

## EPP and semantically vacuous scrambling

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### 1. Saito's discovery

It is widely believed that scrambling in Japanese results from a purely optional movement operation (e.g., Fukui 1993; Kuroda 1988; Saito 1989, 2004; Saito and Fukui 1998). On this view, the operation responsible for scrambling applies completely freely without any need to motivate it. Consequently there is no formal feature that triggers the movement. The evidence typically invoked to justify this view of scrambling is found in Saito (1989). Introducing what has become one of the most recognizable pieces of data in the study of Japanese, Saito argued that scrambling is “semantically vacuous.” The data is given below.

- (1) a. *John-ga* [<sub>WH-*ISD*</sub> *Taroo-ga nani-o katta ka*] *siritagatteiru.*  
John-NOM Taro-NOM what-ACC bought Q want-to-know  
'John wants to know what Taro bought.'
- b. ?*Nani-o<sub>i</sub> John-ga* [<sub>WH-*ISD*</sub> *Taroo-ga t<sub>i</sub> katta ka*]  
what-ACC<sub>i</sub> John-NOM Taro-NOM bought Q  
*siritagatteiru.*  
want-to-know

(1a) is a declarative sentence that contains an indirect question. The crucial example is (1b). In this example the wh-phrase, *nani* 'what', which originates inside the indirect question, has been scrambled to the head of the matrix clause. This is not a direct question; it is still a declarative sentence, hence it cannot license a wh-phrase. Consequently, the wh-phrase must be interpreted inside the indirect question despite its surface position outside it. To do so, the wh-phrase undergoes what Saito calls “radical reconstruction” back into the indirect question. The defining trait of radical reconstruction is that it does not leave a trace. It is as if the scrambling movement never took place. The only way that this scrambling can be “completely undone” as just described is if scrambling is semantically

vacuous, so that the original movement has no semantic import, and undoing it at LF likewise has no semantic consequence. Therefore it is a purely optional movement. This characterization of scrambling based on the data in (1) is widely accepted by those who have studied scrambling in Japanese.

In this article I will first summarize a recent work by Saito (2004) in which he recasts the argument in Saito (1989) in terms of the minimalist program. He points out that data and analysis in Saito (1989) lead to a particular characterization of scrambling within the recent minimalist program:

- (2) *Minimalist version of Saito's (1989) argument* (Saito 2004)  
 Scrambling in Japanese is not driven by the EPP.<sup>1</sup>

This is the minimalist version of an optional and “semantically vacuous” operation. The question is, does such an operation exist in Universal Grammar? In the second part of the article, I will discuss some difficulties that arise with Saito’s observation. I will show that Saito’s arguments do not necessarily lead to the conclusion he draws. Also, drawing from works by Lebeaux (1988) and Fox (2000), I will show, following Nishigauchi (2002), that reconstruction possibilities in English and Japanese do not coincide with Saito’s predictions. I will also comment on some of the additional facts given by Saito (2004) for radical reconstruction, and show that they have other explanations. Separate from these issues, I will discuss precisely what Saito’s observation tells us about Japanese and English. There, I will show that the data has nothing to do with semantic vacuity. Rather, it points to a fundamental difference between Japanese and English with regard to wh-islands. Specifically, I will show that his observation, with some natural extensions, favors the Watanabe-type approach (1992) or Tsai’s (1994) approach to wh-questions in Japanese over the classic approach in Huang (1982) and Lasnik and Saito (1984). We will also see that a version of Kuroda’s (1988) “no forced agreement” holds in Japanese; in particular we will see that in instances when a feature on a Head agrees with some element, the specifier of this Head can nevertheless host some other element. Kuroda’s (1988) observation, looked at in this light, shows that Japanese does not have (or does not require) Spec-Head agreement. The phenomenon we will see in Japanese is, in fact, a familiar one: it is “long-distance agreement” found in the expletive construction in languages such as English, in which the phi features on T agree with the features of the postverbal nominal, but what occurs in the Spec of TP is the expletive

*there*. Finally, given that there is ample evidence against radical reconstruction, we wish to know whether there is, in fact, radical reconstruction. Another way to ask this is, is there scrambling at PF, assuming the traditional inverse T model (cf. Saito (1994), Sauerland and Elbourne (2002) among others)? This is because radical reconstruction is an instance in which the head of the chain is pronounced while the tail of the chain is interpreted. The movement has PF consequence but not LF consequence. What we will see is that, quite surprisingly, in an extremely narrow band of data, there does appear to be such PF scrambling. Saito's original discovery is, thus, upheld. However, unlike Saito's (1989) original conception, and also a more recent version by Sauerland and Elbourne (2002), PF scrambling is limited to those cases in which a quantifier is moved in violation of the universal condition on optional movement. The condition relevant here comes from Fox's (2000) work – that optional movement is motivated only if it has an effect on the output (cf. also Chomsky 2001, Reinhart 1995). I will show that Fox's theory of movement provides a way to precisely characterize the conditions under which radical reconstruction occurs. As we will see, radical reconstruction occurs when the movement is not motivated due to the fact that it cannot have any semantic effect. In this way, Saito was correct in drawing a correlation between radical reconstruction and semantic vacuity. Where we depart from his analysis is in the idea that not all instances of long-distance scrambling obligatorily undergo radical reconstruction – only those instances in which a quantifier is moved illicitly.

## 2. Optional movement and the EPP

One of the most fundamental questions about UG is, what triggers movement? In earlier theories, each type of movement has a unique trigger. The need for Case triggers A-movement in passive and raising, while the question feature on C (Q) attracts a *wh*-phrase. In Chomsky (2000), it is proposed that, while different features come into play for these types of movements, what causes movement is uniform throughout the grammar: it is the EPP. What Chomsky notes is that the EPP must be separated from formal features such as Case and  $\phi$ . The reason is that in the expletive construction such as *There appeared a boy in the room*, the agreement is between T and the postverbal nominal *a boy*. There is no movement, but rather, the EPP is met by merging the expletive. Hence the EPP is independent of agreement. The EPP was originally proposed in Chomsky (1981) precisely because of

the appearance of the expletive. By stating that the EPP is responsible for all instances of categorical movement, Chomsky attempts to unify all movement as the same operation.

However, we can see immediately that not all “EPP-driven” movements are the same. Along with the “classic” EPP movement that moves the thematic subject to the Spec of TP, *wh*-movement and Object Shift also fall under this category of EPP-triggered movement. This means that the three heads, T, C, and *v*, are all associated with the EPP. There is, however, a difference between the movement of the subject to the Spec of TP and, for example, Object Shift to *v*. The EPP on T is assumed to be universal and it is universally strong (Chomsky 1995, Alexiadou and Anagnostopoulou 1998). This means that the satisfaction of the EPP on T is obligatory. Setting aside the expletive construction, this means that the movement responsible for displacement of the thematic subject to the Spec of TP is *obligatory*. However, Object Shift (OS) in Germanic is not obligatory. The object moves to a position outside the VP by OS only in certain cases; in other cases it stays in its original position. The EPP is therefore *optionally* on *v*. When it appears, OS is triggered; if not, the object stays in situ.

What is the difference between the obligatory EPP on T and optional EPP on *v*? Reinhart (1995) and particularly Fox (2000) propose a theory of optional operation which imposes a requirement on the movement as follows. Fox specifically addresses instances in which QR may apply optionally.

(3) *Scope Economy*

A Scope Shifting Operation can move  $XP_1$  from a position in which it is interpretable only if the movement crosses  $XP_2$  and  $\langle XP_1, XP_2 \rangle$  is not scopally commutative. (Fox 2000: 26)

Simply put, an optional operation must have some effect on the output, such as making possible a new scope relationship.

Chomsky (2001) applies this notion of requiring some effect on the output to optional movements such as OS. The argument works as follows. OS is known to have an effect on semantic interpretation – the shifted object is associated with properties such as new information, specificity/definiteness, focus, and so forth (Holmberg 1986). Chomsky bundles all of these informational-structure properties under the label of “interpretive complex” INT. He then suggests that non-OS languages such as English are able to assign INT without moving the object, but OS languages have the property that INT is associated with the Spec of  $vP$ , that is, the position to which OS

moves the object. This movement is triggered by the EPP, which means that the EPP is assigned to  $v$  only when there is OS.

- (4) a.  $v^*$  is assigned an EPP feature only if that has an effect on outcome.  
 b. The EPP position of  $v^*$  is assigned INT.

OS in Germanic thus has an effect; it associates the object with INT. This forms the basis for the characterization of optional movement such as OS as EPP driven.

- (5) Optional operations can apply only if they have an effect on outcome...  
 (Chomsky 2001: 34)

In languages such as English INT can be assigned to the object without movement, hence moving the object under OS would not have an effect on the outcome. The optional movement of OS in English therefore would not be licensed, hence English does not have OS. With this much in the background for optional movement, I now turn to Saito's (1989, 2004) argument.

