Can A-scrambling reorder DPs?*

Norvin Richards, MIT

norvin@mit.edu

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1. Introduction

Japanese A-scrambling appears to involve A-movement of one DP past another, c-commanding DP:

(1) [Taroo-to Hanako]$_i$-o [otagai$_i$ -no goryoosin]-ga hihansita (koto)

Taroo and Hanako ACC each.other GEN parent NOM criticize fact

'(the fact that) Taroo and Hanako, each other's parents criticized'

Examples like (1) have always been troublesome for theories of locality; such theories have been successfully predicting for years now (cf. Rizzi 1990 and much subsequent work) that A-movement of a DP past a c-commanding DP should be impossible. Approaches to A-scrambling in Japanese have therefore always faced the challenge of explaining why the normal rules of locality seem to be suspended in this case. Miyagawa (2001), for example, invokes Chomskyan (1993) equidistance to deal with this problem, suggesting that movement of the verb relaxes the rules of locality enough to make it possible for the lower DP to move past the higher DP.

McGinnis (1998) proposes a different solution to this kind of problem, involving a loosening of the conditions on locality in one specific place. She assumes the existence of "tucking in" derivations in the sense of Richards (1999); in general, when a new

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specifier is to be created for a head which already has a specifier, the new specifier is created beneath the existing one. Richards (1999) had proposed that this requirement ought to follow from general considerations of locality; if multiple specifiers are hierarchically ordered with respect to one another, then landing in a lower specifier ought to count as a 'shorter move' than landing in a higher one.

McGinnis (1998) proposes that this general condition of 'tucking in' should be suspended in just one case. When the existing specifier is one created by Merge (that is, External Merge), and the new specifier is to be created by Move (that is, Internal Merge), then 'tucking in' need not apply; the new specifier may be created above the old one. McGinnis uses this general principle to account for a number of cases in which general conditions on locality for A-movement seem to be relaxed (and see Rackowski (2002) and Bissell Doggett (2004) for further applications of the general principle).

In this paper I will offer a slight twist on McGinnis' proposal. The new proposal will make at least one new prediction; movements of this kind ought to be unable to reconstruct. We will see that this prediction is borne out in the case of Japanese A-scrambling.

2. The Timing of Move and Merge

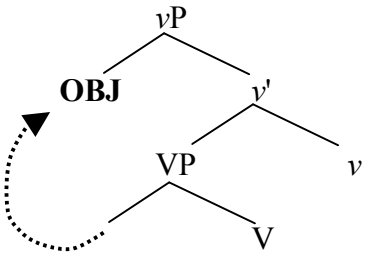
Consider a case in which *v* has two specifiers; one filled by External Merge, to which *v* assigns a theta-role, and another filled by Move, perhaps as one of the steps of scrambling. In what order should these specifiers be created?

We might stipulate, of course, that External Merge is to be preferred over Internal Merge, or vice versa, or that assignment of theta-roles takes precedence over checking of

uninterpretable features, or something along those lines. But suppose, for the time being, that we refrain from making any of these stipulations.

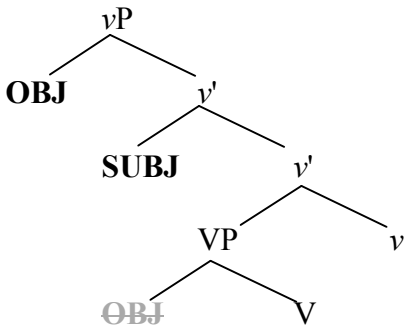
In that case, a derivation of the following type ought to be available. First, *v* Probes and finds a Goal—the object, let us say-- which moves, creating a specifier for *v*:

(2)



Now *v* needs to create another specifier, to which it will assign an external theta-role. Again, there are various stipulations we might make about where theta-roles ought to be assigned. Even without such stipulations, however, if we are right in assuming that 'tucking in' derivations are possible, then we know that new specifiers at least can be created under existing ones. In other words, as long as no new stipulation bans it, we ought to expect that the external theta-role could be assigned to a new specifier which is created under the one which was created in (2) above:

(3)



Unless we invent a new stipulation to ban it, then, the derivation in (2-3) ought to be a possible one. This derivation has several interesting properties. For one thing, it solves the locality problem: movement of the object in (2) does not cross any existing DP positions, since the subject is not inserted until (3).

