scrambling effects, he proposes that the landing site of scrambling is rendered into an A-position at LF through a reanalysis process. Applying to the LF derivation Kuroda's (1988) hypothesis that the functional head I in Japanese, unlike its counterpart in English, can host multiple Specifiers, he speculates that scrambled (=IP-adjoined) phrases are reanalyzed as occupying Spec-IP, thereby manifesting A-movement properties.

The present proposal can explain the dual properties of scrambling without resorting to any spurious mechanism such as reanalysis. A-scrambling properties follow directly from our assumption that the landing site of scrambling is an (outer) Specifier of T.[32] On the other

[32] One may think that if it turns out that the landing site of scrambling is a TP-adjoined position, we cannot explain A-scrambling effects directly from the assumption. However, there is a way to avoid this criticism. Chomsky (1995: 63-64; 194-196) has made an attempt to replace the traditional distinction between A- and A'-positions with the distinction of L-related and non-L-related positions. Since the functional heads such as T bear agreeing features with V, they are said to have V-features, which is more generally called L-features. We say that a position is L-related if it is the internal domain or checking domain of a head with an L-feature. Furthermore, the checking domain is subdivided into specifier positions and adjoined positions, which are called narrowly L-related and broadly L-related positions, respectively. Then, Chomsky suggests that a structural position that is narrowly L-related has the basic properties of A-positions while one that is not L-related like C has the basic properties of A'-positions. However, he has left open the status of broadly L-related (adjoined)

hand, the A'-movement properties of scrambling is derived as a consequence of radical reconstruction of scrambled phrases at LF.

6.2. Multiple Scrambling

It is well known that Japanese permits multiple scrambling. In this section, we will consider whether the present proposal allows it, and if so, how. First examine the data in (55-57). (55b-c) show that the objects of ditransitive verbs can each be scrambled to the outer specifiers of T in either order, IO-DO or DO-IO. (56b-c) demonstrate that the simultaneous scrambling of a matrix element and an embedded element is possible when the embedded clause is non-finite whereas (57b-c) indicate that it results in the marginal structures when the embedded clause is finite. Here, I assume that their marginality is due to a performance reason and that all these cases of multiple scrambling are allowed by grammar.

(55) a. [$_{TP}$ John-ga [$_{VP}$ Mary-ni kono syasin-o miseta/ageta/okutta]]
John-Nom Mary-Dat this picture-Acc showed/gave/sent
'John showed/gave/sent Mary a picture.'

b. [$_{TP}$ Mary-ni$_i$ [$_{T'}$ kono syasin-o$_j$ [$_{T'}$ John-ga [$_{VP}$ t_i t_j miseta/ageta/okutta]]
Mary-Dat this picture-Acc John-Nom showed/gave/sent

c. [$_{TP}$ kono syasin-o$_j$ [$_{T'}$ Mary-ni$_i$ [$_{T'}$ John-ga [$_{VP}$ t_i t_j miseta/ageta/okutta]]]
this picture-Acc Mary-Dat John-Nom showed/gave/sent

(56) a. [$_{TP}$ John-ga Mary-ni [PRO kono-ronbun-o yomu youni] meijita]
John-Nom Mary-Dat this-paper-Acc read C ordered
'John ordered Mary to read this paper.'

b. [$_{TP}$ Mary-ni$_i$ [$_{T'}$ kono-ronbun-o$_j$ [$_{T'}$ John-ga t_i [PRO t_j yomu youni] meijita]
Mary-Dat this-paper-Acc John-Nom read C ordered

c. [$_{TP}$ kono-ronbun-o$_j$ [$_{T'}$ Mary-ni$_i$ [$_{T'}$ John-ga t_i [PRO t_j yomu youni] meijita]
this-paper-Acc Mary-Dat John-Nom read C ordered

(57) a. [$_{TP}$ John-ga Mary-ni [$_{CP}$ Taro-ga Hanako-o nagutta to] itta]
John-Nom Mary-Dat Taro-Nom Hanako-Acc hit C said
'John said to Mary that Taro hit Hanako.'

b. ??[$_{TP}$ Mary-ni$_i$ [$_{T'}$ Hanako-o$_j$ [$_{T'}$ John-ga t_i [$_{CP}$ Taro-ga t_j nagutta to] itta]]]
Mary-Dat Hanako-Acc John-Nom Taro-Nom hit C said

c. ?[$_{TP}$ Hanako-o$_j$ [$_{T'}$ Mary-ni$_i$ [$_{T'}$ John-ga t_i [$_{CP}$ Taro-ga t_j nagutta to] itta]]]
Hanako-Acc Mary-Dat John-Nom Taro-Nom hit C said

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positions. Therefore, we could possibly argue that the landing site of scrambling in Japanese is a TP-adjoined position and that this position counts as an A-position, at least, in Japanese.

Let us now consider whether the proposed theory allows multiple scrambling or not. The answer is yes. I will illustrate how the positive answer is derived, by looking into the derivation of (55b).

(58) a. [$_{TP}$ kono syasin-o$_j$ [$_{T'1}$ John-ga [$_{VP}$Mary-ni t$_j$ miseta/ageta/okutta]]] (1st SCR)
this picture-Acc John-Nom Mary-Dat showed/gave/sent
b. [$_{TP}$ Mary-ni$_i$ [$_{T'2}$ kono syasin-o$_j$ [$_{T'1}$ John-ga [$_{VP}$ t$_i$ t$_j$ miseta/ageta/okutta]]]] (2nd SCR)
Mary-Dat this picture-Acc John-Nom showed/gave/sent

(58a) illustrates an intermediate stage of derivation of (55b), where the first scrambling is applied to the DO. At this point, the T'$_1$ has turned into a predicate, and the TP has now become a clause-denoting constituent. As shown in (58b), it is this new clause-denoting constituent that the second scrambling merges the IO with. As a result, the TP in (58a) is rendered into a still new predicate (T'$_2$), of which the IO is the subject of predication. Since the second scrambling does create a new predicate, it obeys the economy condition on syntactic movement in (51). Alternatively, we may think that the second application of scrambling is allowed because it renders the T'$_1$, which is a 1-place predicate at the stage of (58a), into two 2-place predicate, thereby satisfying condition (51). Whichever may be a correct analysis will surely be in line with the present proposal.

7. Conclusion

We have seen that if we are to argue that scrambling in Japanese is a non-feature-driven movement and thus analyzable as an instance of pure Merge, we have to overcome the empirical problem that there are restrictions both on scramblable elements and possible landing sites. The most significant contribution of this paper is that by characterizing scrambling in Japanese as a movement to create a predicate, we invoke the economy condition on syntactic movement, by virtue of which we have explained away the restrictions in a principled fashion. Consequently, we can maintain the scrambling-as-Merge-analysis for Japanese scrambling and ultimately defend the Derivational Configurational Parameter of Saito (2002) that underlies it.

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