### 3. Saito (2004) on Saito (1989)

The central assumption that Saito (1989) adopts is that movement operations are subject to the Proper Binding Condition (PBC).

- (6) Traces must be bound. (Fiengo 1977, May 1977)

As an illustration of the PBC, note the examples below.

- (7) a. ??*Who<sub>i</sub> do you wonder [which picture of  $t_i$ ]<sub>j</sub> John likes  $t_j$ ?*  
 b. \**[Which picture of  $t_i$ ]<sub>j</sub> do you wonder who<sub>i</sub> John likes  $t_j$ ?*

(7a) is somewhat marginal because of a mild wh-island violation, but (7b) is complete gibberish. In (7b) the trace of *who* ( $t_i$ ) is unbound in violation of the PBC. There is no unbound trace in (7a). If reconstruction is possible here, the raised wh-phrase, [*which picture of  $t$* ]<sub>j</sub>, could reconstruct to its original position where the trace inside would be properly bound by *who* in the Spec of subordinate CP. The fact that the sentence is ungrammatical indicates, according to Saito, that there is no reconstruction.

Another relevant contrast is found in Riemsdijk and Williams (1981).

- (8) a. *Who<sub>i</sub> t<sub>i</sub> knows [which picture of whom]<sub>j</sub> Bill bought t<sub>j</sub>?*  
 b. ?? *[Which picture of whom]<sub>j</sub> do you wonder who<sub>i</sub> t<sub>i</sub> bought t<sub>j</sub>?*

Riemsdijk and Williams note that in (8a) it is possible to have a pair-list question that pairs the matrix *who* and *whom* inside the picture noun. Thus this question can be answered with *Mary knows which picture of Henry Bill bought*, *Sally knows which picture of John Bill bought*, ... It is assumed that the pair-list interpretation is made possible by *whom* raising to the matrix *who* to form an “absorption” structure (e.g., Higginbotham and May 1981). However, it is not possible to have a similar pair-list question in (8b) pairing the embedded *who* and *whom* in the picture noun. This example in (8b), like (7b), leads Saito to the conclusion that, universally, there is no such a thing as reconstruction as an LF operation that lowers an element that had been raised at overt syntax. Specifically, it is not possible for *which picture of whom* to reconstruct to its original position ( $t_j$ ). If this reconstruction were possible, we would expect the pair list to obtain – the picture noun reconstructs in its entirety to its original position marked by  $t_j$  – the original position of the picture noun – followed by *whom* raising to *who*. The fact that this reconstruction is not possible is taken as evidence that reconstruction in general does not occur because it would be a violation of the PBC. Lowering operations leave a trace which would be unbound.

But what about the well-known cases of reconstruction such as the following (cf. Engdahl 1986)?

- (9) *[Which picture of himself]<sub>i</sub> did John like t<sub>j</sub>?*

Saito (1989) suggests that these types of binding are due not to reconstruction but to “chain binding” as proposed by Barss (1984). Chain binding only requires that the antecedent of the anaphor c-command the trace of the anaphor or the phrase that contains the anaphor. In (9) the antecedent *John* c-commands the trace,  $t_j$ , which is left by the container of the anaphor (*which picture of himself*). Hence any instance of “reconstruction” is viewed as a case of chain binding.

We are now ready to look at Saito’s core argument; the examples are repeated below.

- (10) a. *John-ga* [<sub>WH-ISD</sub> *Taroo-ga nani-o katta ka*]  
 John-NOM Taro-NOM what-ACC bought Q  
*siritagatteiru.*  
 want-to-know  
 ‘John wants to know what Taro bought.’
- b. ?*Nani-o<sub>i</sub> John-ga* [<sub>WH-ISD</sub> *Taroo-ga t<sub>i</sub> katta ka*]  
 what-ACC John-NOM Taro-NOM bought Q  
*siritagatteiru.*  
 want-to-know

(10a) is the non-scrambled version; it is an indirect question contained in a declarative matrix clause. The indirect question has the wh-phrase *nani* ‘what’, which is in situ at overt syntax. This wh-phrase is associated with the subordinate C in a way to satisfy the indirect wh-question. (10b) is the crucial example. This example is constructed by scrambling the wh-phrase *nani* from within the indirect question to the matrix clause. The sentence means the same as (a); that is, it is still a matrix declarative sentence that contains an indirect question. It is not a root question. As Saito points out, the scrambled *nani* must be interpreted inside the embedded indirect question for it to be appropriately licensed by the wh C. *Nani* therefore must undergo reconstruction to the embedded clause. However, the PBC prohibits reconstruction because the lowering of *nani* would leave an unbound trace. Nevertheless Saito assumes that *nani* is put back into the indirection question. He argues that *nani* undergoes “radical reconstruction,” by which he means that the trace left by the lowering operation is wiped out, thereby avoiding a PBC violation. The scrambling is literally “undone” as if it did not take place. This operation, which later was named “radical reconstruction,” is possible for scrambling because the operation is semantically vacuous, hence undoing it at LF has no semantic consequence. This contrasts, for example, with English wh-movement, in which a wh-phrase raises to the Spec of CP to take scope, so that the movement has semantic content. This is why overt wh-movement does not undergo radical reconstruction.

Let us reflect now on what we have just seen with (10b). First, this scrambling of the wh-phrase from inside the indirect question to the matrix clause is clearly optional. It cannot be obligatory because we have the “normal” word order in (10a). Second, this movement is, according to Saito, semantically vacuous. As Saito (2004) points out, if we recast these two properties – optionality and semantic vacuity – within the minimalist assumptions outlined earlier, we reach the following conclusion.

## (11) Scrambling is not EPP driven. (Saito 2004)

This is because an EPP driven optional movement must “have an effect on outcome.” If scrambling can undergo radical reconstruction, it means that scrambling has not had any effect on the outcome simply because the moved category can literally be put back without a trace. If this is correct, the widely held view that scrambling is a purely optional movement without any need for motivation any triggering feature is upheld. According to this view, the EPP, which would be the natural choice – in fact the only choice – to drive movement, apparently does not hold in the case of scrambling in Japanese, at least for long-distance scrambling. So, Saito’s argument, interpreted within the minimalist program in Saito (2004), makes a clear and specific proposal about scrambling. The question is, do we find in UG movement operations that are not triggered by the EPP or some equivalent formal feature? In the next section we turn to arguments against Saito’s analysis of (10b). The arguments we will give do not by themselves show that there is no movement in UG that is not driven by the EPP. If successful, however, our arguments at least cast serious doubt on Saito’s argument for a non-EPP movement based on his data.<sup>2</sup>

#### 4. Counterarguments

In this section I will give several types of arguments for viewing scrambling as EPP driven. I will first summarize the argument I gave (Miyagawa 2001, 2003) for showing that T in Japanese is associated with the EPP; it can be met by moving the subject, or some other entity such as the object. The latter option is what has been called “scrambling” within a clause. Then, I will directly address the arguments in Saito (1989).

##### 4.1. Evidence for the EPP on T: Miyagawa (2001)

In contrast to what we just observed, I have argued that scrambling in Japanese is EPP-driven (Miyagawa 2001, 2003a). This argument is based on the interpretation of universal *zen'in* ‘all’ relative to negation. First, note that *zen'in* in object position may be interpreted inside the scope of sentential negation.



- (12) *Taroo-ga zen'in-no-syasin-o mi-nakat-ta.*  
 Taro-NOM all-GEN-photo-ACC see-NEG-PAST  
 'Taro didn't see everyone's photos.'  
 not > all, all > not<sup>3</sup>

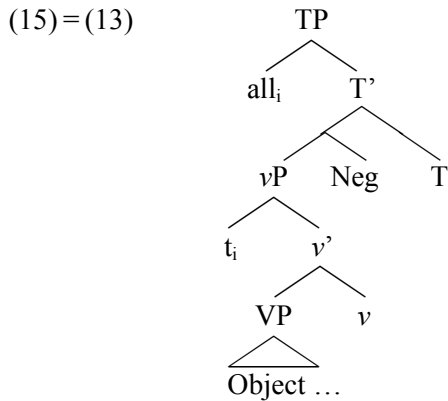
If we place *zen'in* in the subject position the preferred reading is that it is interpreted outside the scope of negation (Kato 1988).

- (13) *Zen'in-no-gakusei-ga san-satu-no hon-o yoma-nakat-ta.*  
 all-GEN-student-NOM three-GEN book-ACC read-NEG-PAST  
 'Every student did not read three book.'  
 \*not > all, all > not

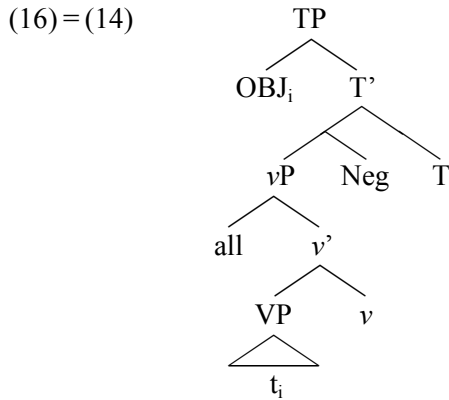
However if the object is scrambled, a partial negation interpretation becomes possible (Miyagawa 2001).