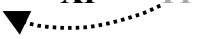
Another way of stating this property of the derivation would go as follows: there is no point in this derivation at which the subject c-commands the entire object chain. At the point in (3), when the subject is introduced, the subject c-commands only part of the object chain. This property of the derivation could have consequences for reconstruction, depending on how we wish to analyze reconstruction.

If reconstruction is simply a matter of interpreting one or another copy of a movement chain, then the availability of this derivation should have no effect on reconstruction; any derivation that leads to the representation in (3) ought, in principle, to allow for the possibility of reconstructing the object below the subject.

On the other hand, reconstruction is sometimes analyzed, not as selective interpretation of a member of a chain, but as intepretation of earlier stages of the derivation. In a derivation in which one XP moves past another in the ordinary way, these two approaches to reconstruction make similar predictions:

(4) a. **XP YP**

b. **YP XP** ~~**YP**~~



If YP moves past XP after both have been Merged, then an approach to reconstruction which interprets lower copies and an approach which interprets previous stages of the derivation can have the same result: YP can be interpreted below XP, either because there is a copy of YP below XP, or because there is a stage of the derivation (4a) at which YP is below XP.

In the derivation sketched in (2-3) above, however, the situation is different. Although there is a copy of the object below the subject, there is no earlier stage of the derivation at which the subject c-commands the object; there is, in other words, no counterpart of (4a). If A-scrambling proceeds via the derivation in (2-3), then, and if reconstruction is to be analyzed via interpretation of earlier stages of the derivation, then A-scrambling should be unable to reconstruct.

This result is of interest, because it has in fact been claimed that Japanese A-scrambling cannot reconstruct. In section 2 I will outline Yamashita's (2001) arguments for this conclusion. Section 3 will consider these facts from the standpoint of Sauerland and Elbourne's (2002) approach to reconstruction, one of the approaches which has the desired property of making reference to earlier stages of the derivation rather than to copies in a movement chain. Section 4 will conclude.

3. Yamashita (2001): A-scrambling cannot reconstruct

Yamashita (2001) takes as his starting point the theory of scrambling developed by Miyagawa (2001). In that paper, Miyagawa notes the contrast in (5):

(5) a. Zen'in-ga sono tesuto-o ukenakatta

all NOM that test ACC take-NEG-PAST

'All did not take that test' *all* > *not*, **not* > *all*

b. Sono tesuto-o zen'in-ga __ ukenakatta

that test ACC all NOM take-NEG-PAST

'That test, all didn't take' *all* > *not*, *not* > *all*

In the base SOV word order, Miyagawa points out, the quantifier *zen'in* 'all' must outscope negation. When scrambling yields an OSV word order, however, ambiguity arises; the subject quantifier may take scope either above or below negation. Miyagawa argues that this ambiguity reflects an ambiguity in the nature and landing site of scrambling. A-scrambling, he argues, lands in the specifier of TP, which is occupied by the subject in (5a); consequently, when the object A-scrambles past the subject, the subject is in a lower position, and must take scope below negation. A-bar scrambling, on the other hand, does not land in the specifier of TP, but in some higher position, and hence the subject occupies the specifier of TP as usual, outscoping negation. Since the word order in (5b) can be generated by either of these types of scrambling, this word order can have either interpretation.

Yamashita (2001) notes some interesting exceptions to the generalization in (5). In particular, he shows that OSV word orders do not result in ambiguity if the scrambled object is of a kind which must reconstruct. One of his arguments for this rests on Hasegawa's (1993) previous observation that DPs which strand numeral quantifiers must

undergo reconstruction. Such DPs, Yamashita observes, do not trigger the ambiguity in (5b) (see also Fitzpatrick 2006 for relevant discussion and expansion of this point):

(6) a. Zen'in-ga syukudai-o dasanakatta.
all NOM homework ACC assign-NEG-PAST
'All didn't assign homework' *all* > *not*, **not* > *all*

b. Syukudai-o zen'in-ga dasanakatta.
homework ACC all NOM assign-NEG-PAST
'Homework, all didn't assign' *all* > *not*, *not* > *all*

c. Syukudai-o zen'in-ga futa-tu dasanakatta.
homework ACC all NOM two CL assign-NEG-PAST
'All didn't assign two homeworks' *all* > *not*, **not* > *all*

(6a-b) replicate Miyagawa's observation in (5); SOV word order forces the subject to take wide scope over negation, while OSV word order triggers ambiguity. Yamashita observed that when the scrambled object floats a numeral quantifier, the subject must again unambiguously outscope negation. In Miyagawa's terms, object scrambling in (6c) cannot land in the specifier of TP; in other words, it cannot be A-scrambling.