- (14) *San-satu-no-hon-o<sub>i</sub> zen'in-no-gakusei-ga t<sub>i</sub> yoma-nakat-ta.*  
 3-CL-book-ACC all-GEN-student-NOM read-NEG-PAST  
 not > all, all > not

(13) and (14), taken together, give evidence that the EPP on T exists in Japanese (Miyagawa 2001). In (13), which is SOV, the subject, "all," has moved obligatorily into the Spec of TP. It therefore has moved outside the c-command domain of negation, which is assumed to be located between *v* and T (Laka 1990; Pollock 1989). This A-movement in Japanese does not reconstruct.



In (14), which is OSV, the object has moved to the Spec of TP, thereby satisfying the EPP requirement of T. This allows the subject “all” to stay in situ in the Spec of vP, where it is c-commanded by negation.



In either case *something must move to the Spec of TP*, a state of affairs that is expected if T is associated with the EPP. (See Collins 1997 for a similar idea based on the quotative construction in English.) The “all > not” interpretation is also possible because there is a second derivation in which the subject first moves to the Spec of TP for the EPP, and the object then moves to a higher Spec of TP (or CP) by A’-movement. This second movement is not triggered by the EPP on T.

Unlike movement into Spec of TP, the scrambling observed by Saito in (10b) is a long-distance movement that is clearly optional. If this, too, is EPP driven, we must show that it does not undergo radical reconstruction. That is, we must show that there is some effect on the outcome and that this scrambling is not completely undone as if it did not happen. If we can do that, there is a hope that some sort of semantic import can be associated with this movement, in turn making it possible to associate the EPP with the movement.

#### 4.2. Reanalyzing Saito’s arguments

I will give two kinds of arguments that cast doubt on Saito’s (1989) conclusion. First, I will show that the evidence he gave against reconstruction has other explanations. Second, I will give evidence from Nishigauchi (2002)

that the long-distance scrambling in his data does not undergo radical reconstruction.

As noted earlier, Saito (1989) gave following kinds of arguments against reconstruction.

- (17) a. ?? *Who<sub>i</sub> do you wonder [which picture of t<sub>j</sub>]<sub>j</sub> John likes t<sub>j</sub>?*  
 b. \* *[Which picture of t<sub>j</sub>]<sub>j</sub> do you wonder who<sub>i</sub> John likes t<sub>j</sub>?*
- (18) a. *Who<sub>i</sub> t<sub>i</sub> knows [which picture of whom]<sub>j</sub> Bill bought t<sub>j</sub>?*  
 b. ?? *[Which picture of whom]<sub>j</sub> do you wonder who<sub>i</sub> t<sub>i</sub> bought t<sub>j</sub>?*

In (17b) the trace in the raised phrase, [*which picture of t*], is not bound in violation of the PCB. If reconstruction is possible, the PCB violation should be ameliorated. In (18b), there is no *whom-who* pair-list interpretation. If reconstruction could take place, one possibility is that *whom* lowers to the position of *who*; or, [*which picture of whom*] reconstructs, then *whom* raises to the lower Spec, CP and forms a pair-list question with *who*.

Both of these have other explanations. For (17b), the ungrammaticality follows from cyclicity.<sup>4</sup> The derivation of (17b) is countercyclic; *who* first raises from the phrase [*which picture of who*], then, the derivation would have to go back countercyclically down to [*which picture of t*] and raise it in violation of strict cyclicity.

For (18b), the same problem of cyclicity obtains. First the subordinate subject *who* is moved to the lower Spec of CP; then the derivation would have to go “back down” and get the object [*which picture of whom*] and raise it to the matrix Spec of CP. Suppose that one can overcome the cyclicity problem by, for example, postulating multiple specifiers for the embedded CP.<sup>5</sup> As it turns out, there is an additional problem with (18b). Saito is correct in concluding that the raised wh-phrase [*which picture of whom*] does not reconstruct. However, this is specific to this particular type of construction and does not generalize to other constructions. In fact Saito (1994) already has noted the point. Notice that for [*which picture of whom*] to reconstruct, it would do so into an island. However, it has been observed that reconstruction into an island does not occur. The data comes from pair-list interpretation (e.g., Cresti 1995, Longobardi 1987). As noted by May (1985), the following example has a pair-list interpretation.

- (19) *What<sub>i</sub> did every boy buy t<sub>i</sub>?*

Longobardi (1987) noticed that the pair-list interpretation disappears if the wh-phrase is extracted out of an island.

(20) *What<sub>i</sub> do you wonder whether every boy bought t<sub>i</sub>?*

This sentence most naturally has a single-pair interpretation – a felicitous answer would be “PlayStation2” – but a pair-list interpretation is difficult to obtain. Because the pair-list interpretation involves the universal somehow taking scope over the wh-phrase (*every* > wh),<sup>6</sup> the wh-phrase must be interpreted at a position where this scope relation with the universal is possible. In the simple sentence in (19), there is no problem, but in (20), the wh-phrase that has moved out of the island is somehow too far away for the universal to take scope over it, an indication that it cannot be reconstructed to its original position or to some intermediate position in the region of the subordinate CP.

#### 4.3. Argument against radical reconstruction

I now turn to direct evidence against two points Saito suggests: (i) there is no reconstruction due to the PCB; (ii) the wh-phrase in (1b), which has scrambled out of an indirect question, undergoes radical reconstruction.

To set up the counterargument, it is first necessary to review an analysis of some English wh question examples (Lebeaux (1988); cf. also van Riemsdijk and Williams (1981), Freidin (1986)). Note the contrast below.

(21) ??/\**[Which criticism of John<sub>i</sub>]<sub>j</sub> did he<sub>i</sub> reject t<sub>j</sub>?*

(22) *[Which criticism that John<sub>i</sub> heard]<sub>j</sub> did he<sub>i</sub> believe t<sub>j</sub>?*

Lebeaux (1988) uses this contrast to argue that *John*, which is an argument of *criticism* in (21), must be merged with *criticism* when *criticism* first appears in the complement position of *reject*. This means that the entire phrase, *which criticism of John*, is constructed in the original complement position. The entire phrase is therefore visible as a copy at its original position, which leads to a Condition C violation. In contrast, (22) is fine. Lebeaux suggests that it is because *that John heard* is an adjunct, and adjuncts need not be merged at the original site. Rather, it can be late-merged after *which criticism* has moved to the Spec of CP. In this way the copy in the lower position is just *which story*, so that Condition C is not violated (cf. also Chomsky 1993).

The data we just observed gives evidence for reconstruction in English, in contrast to the assertion in Saito (1989).<sup>7</sup> Where there appears to be reconstruction, Saito assumes that it is due to Barss’s chain binding. However,

chain binding has no way to distinguish between (21) and (22). In either case chain binding would relate *he* to the trace, and via the chain, to *John* contained in the wh-phrase in the Spec of CP. *John* is present in both wh-phrases at Spec of CP, so chain binding incorrectly predicts that both are grammatical, or both are ungrammatical, depending on whatever assumptions one makes about how chain binding operates. Chain binding cannot distinguish between the two examples simply because it looks only at the phrase that contains the antecedent (*John*) only after it has moved into the Spec of CP. At that point in the derivation, the adjunct clause containing *John* will have been merged, making it indistinguishable from the wh-phrase with the argument antecedent.<sup>8</sup>

We just saw evidence for reconstruction in English. Nishigauchi (2002) observes that there is a similar argument/adjunct asymmetry in Japanese, which, as he notes, gives evidence against radical reconstruction. I will introduce a crucial example from his work later, but because it involves one complication, I will first present a pair of examples below to illustrate the “Lebeaux” effect in Japanese.

- (23) a. ??/?\**[Minna-no John<sub>i</sub>-no hihan-o]<sub>j</sub> kare<sub>i</sub>-ga*  
 everyone-GEN John-GEN criticism-ACC he-NOM  
*[Hanako-ga t<sub>j</sub> osiete-kureta to] itta.*  
 Hanako-NOM told.him C said  
 ‘[Everyone’s criticism of John], he said that Hanako told him.
- b. *[ [Minna-ga John<sub>i</sub>-kara kakusite-ita] hihan-o]<sub>j</sub>*  
 everyone-NOM John<sub>i</sub>-from was.hiding criticism-ACC]<sub>j</sub>  
*kare<sub>i</sub>-ga [Hanako-ga t<sub>j</sub> osiete-kureta to] itta.*  
 he<sub>j</sub>-NOM Hanako-NOM told.him C said  
 ‘The criticism that everyone was hiding from John, he said that Hanako told him.’

In (23a), the antecedent *John* occurs as an argument of the nominal head *hihan* ‘criticism’. Following Lebeaux, let us assume that *John* must be merged at the point when the nominal head is initially merged, in the complement position of *osiete-kureta* ‘told’. A full copy of *John* is therefore visible in this position, and it leads to a Condition C violation. In (23b), on the other hand, *John* is contained in a relative clause, which is an adjunct. Again following Lebeaux, assume that an adjunct can be late-merged, in this case, after the relative head, *hihan* ‘criticism’, has been scrambled to the head of the sentence. In this way the relative clause never occurred in

the original position of the head, hence its copy does not exist, and Condition C violation is avoided. This example in (b) clearly indicates that the scrambled phrase does not undergo radical reconstruction. If it did, the entire phrase, [ [*minna-ga John<sub>i</sub>-kara kakusite-ita*] *hihan-o*]<sub>j</sub>, ‘[ [everyone-NOM John<sub>i</sub>-from was.hiding] criticism-ACC]<sub>j</sub>’, would be interpreted lower in the structure, which incorrectly would predict that this example should exhibit a Condition C violation. These examples also demonstrate, just as we saw with the English pair (21)/(22), that chain binding makes the wrong prediction.

Nishigauchi (2002) has already noted the point that Lebeaux-type reconstruction effect gives evidence against radical reconstruction; he uses examples that parallel Saito’s (1989) original indirect-question example. The crucial example Nishigauchi invokes is actually taken from Lanik and Saito (1999).

- (24) [*John<sub>i</sub>-ni-tuite-no dono hon*]-o<sub>j</sub>      *kare<sub>i</sub>-ga*  
 John-about-GEN    which article-ACC    he-NOM  
 [*Hanako-ga t<sub>j</sub> ki-ni-itte iru ka*] *sitte-iru*.  
 Hanako-NOM    like                    Q    knows  
 ‘He wants to know which book about John, Hanako likes.’

Note that this example is exactly like Saito’s original example, in that a wh-phrase has been scrambled long-distance from within an indirect question. As noted by Nishigauchi (2002), looking at (24), we can see immediately that radical reconstruction does not apply, despite the fact that this example parallels Saito’s. *John* in this example is an adjunct. Nishigauchi correctly notes that the “conclusion to be drawn from [this type of example] will be that [it] is not really a ‘semantically vacuous movement’” (Nishigauchi 2002: 84).<sup>9</sup>

Based on the discussion above, we can follow Nishigauchi and conclude the following:

- (25) Scrambling in Saito’s data does not radically reconstruct.

This in turn opens the way for extending the EPP proposal in Miyagawa (2001) for scrambling to the Spec of TP to other domains, where, unlike T, scrambling appears to be optional. It is predicted that this scrambling has some sort of interpretive effect (see also Jayaseelan, this volume, and Otsuka, this volume, for a similar idea). I will return to this issue later in the

the article in conjunction with another piece of evidence Saito (2004) gives for characterizing scrambling as not being triggered by the EPP.

### 5. Escape hatch in indirect question

In this section, I wish to explore the question of what really is the significance of Saito's (1989) discovery. Despite the fact that I argued against his conclusion (but see later), I will demonstrate that his data, with some extensions, bears on some important questions about Japanese and English. In particular, his data, with some extensions, gives support to two proposals in the literature:

- Watanabe's (1992) proposal that an empty operator is moving in wh-in-situ (or alternatively, Tsai's (1994) idea that wh-in-situ is licensed by unselective binding by Q on C);
- A particular version of Kuroda's (1988) idea that there is "no forced agreement" in Japanese; the particular version I will demonstrate is that when a Head agrees with an element, the specifier of this Head may host some other element, thus showing that there is no forced Spec-Head agreement.

What really is happening with Saito's (10b), repeated below?

- (10) b. ?*Nani-o<sub>i</sub> John-ga [WH-ISL Taroo-ga t<sub>i</sub> katta ka]*  
 what-ACC John-NOM Taro-NOM bought Q  
*siritagatteiru.*  
 want-to-know  
 'John want to know what Taro bought.'

Why is this movement of *nani* possible in the first place? It is a movement out of a wh-island. Although Saito himself marks the sentence as slightly marginal, as signified by the single question mark, I find the sentence quite acceptable. What this must mean is that the wh-phrase is able to employ the specifier of CP of the indirect question as an escape hatch.

- (26) ?*Nani-o<sub>i</sub> John-ga [WH-ISL t<sub>i</sub> [TP Taroo-ga t<sub>i</sub> katta ka]]*  
 what-ACC John-NOM Taro-NOM bought Q  
*siritagatteiru.*  
 want-to-know  
 'John want to know what Taro bought.'

There are at least two possible reasons why the wh-phrase may move through the Spec of CP as shown above. One is that the scrambling of the wh-phrase into the Spec of CP counts as wh-movement, and fulfills the [+wh] selectional requirement. The fact that scrambling sometimes counts as wh-movement has been suggested by Takahashi (1993), and Saito (1994), among others. The second possibility is that the [+wh] requirement is met even before the wh-phrase moves; an agreement relation is established between the wh feature on the wh-phrase-in-situ and the Q feature on C. For our purposes we can imagine one of two ways in which this might happen. Watanabe's (1992) (and also Hagstrom's (1998)) approach would associate an operator with the wh-in-situ phrase, which moves to C to check off the Q feature. Alternatively, Tsai's (1994) system would simply establish the relationship between the Q on C and the wh feature via unselective binding. Either way, the Spec of CP is left vacant.<sup>10</sup> The following example gives support to the Watanabe/Hagstrom/Tsai approach – that is, Q on C is satisfied by some sort of matching with the wh-feature/operator on the wh-phrase.

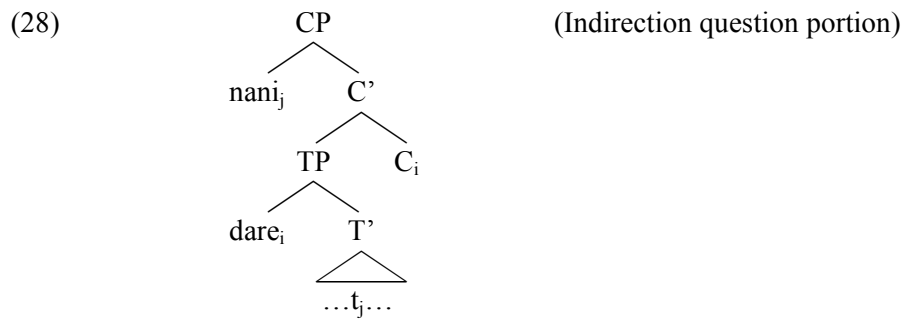
- (27) ? *Nani-o<sub>i</sub> John-ga* [<sub>WH-ISL</sub> *t<sub>i</sub>* [<sub>TP</sub> *dare-ga t<sub>i</sub> katta ka*]]  
 what-ACC John-NOM who-NOM bought Q  
*siritagatteiru ndai?*  
 want-to-know Q  
 ‘What does John want to know who bought?’  
 (answer: John wants to know who bought A BOOK.)

In this example the object wh-phrase, *nani* ‘what’, has been extracted from the wh-island, and it raises to the matrix clause where it forms a direct question. To ensure that this wh-phrase is interpreted in the matrix question, I have used the question particle *-ndai* for the matrix clause, which occurs only with a direct wh-question. The wh-phrase moves through the vacant Spec of CP, making it possible to avoid a wh island violation. The indirect question also contains the wh-phrase *dare* ‘who’ in the subject position. Presumably this wh-phrase is in-situ and does not move, and it is the wh-phrase that meets the [+wh] selectional requirement of the indirect question. This is so because the overtly moved wh-phrase is interpreted at the matrix clause, meeting the [+wh] selectional requirement of the matrix Q. The question is, how does *dare* ‘who’ meet the [+wh] requirement of the indirect question Q? We can conclude that it does not raise to the Spec of CP at LF. This is because this Spec of CP already has a copy of *nani*, which



has moved overtly through this Spec of CP to the matrix clause. Hence, the wh feature of *dare* ‘who’ must be checked against the Q feature on C of the indirect question by some other means. The two options are Watanabe style raising of an empty operator to C (also Hagstrom 1998), or Tsai’s unselective binding. Either way the [+wh] requirement is met without having to move the wh-phrase as a category to the Spec of CP. We can see from what we have observed that LF movement of the entire wh-phrase to the Spec of CP does not take place, or, at least, need not take place.

The example in (27) also contains another important point. Note that the Q feature on the subordinate C agrees with the subject wh-phrase *dare* ‘who’. This satisfies the [+wh] requirement of the indirect question. Yet the object wh-phrase *nani* is able to move through the Spec of CP to avoid a wh island violation. This is schematized below.