Yamashita argues, then, that for scrambling to be A-scrambling, it must be of some DP which need not reconstruct. We saw in the previous section that the derivation under consideration here predicts that A-scrambling should be unable to reconstruct, given certain types of theories of reconstruction. In the following section, we will review one such theory.

4. Sauerland and Elbourne (2002): reconstruction and PF-movement

Sauerland and Elbourne (2002) develop a theory of reconstruction with the desirable property referred to in section 1: in this theory, reconstruction involves, not the interpretation of a lower copy in a movement chain, but the interpretation of a configuration in which movement has not taken place. They illustrate their proposal with ambiguous sentences like the one in (7):

(7) An Austrian is likely to __ win the gold medal.

[*an Austrian* > *likely*, *likely* > *an Austrian*]

The fact to be explained here is that the indefinite *an Austrian* may take scope either above or below *likely*. Their proposal, stated mainly in the 'T-model' architecture of the grammar, is that this ambiguity comes from an optionality with respect to the timing of A-movement of *an Austrian*. This movement can take place in the narrow syntax, in which case it feeds LF and alters scope. Alternatively, it can take place on the PF branch of the derivation, in which case it does not feed LF, and does not alter scope.

Sauerland and Elbourne point out a number of cases in which their theory makes correct predictions about derivations with multiple instances of movement. In the 'T-model', if we know that a particular instance of movement must be in the narrow syntax, then any other instances of movement preceding that instance must also be in the narrow syntax, and thus cannot reconstruct, in their model. They offer as an instance of this the phenomenon they call Barss' Generalization, exemplified in (8):

(8) [How likely to __ win] is an Austrian?

[*an Austrian* > *likely*, **likely* > *an Austrian*]

Barss (1986) notes that scope ambiguity vanishes in examples like (8), in which an A-moved DP fails to c-command its trace. Sauerland and Elbourne point out that this generalization follows from their account of reconstruction. The derivation of (8) ought to involve at least the steps in (9):

(9) a. is [how likely to [an Austrian] win]? *A-movement*

b. an Austrian is [how likely to ~~[an Austrian]~~ win]? *wh-movement*

We know that the wh-movement step in (9b) takes place in the narrow syntax, since it affects the meaning of the sentence. We also know that the A-movement of *an Austrian* in (9a) must precede wh-movement, since the c-command condition on movement will prevent this A-movement after wh-movement has taken place. In a T-model architecture of the grammar, it follows from these premises that A-movement of *an Austrian* must take place in the narrow syntax; in that architecture, any movement operation which precedes a narrow-syntax movement operation must also be a narrow-syntax movement operation. Consequently, in their approach, 'reconstruction' is blocked; since reconstruction is simply the result of movement in PF, and such movement is impossible in this case, reconstruction is correctly predicted to be impossible in this example.

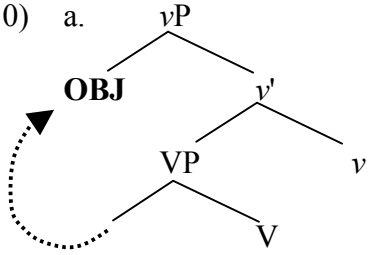
Sauerland and Elbourne point out at the end of their paper that the advent of phase theory makes this type of result somewhat more difficult to derive. In a multiple spell-out model, after all, it is perfectly possible to have derivations in which PF-movements precede movements in the narrow syntax. Any version of phase theory that incorporates

phase impenetrability, however, ought to leave their result intact. To see why, consider again the derivation of (8).