At this point in the derivation, we see that there is no Spec-Head agreement between the C and its specifier. C agrees with *dare* ‘who’, but its specifier hosts *nani*, which is on its way to the matrix clause, where it will check off the Q feature on the matrix C. It does not enter into agreement with the C in the indirect question. This provides support for a particular version of Kuroda’s (1988) proposal that in Japanese there is no forced agreement. The specifier position is “free” from agreement, allowing anything in principle to move into it. The example above is particularly striking because the head of the CP, C, enters into agreement with the wh feature on *dare* ‘who’, yet the specifier may host *nani* ‘what’, which does not enter into agreement with the same C. Thus, we can narrowly characterize Kuroda’s original proposal as follows.

(29) Japanese has no forced Spec-Head agreement.

This way of framing Kuroda's proposal is consistent with the theory of the time: agreement was equivalent to Spec-Head agreement. In today's theory, however, agreement is, in principle, separated from what appears in the specifier. What (29) states, then, is that agreement occurs in Japanese, but not Spec-Head agreement. There is a proposal by Fukui (e.g., 1986) which in many ways reflects the spirit of Kuroda's work. However, Fukui specifically denies the existence of specifiers and also functional heads in Japanese. While Kuroda's system easily translates into the type of framework we are assuming – we can in fact confirm the validity of his proposal as I just outlined – Fukui's proposal is less transparent from today's perspective. I will therefore not attempt to evaluate his proposal from the type of perspective in this article.

To summarize this section, what I pointed out is that Saito's (1989) observation, with some extensions, provides important support for the approach to wh-in-situ suggested by Watanabe (1992)/Hagstrom (1998) or Tsai (1994). Importantly, it argues against the LF categorical movement of Huang's (1982) and that of Lasnik and Saito (1984). In addition, the data upholds a particular version of Kuroda's proposal that there is no forced agreement in Japanese. Thus, while I argued against the original conclusion Saito drew – that scrambling obligatorily undergoes radical reconstruction – his data turns out to be valuable in giving evidence for some distinguishing properties of Japanese and, presumably, other wh-in-situ languages such as Chinese, Korean and Turkish.

In the next two sections I will take up other arguments Saito (2004) gives for radical reconstruction.

## 6. Further note on radical reconstruction

Saito (2004) gives two well-known phenomena as further evidence for radical reconstruction. First is the impossibility of creating a new binder by long-distance scrambling.

- (30) ?*Karera-o<sub>i</sub> [otagai-no sensei]-ga t<sub>i</sub> hihansita (koto)*  
 they-ACC each.other-GEN teacher-NOM criticized  
 'Each other's teacher criticized them.'

We can see from above that short distance scrambling may create a new binder (cf. Mahajan 1990). However, long-distance scrambling cannot (Mahajan 1990).

- (31) \**Karera-o<sub>i</sub> [otagai-no sensei]-ga [CP Tanaka-ga t<sub>i</sub> hihansita to] itta (koto) criticized C] said*  
 ‘Each other’s teacher said that Tanaka criticized them.’

In this example *karera* ‘they’ cannot bind the reciprocal.<sup>11</sup> Saito (2004) suggests that radical reconstruction makes the right prediction here; *karera*, the potential binder, is radically reconstructed to its original position, so that it cannot be in a position to bind the reciprocal. This leaves as a question the ability of *karera* in short scrambling to be a binder.

Saito (2004) also notes a quantifier scope fact observed by Oka (1989) and Tada (1993) as evidence for radical reconstruction. Japanese is scopally rigid; the scope relation is read off the surface c-command relation.

- (32) *Dareka-ga daremo-o aisiteiru.*  
 someone-NOM everyone-ACC love  
 ‘Someone loves everyone.’  
 some > every, \*every > some

However, as Kuroda (1971) first noticed, scrambling leads to a new scope relation.

- (33) *Daremo-o<sub>i</sub> dareka-ga t<sub>i</sub> aisteiru.*  
 everyone-ACC someone-NOM loves  
 every > some, some > every

However, Oka and Tada noticed that long-distance scrambling does not have this effect; the scope relation does not change under long-distance scrambling.<sup>12</sup>

- (34) *Daremo-o<sub>i</sub> dareka-ga [Tanaka-ga t<sub>i</sub> aisiteiru to] itta.*  
 everyone-ACC someone-NOM Tanaka-NOM love C said  
 ‘Everyone, someone said that Tanaka loves t.’  
 some > every, \*every > some

Saito (2004) notes that radical reconstruction correctly rules out the “every > some” interpretation since the scrambled universal quantifier is put back at LF below the existential quantifier.

For the binding facts noted above, we can go back to the original analysis by Mahajan (1990), who pointed out that clause-internal scrambling has A-movement properties while long-distance scrambling solely has A'-movement properties. For the short scrambling to be an instance of A-movement simply means that the landing site is an A-position. But in long-distance scrambling it is an A'-position. We can then explain the difference in binding possibilities of an anaphor between short and long scrambling by following the original notion of binding as taking place solely within the "A-position" system of grammar (Chomsky 1981).<sup>13</sup>

For the quantifier facts, I have something more interesting to offer. Suppose, as has been suggested in the literature, that scrambling of a quantifier may count as an instance of overt QR (cf. Kitahara (1995), Miyagawa (2003b), Sohn (1995), Tonoike (1997)). Let us also assume the notion of Fox's (2000) Scope Economy.

(35) *Scope Economy*

A Scope Shifting Operation can move  $XP_1$  from a position in which it is interpretable only if the movement crosses  $XP_2$  and  $\langle XP_1, XP_2 \rangle$  is not scopally commutative. (Fox 2000: 26)

What this says is that optional application of QR is possible if it leads to a new scope relation. This was Kuroda's original observation about short scrambling. As we saw in (33), moving the object quantifier over the subject quantifier makes it possible for the object quantifier to take scope over the subject quantifier. This new scope relation licenses the movement as QR. What about long distance scrambling? Before looking at the Japanese example again, let us consider examples from English.

May (1977) noted that QR is clause bound.

- (36) a. *Someone loves everyone.*  
           some > every, every > some
- b. *Someone thinks that Mary loves everyone.*  
           some > every, \*every > some

However, there are counterexamples to the clause boundedness of QR. The following is an observation by Moltmann and Szabolci (1994) as discussed by Fox (2000).

- (37) a. *One girl knows that every boy bought a present for Mary.*  
 one > every, \*every > one
- b. *One girl knows what every boy bought for Mary.*  
 one > every, every > one

Assuming that long-distance QR would need to go through the Spec of CP, or adjoin to this CP, what Fox points out is that in (a), the movement of *every boy* to the lower Spec of CP does not lead to a new scope relation. Hence it is scopally vacuous and, by the Scope Economy, this movement is not licensed. This, in turn, precludes the universal quantifier from raising to the matrix clause to take scope over the existential. In (b), moving the universal *every boy* over *what* does lead to a new scope relation – it makes a pair-list interpretation possible. This, then, sets up the movement of the universal quantifier to the matrix clause, where ultimately it may take scope over the existential.

Let us return to the Japanese example, repeated below.

- (38) *Daremo-o<sub>i</sub> dareka-ga [t<sub>i</sub> Tanaka-ga t<sub>i</sub> aisiteiru to] itta.*  
 everyone-ACC someone-NOM Tanaka-NOM love C said  
 ‘Everyone, someone said that Tanaka loves t.’  
 some > every, \*every > some

This example shows the effect of “clause boundedness” of QR. Note that the initial move of the universal quantifier *daremo* ‘everyone’ within the lower CP does not lead to a new scope relation. On a par with the English example (36b) above, the movement of the universal quantifier all the way to the matrix clause does not count as QR due to its violation of scope economy. Hence it cannot take scope over the existential in the matrix subject position. Compare this example to the one below.

- (39) *Daremo-ni<sub>i</sub> dareka-ga [John-ga t<sub>i</sub> kisu<sub>s</sub>ita to] omotteiru.*  
 everyone-DAT someone-NOM John-NOM kissed C thinks  
 ‘Everyone, someone thinks that John kissed.’  
 \*everyone > someone, someone > everyone

- (40) *Daremo-ni<sub>i</sub> dareka-ga [dareka-ga t<sub>i</sub> kisu<sub>s</sub>ita to] omotteiru.*  
 everyone-DAT someone-NOM someone-NOM kissed C thinks  
 ‘Everyone, someone thinks that someone kissed.’  
<sup>ok</sup>/??everyone > someone, someone > everyone

The difference between the pair is that in (39) there is no quantificational expression in the subordinate clause other than the scrambled phrase, “everyone.” In (40), the subordinate subject is the quantificational expression “someone.” Although delicate, I believe that the ambiguity is more readily detectable in (40).<sup>14</sup> In (39), the first step of the movement of “everyone” to the head of the subordinate clause does not lead to a new scope relation, hence this optional movement is not licensed. As a result, the next step, likewise, is not licensed. We return to why this movement takes place at all below. In (40), the first step does lead to a new scope relation, whereby “everyone” is able to take scope over the subordinate subject “someone.” This step is, thus, licensed. The next step is also licensed because “everyone” moves across another quantifier, “someone,” leading to a new scope relation. In order for “everyone” to scope over “someone,” it is necessary for “everyone” also to scope over “someone,” since that is the new scope relation that licenses the first step of the movement. I believe this prediction is borne out. These examples suggest that the original observation by Oka and Tada, which Saito (2004) points to as evidence for radical reconstruction, was simply a demonstration of Scope Economy at work. The observation was based on examples in which a quantifier moved in the lower clause without altering the scope relation, hence in violation of Scope Economy. I share Tada’s (1993) intuition that such a structure represents an illicit LF structure; this “illicitness” in our analysis is reflected in the fact that the structure was created via illicit movement. Once we constructed an example where new scope relation results from the initial move, we saw that it is possible for long-distance scrambling to lead to a new scope relation relative to the matrix subject quantifier.

Note, by the way, that we can get a similar effect of scope ambiguity using an indirect question.<sup>15</sup>

- (41) *Dono-hon-mo<sub>i</sub> dareka-ga* [<sub>CP</sub> *t<sub>i</sub> [dare-ga t<sub>i</sub> yonda ka]]*  
 every-book someone-NOM who-NOM read Q  
*siritagatteiru.*  
 want:to:know  
 ‘Someone wants to know who read every book.’  
 every > someone, someone > every

This is similar to the Moltmann/Szabolci English example in (37b) (*One girl knows what every boy bought for Mary*). Fox argues that this English example allows nonlocal QR because first, QR moves *every boy* to a position

above *what*, which leads to a new relation, namely, pair-list. Can we say the same for the Japanese example above in (41)? In fact we cannot. Any combination of the universal expression such as *daremo* ‘everyone’ and a wh-phrase does not give rise to a pair-list interpretation (cf. Hoji 1986).

- (42) *Daremo-o dare-ga aisiteiru no?*  
 everyone-ACC wh-NOM love Q  
 ‘Everyone, who loves?’  
 Single pair, \*pair-list

This sentence only has the interpretation, “wh > every.” It certainly does not have a pair-list interpretation.<sup>16</sup> Why, then, do we get scope ambiguity in (41)? The answer must be that it is not possible to reconstruct into a wh-island, as we noted earlier. As a result, the long-distance scrambled universal phrase *daremo* ‘everyone’ is interpreted in the scrambled position, above the matrix existential subject. This, then, is evidence that scrambling behaves exactly like other types of movement – it may reconstruct, except under certain conditions that militate against reconstruction, namely, islands.

## 7. Where radical reconstruction really exists

We have seen that there is ample evidence showing that radical reconstruction does not exist. The Condition C facts in section 4, repeated below, point to the fact that whatever reconstruction effects we find in the Saito-type examples are simple forms of reconstruction, not the radical reconstruction type.

- (43) [*John<sub>i</sub>-ni-tuite-no dono hon*]<sub>-o<sub>j</sub></sub> *kare<sub>i</sub>-ga*  
 John<sub>i</sub>-about-GEN which article-ACC he<sub>i</sub>-NOM  
 [*Hanako-ga t<sub>j</sub> ki-ni-itte iru ka*] *sitte-iru.*  
 Hanako-NOM like Q knows  
 ‘He wants to know which book about John, Hanako likes.’

This example avoids a Condition C violation because the antecedent is contained in an adjunct. The Lebeaux (1988)/Chomsky (1993) analysis is that while an argument must merge at the point when the head is merged, an adjunct may merge later in the derivation.

We also saw that instances of long-distance quantifier scrambling need not reconstruct if the movement is motivated. Thus, contrary to the earlier observations by Oka (1989) and Tada (1992), a long-distance scrambled quantifier may be interpreted in its scrambled position if the movement in the lower clause leads to a new scope possibility (cf. Fox 2000). Another example is given below.

- (44) *Dono-ronbun-mo<sub>i</sub> dareka-ga [t<sub>i</sub> sukunakutomo-hitori-no-kyouzyu-ga*  
 every-article-ACC someone-NOM at.least.one.professor-NOM  
*t<sub>i</sub> hihansuru to] omotteiru.*  
 criticize C thinks.  
 ‘Every article, someone thinks that at least one professor will criticize.’  
 some > every, (?)every > some

In this example the initial movement of “every article” from its subordinate complement position to the Spec of CP creates a new scope relation – the universal quantifier may take scope over the quantifier “at least one professor.” This, in turn, licenses the quantifier to move to the matrix clause, across the matrix existential quantifier, which also leads to a new scope relation, hence the universal is able to be interpreted in the final scrambled position. Again, this is evidence against radical reconstruction.

Does this mean that radical reconstruction does not exist at all? In fact, Saito (2004) is correct in pointing out the Oka/Tada example as an instance of radical reconstruction. Another example is given below.

- (45) *Daremo-o<sub>i</sub> dareka-ga [Tanaka-ga t<sub>i</sub> aisiteiru to] itta.*  
 everyone-ACC someone-NOM Tanaka-NOM love C said  
 ‘Everyone, someone said that Tanaka loves t.’  
 some > every, \*every > some

In this example, the long-distance scrambled universal quantifier cannot be interpreted in the final scrambled position. It therefore must undergo required reconstruction, and we can consider this as an instance of radical reconstruction, in so far as the universal quantifier simply does not get an interpretation in the final scrambled position. It is, therefore, semantically vacuous, as Saito has argued. We have seen ample evidence against radical reconstruction, yet, this example points to the existence of radical reconstruction.

What I wish to argue is that radical reconstruction – or PF scrambling – exists, but, unlike Saito (1989, 2004), who assumed that radical reconstruction applies to all instances of long-distance scrambling (cf. also Sauerland



and Elbourne 2002), what we can see from the array of data in this article is the following.

(46) *Radical reconstruction*

Radical reconstruction occurs only when the scrambling is not motivated by any universal conditions on movement.

Let us start with instances of scrambling in which radical reconstruction does not (or need not) occur. These are the cases of clause internal scrambling.

(47) a.  $[_{TP} \text{ Taroo-ga}_i \text{ } [_{vP} t_i \text{ hon-o} \text{ } \text{kat}]]\text{-ta.}$   
           Taro-NOM           book-ACC buy-PAST  
           ‘Taro bought a book’

      b.  $[_{TP} \text{ Hon-o}_i \text{ } [_{vP} \text{ Taroo-ga} \text{ } t_i \text{ } \text{kat}]]\text{-ta.}$   
           book-ACC       Taroo-ga    buy-PAST

Why is it that this local scrambling does not undergo radical reconstruction? Under our view, it is because this movement is always motivated. This is precisely the analysis of A-scrambling and the EPP – the scrambling is not an optional movement, hence it is not subject to Fox’s condition on optional movement. As I have argued (Miyagawa 2001, 2003), T in Japanese is associated with the EPP.<sup>17</sup> This may be satisfied by moving the subject, as in (a) above, or the object, as in (b). The crucial point is that this movement is motivated by the EPP, so that the movement is not optional. Thus, if the object scrambles, the subject may stay in situ in Spec of vP. This makes it possible for the universal quantifier in the subject position to be interpreted in the scope of negation. I repeat the example below.

(48) *San-satu-no-hon-o<sub>i</sub> zen'in-no-gakusei-ga t<sub>i</sub> yoma-nakat-ta.*  
       3-CL-book-ACC   all-GEN-student-NOM   read-NEG-PAST  
       not > all, all > not

In contrast to this, long-distance scrambling cannot meet the EPP requirement of the T to which it adjoins (Miyagawa 2001). Note the example below from Miyagawa (2001).

- (49) *Syukudai-o<sub>i</sub> zen'in-ga [CP sensei-ga t<sub>i</sub> dasu to]*  
 homework-ACC all-NOM teacher-Nom assign C  
*omowa-nakat-ta.*  
 think-NEG-PAST  
 'Homework, all did not think that the teacher will assign.'  
 \*not >> all, all >> not

As I noted in Miyagawa (2001), this movement cannot be to the Spec of matrix TP, because it is strictly A'-movement (cf. Mahajan 1990). Hence it is solely an adjunction operation. We thus have the following.

(50) *Obligatory and optional scrambling*

- (i) Clause-internal scrambling triggered by the EPP on T – it is not an optional movement;
- (ii) Long-distance scrambling is an optional movement, and is subject to the condition on optional operation.

What we have learned so far in this article is that of the two types of scrambling above, long-distance scrambling allows interpretation of the scrambled element at the final landing site iff each movement step is motivated. If not, the scrambled element does not get interpreted in the moved position, hence it is PF movement. Why is there this “radical reconstruction” effect?

The radical reconstruction phenomenon is a chain that is pronounced at the head, but interpreted at the tail, or some copy lower than the head. This way of “spelling-out” the chain completes the paradigm of chain spell-outs given in the literature. It is easy to see that radical reconstruction fills a logical gap in the paradigm.

(51) *Types of chain spell-outs*

	Head	Tail
(i) overt movement:	pronounce, interpret	(interpret)
(ii) covert movement: <sup>18</sup>	interpret	pronounce (, interpret)
(iii) radical reconstruction:	pronounce	interpret

A typical overt movement ((i)) creates a chain in which the head is both pronounced and interpreted. It presumably also gets some sort of interpretation in the tail position to identify the thematic relation. This is the reason for “interpret” in parentheses for (i) (and also (ii)). Covert movement in (ii)

is a chain in which the tail is pronounced, but the head is interpreted (the tail also gets the “thematic” interpretation). Finally, radical reconstruction – or PF movement – is an instance in which the head is pronounced but the tail is interpreted. The only other possibility is if the “tail” is both interpreted and pronounced, but that is a case of non-movement.

Finally, let us consider precisely under what circumstances radical reconstruction occurs. We have seen that illicit movement of a quantifier leads to radical reconstruction. We will see in the next section that, ironically, although Saito was the one to propose radical reconstruction, the actual data he presented is not an instance of radical reconstruction, because the movement of the *wh*-phrase meets the requirement for optional movement at each link of the chain. This leaves long-distance scrambling of an ordinary nominal or an R-expression for us to consider. Does the long-distance movement of such an expression lead to radical reconstruction? If so, this would be another case of radical reconstruction in addition to the improper movement of quantifier. If not, radical reconstruction is limited solely to the improper movement of a quantifier. As we will see, scrambling of ordinary nominals may fulfill the requirement of optional movement.

As noted by Neeleman and Reinhart (1998), scrambling may lead to a variation in the focus potential of the sentence. Ishihara (2000) illustrates this for Japanese. Let us begin with a normal SOV word order.

- (52) *Taroo-ga* [<sub>VP</sub> *hon-o* *katta*].  
 Taro-NOM book-ACC bought  
 ‘Taro bought a book.’

The focus here is on the object *hon* ‘book’, which is the phrase that bears the nuclear stress. According to the Focus Rule of Neeleman and Reinhart (1998), which allows focus to project upward from the focused element, the focus domain of this sentence may be the object *hon*, the VP that contains it, or the entire IP. Thus, (52) can be used as an answer to the following three questions:

- (53) a. *What happened?* (focus on IP)  
 b. *What did Taro do?* (focus on VP)  
 c. *What did Taro buy?* (focus on object)

(54) has a different focus domain set due to the scrambling of the object.

- (54) *Hon-o<sub>i</sub> Taroo-ga [VP t<sub>i</sub> katta]*  
 book-ACC Taro-NOM bought

The focus domains are the subject NP *Taroo* and the TP, but the VP cannot be a focus domain because it does not contain the stress. Therefore (54) cannot be used to answer “What did Taro do?”

Now consider the following.

- (55) *Hanako-ga [CP Taroo-ga hon-o katta to] itta.*  
 Hanako-NOM Taro-NOM book-ACC bought C said  
 ‘Hanako said that Taro bought a book.’

This sentence can be used to answer the following three questions.

- (56) a. *What did Hanako say happened?* (focus on subordinate IP)  
 b. *What did Hanako say that Taro did?* (focus on subordinate VP)  
 c. *What did Hanako say that Taro bought?* (focus on subordinate object)

Now consider the following long-distance scrambling of the subordinate object, which is an ordinary nominal expression (*hon* ‘book’).

- (57) *Hon-o<sub>i</sub> Hanako-ga [CP t<sub>i</sub> Taroo-ga t<sub>i</sub> katta to] itta.*  
 Book-ACC Hanako-NOM Taroo-NOM bought C said

First, the scrambling of *hon-o* ‘book-Acc’ within the subordinate clause deprives the focus reading on the VP, as we saw for the example (54). This means that this scrambling has a meaningful effect on the output of this movement, hence the first movement is licensed. Note, now, that the entire sentence in (57) can answer (56a) and (56c), but not (56b).<sup>19</sup> Again, the movement is licensed. We thus assume that the long-distance scrambling of an ordinary expression does not result in radical reconstruction. We thus have the following.

- (58) *Radical reconstruction (“PF” scrambling)*

Radical reconstruction occurs only if a quantifier is moved by illicit optional movement.

This is a fundamentally different portrayal of radical reconstruction than Saito (1989) and Sauerland and Elbourne (2002). They assume that radical

reconstruction – or PF scrambling – is widely prevalent. What I have shown is that PF scrambling occurs in an extremely narrow range of data – when a quantifier is moved illicitly.

Our proposal makes a prediction about a Condition C violation that should occur even if the antecedent is contained in an adjunct. Note the contrast below.<sup>20</sup>

- (59) a. *[Taroo<sub>i</sub>-ga kaita ronbun]-o<sub>j</sub> kare<sub>i</sub>-ga [Hanako-ga t<sub>j</sub>  
Taro-NOM wrote article-ACC kare-Nom Hanako-NOM  
hihansita to itta.  
criticize C] said*  
'He said that Hanako criticized the article that John wrote.'
- b. ??/\**[Taroo<sub>i</sub>-ga kaita dono ronbun]-mo<sub>j</sub> kare<sub>i</sub>-ga  
Taro-NOM wrote every article he-NOM  
[Hanako-ga t<sub>j</sub> hihansita to] itta.  
Hanako-NOM criticize C said*  
'He said that Hanako criticized every article that John wrote.'

In (59a) the R-expression “article” has been scrambled, and, presumably, the relative clause that contains *John* is late-merged after this scrambling operation. Because this scrambling creates a new focus, the movement is licensed, and there is no radical reconstruction. In (59b), everything is the same as (59a), except that the scrambled phrase is a quantifier (“every article”). This means that this scrambling must be licensed for each chain relative to the quantifier (whether a new scope relation is created). The movement within the lower CP does not meet the requirement, hence scrambling in (59b) is illicit movement. As a result it is PF scrambling and radical reconstruction applies. Condition C violation is thus triggered despite the fact that the antecedent *John* is contained in an adjunct phrase. I have checked with a number of native speakers, and they mostly reacted similarly to the grammatical judgments I have given for the two examples in (59). Some did not see a difference, judging both as fine. It turns out that these speakers also found ambiguity with the Oka/Tada type of example in which a quantifier is scrambled long distance. For these speakers, this movement, which has an effect on focus, is sufficient to license the optional movement, and the quantifier “piggy backs” on this focus movement.

### 8. The nature of Saito's original data

As the final point in this article, let us return to the original data presented by Saito (1989).

- (60) ?*Nani-o<sub>i</sub> John-ga [WH-ISL Taro-ga t<sub>i</sub> katta ka] siritagatteiru.*  
 what-ACC John-NOM Taro-NOM bought Q want-to-know  
 'John wants to know what Taro bought.'

Contrary to Saito's claim, we have seen evidence that the *wh*-phrase that is scrambled long-distance does not undergo radical reconstruction. In fact it does not undergo reconstruction because of the *wh*-island. The example is repeated below.

- (61) [*John<sub>i</sub>-ni-tuite-no dono hon]-o<sub>j</sub> kare<sub>i</sub>-ga [Hanako-ga t<sub>j</sub>  
 John<sub>i</sub>-about-GEN which article -ACC he-NOM Hanako-NOM  
*ki-ni-itte iru ka] sitte-iru.*  
 like Q knows  
 'He wants to know which book about John, Hanako likes.'*

In this example, the antecedent, *John*, is inside an adjunct clause within the *wh*-phrase. As a result, it escapes a condition C violation. This means that the *wh*-phrase as a whole does not undergo radical reconstruction; rather it is able to be interpreted in the scrambled position. We have already seen that the [+*wh*] requirement of the indirect question is met by unselective binding (Tsai 1994) or feature movement (Watanabe 1992; Hagstrom 1998), so that is not a problem. The fact that the content of the *wh*-phrase may be interpreted as such indicates that this movement is properly motivated, and it is not an improper movement. The question is, what motivates it?

For the movement within the indirect question, presumably to the Spec of CP, there are a number of possibilities. One possibility is that by this movement, the indefinite quantifier portion of the *wh*-phrase ("some article") is able to take scope over the Q of the indirect question, thus creating a new scope relation. Let us suppose that this is what motivates the first link of the chain, although there are other possibilities just as plausible. What about the second link of the chain, which takes the *wh*-phrase to the matrix position? There is no quantifier in the matrix clause that would interact with the scrambled *wh*-phrase and result in a new scope relation, so we must look elsewhere for justification of this movement. What I detect in

this movement is that the *wh*-phrase is interpreted as a kind of a partitive. If we look at (60), the *wh*-phrase *nani* ‘what’ is most easily interpreted as “what, among the things we are talking about, John wants to know (if) Taro bought.” I suggest that this partitivity interpretation is a manifestation of what Pesetsky (1987) called D-linking. Certain *wh*-phrases, most notably the *which X* type, have a property that they presuppose a salient set of objects/people in the discourse context from which one is asked to pick.

One place where D-linking has been identified is in pair-list interpretation (e.g., Comorovski 1996; Hornstein 1995).

(62) *Who bought what?*

This is most naturally interpreted as a pair-list question. What has been noted is that in this example, *who* is D-linked, in that there is a presupposed set of people, and for each member of this set, we must return an answer of what s/he bought. A particularly cogent example of this need for D-linking was given by Bolinger (1978).

- (63) a. *It’s nice to have all those times scheduled, but when are you doing what?*  
 (#But what are you doing when?)
- b. *It’s nice to have all those activities ahead of you, but what are you doing when?*  
 (#But when are you doing what?)

In (a) the discourse establishes “all those times” as a topic, so that “when” can “link” to this discourse topic, thus be D-linked. “What” is understood as ranging over the possible “whens” that are known in the conversation. As indicated in the parentheses, reversing the order to “what...when” in this context is distinctly odd because “what” does not link to a discourse topic, hence it is not D-linked. This way of generating pair-lists in multiple *wh*-questions is generally accepted in semantics (Comorovski 1996, Hornstein 1994).

Returning to Japanese, the following example parallels the English *who bought what?* example.

- (64) *Dare-ga nani-o katta no?*  
 who-NOM what-ACC bought Q  
 ‘Who bought what?’

The most natural way to interpret this is that there is a presupposed set of people, and for each member of the set, tell me what s/he bought. Now, see what happens if we scramble the object wh-phrase *nani* ‘what’.

- (65) *Nani-o<sub>i</sub> dare-ga t<sub>i</sub> katta no?*  
 what-ACC who-NOM bought Q  
 ‘What, who bought?’

This is not wh-movement, but simply an instance of scrambling. What is noteworthy is that in this example, it is possible to interpret the scrambled *nani* as referring to the presupposed set of objects, and for each object, one is supposed to return the answer of who bought it.<sup>21</sup> This is consistent with the idea in Miyagawa (2004) that scrambling has an effect on interpretation in some form in virtually all cases.

Given what we have seen, it is not at all surprising that the original example by Saito (1989), in which a wh-phrase is scrambled long-distance, is an instance of proper movement – the wh-phrase becomes D-linked. This is why it is able to be interpreted as well as pronounced in the final scrambled position.

## 9. Conclusion

I gave ample evidence against what Saito (1989) called “radical reconstruction,” which he characterized as reflecting movement that is “semantically vacuous.” In his view, long distance scrambling is always semantically vacuous (but see Saito 1994). One interesting result of our study is that, despite the ample evidence against it, there is one narrow band of data where radical reconstruction appears to exist. This is in the domain of “illicit movement,” in which optional movement of a quantifier is not motivated in any way throughout the derivation. So, Saito was correct in identifying “semantic vacuity” with radical reconstruction – it is only when there is no semantic effect of any sort with scrambling that radical reconstruction occurs. However, unlike his assertion, radical reconstruction only occurs in one, highly narrow circumstance – when a quantifier undergoes illicit movement. This also questions Sauerland and Elbourne (2002), who assumes that PF movement is widely available in grammar, and Japanese scrambling may be semantically vacuous. I argued that the presence/absence of radical reconstruction follows from the properties associated with condition on



optional movement (Fox 2000). Finally, it is something of an oddity that the only instance of PF movement is found in a domain in which movement is not licensed. The question arises here as to whether this is true syntactic movement, or some other operation, such as a simple reordering at PF of two local constituents – akin to stylistic inversion discussed in the 1960s. If it turns out that radical reconstruction/PF movement is simply this kind of reordering, then we can conclude that there is no radical reconstruction in UG. Suppose that this is what turns out to be the case. It would then cast an interesting light on the history of the analysis of scrambling. Inoue (1976–1977) argued that scrambling in Japanese is not due to movement, but rather, it is some sort of a stylistic option in word order. Harada (1977) argued against this position and proposed that scrambling is due to syntactic movement. The study in this article generally supports Harada’s position, but at the same time, Inoue’s position is upheld at least for a small range of “scrambling” that does not have an effect on the output. This kind of scrambling may very well turn out to be exactly how Inoue described it – non-movement.

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### **Notes**

1. Saito uses the feature “P” (Chomsky 2000) instead of EPP, but it is the same feature.
2. See also Sabel, this volume, for the idea that scrambling must have effect on the output.
3. The availability of “all >not” in the example is due to the fact that “all” can always be interpreted with the group reading (cf. Miyagawa 2001).
4. Noam Chomsky and Kaneaki Arimura independently pointed this out to me.

5. Thanks to Takashi Munakata for suggesting the multiple-specifier possibility. See Sabel (2002) for related discussion.
6. See, for example, Groenendijk and Stokhof (1984), May (1985, 1988), Higginbotham (1991), and Beck (1996); and Chierchia (1993) for a different approach that is nevertheless consistent with what we are saying.
7. In fact, given the copy theory of movement (e.g., Chomsky 1993), Saito's concern about reconstruction being a lowering rule, hence in violation of PBC, can be set aside. In principle there are no traces, but rather copies that are either pronounced or not pronounced.
8. See Sabel (2002) for discussion of some complicating issues surrounding the "Lebeaux" data.
9. There is a complication inherent to Nishigauchi's example. It involves a wh-island, which is necessary to set up his argument since Saito's original example was an indirect question. However, we have already seen that reconstruction apparently does not occur into an island. Hence, it is not possible to create a "clean" argument/adjunct pairing, reflecting Lebeaux's original pair, using the indirect-question construction. This is why I used the normal biclausal structure to illustrate the argument/adjunct distinction in (23). In fact, Nishigauchi attempts to demonstrate the argument/adjunct distinction using an indirect question construction. We have already seen in (24) that *John* in an adjunct can escape a Condition C violation. Nishigauchi offers the following as a contrast (his judgment is given).

- (i) ?\* [*Hanako*<sub>i</sub>-no *donna imeezi-o*]<sub>j</sub> *kanozyo*<sub>i</sub>-ga [*Masao*-ga *t*<sub>j</sub>  
*Hanako*-GEN what.kind image-ACC she-NOM Masao-NOM  
*ki-ni-itte-iru ka*] *siritagatteiru*.  
 like Q want-to-know  
 'She wants to know what kind of image of Hanako Masao likes.'

Nishigauchi offers this example as an illustration of a Condition C violation since *Hanako* is an argument of *imeezi* 'image'. Nishigauchi does note elsewhere in his article that the judgments of this sort are tricky, and speakers split on how bad an "argument" example is. Note that this example involves a wh-island, which should make the reconstruction back into the island impossible. It is, then, something of a puzzle that the sentence is judged as ungrammatical. I leave this as an open question, including whether the sentence is as bad as, say, (23a).

10. In fact, Huang (1982), in showing that there is no wh island in Chinese, pointed out that the Spec of CP in the indirect question in Chinese is vacant, hence available as an escape hatch, because, in his system, the wh-phrase raises at LF.
11. See Yoshimura (1989) for a different judgment.
12. Although the "every > some" judgment of (34) is widely accepted, there are speakers who find (34) perfectly ambiguous. I will comment on it towards the end of the paper.

13. See Nishigauchi (2002) for an informative discussion of the issues surrounding binding and scrambling.
14. I have consulted six native speakers, all linguists. None got the wide reading of “everyone” in (39), as expected. They all got the wide reading of matrix “someone” in both (39) and (40), again, as expected. For the crucial reading – the wide reading of “everyone” over the matrix “someone” for (40), four of the six speakers got this reading, although one said that it is somewhat difficult. Of the remaining two speakers, one did not get it at all, and the sixth could not determine if the reading is available or not. I note that, after I completed this manuscript, I discovered that Abe (2003) has made similar observations as (39) and (40), although in a slightly different structure.
15. The discussion of (41) and related issues benefitted from comments by Hideaki Yamashita.
16. The pair-list interpretation is also absent in the example below (cf. Hoji 1986).
  - (i) *Nani-o<sub>i</sub> daremo-ga t<sub>i</sub> katta no?*  
     what-ACC everyone-NOM bought Q  
     ‘What, everyone bought?’

In this example the universal occurs in the subject position while the wh-phrase is the object. The English counterpart does have a pair-list interpretation (*What did everyone buy?*).
17. One possible exception is the T that goes with an unaccusative verb. See Miyagawa and Babyonyshev (2004).
18. See, for example, Bobaljik 1995, Fox and Nissenbaum 1999, Pesetsky 1998, Groat and O’Neil 1996.
19. See Sabel, this volume, for discussion of a similar example.
20. Thanks to Norvin Richards for pointing out this prediction.
21. Hagstrom (1998) points out that “anti-superiority” sentences such as (65) do not get associated with a pair-list interpretation, but only with a single-pair interpretation. Hagstrom is correct for (65), but only if focus-stress is placed on the scrambled wh-phrase *nani* in the sentence initial position. If there is no such stress on the first wh-phrase, pair-list interpretation is possible.

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