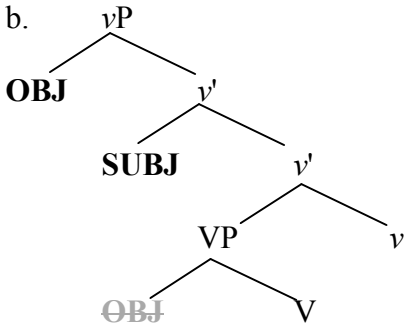
Recall that the derivation we want to prevent is one in which the step in (9a) occurs on the PF branch, followed by narrow-syntax movement in (9b). This type of derivation ought to be blocked by phase impenetrability. If (9a) is a PF-movement, then at least the portion of the structure in (9a) has undergone Spell-out to PF. Consequently, that portion of the structure ought to be opaque for the rest of the syntactic derivation; the movement in (9b) ought to be banned by phase impenetrability. Sauerland and Elbourne's result still holds; if one operation can be shown to be taking place in the narrow syntax, then preceding movement operations in the same syntactic domain will also have to take place in the narrow syntax, and hence will be unable to reconstruct.

Now we can apply this reasoning to the derivation given above in (2-3), repeated here as (10):

(10) a.



b.



We know that the step in (10b), in which the subject is Merged, must take place in the narrow syntax, since it has effects on both the phonology and the semantics. Consequently, we know that the step in (10a) must also take place in the narrow syntax. In other words, we know that the step in (10a) cannot reconstruct, which is the result we want.

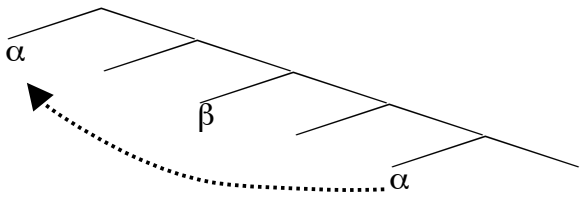
5. Possible extensions

Two possible extensions of the theory are probably worth discussing. All of the discussion has been of a case in which A-scrambling takes place past a specifier created by External Merge. Can this theory also allow A-scrambling past specifiers created by movement? I will argue below that it may be able to, given certain assumptions. Another question has to do with the distribution of non-reconstructing movements in Japanese: can they all be given a uniform analysis? Again, I will suggest that they can.

5.1 A-scrambling past derived positions

Let us consider, first, the question of whether A-specifiers created by movement can be passed by A-scrambling. Consider a tree with two phrases, α and β, in which α A-moves past β:

(11)

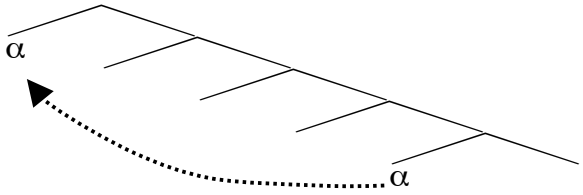


Here, then, is an instance of a specifier created by A-movement. Can β A-scramble past this specifier?

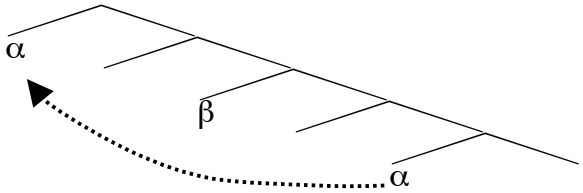
In this paper I have been arguing that a c-command relation between phrases in an A-position, once established, must be maintained for the rest of the derivation. That is, I am trying to defend the idea that A-movement past an A-position is always impossible. If this is correct, then the derivation in (11) should never be allowed, strictly speaking; the only way for α to get past β is via the derivation we have discussed.

Still, if we consider derivations of which the movement arrow in (11) is a part, there are at least two that are worth paying attention to. The first is a derivation like the one considered in this paper, in which movement of α precedes Merge of β:

(12) a.



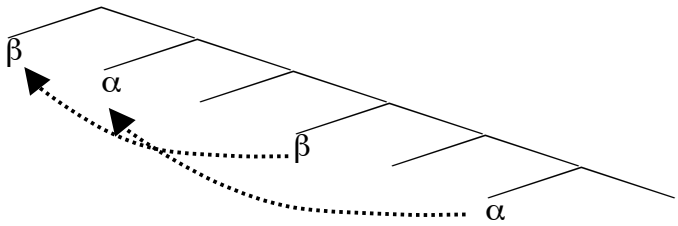
b.



In this derivation, there should be no way for β to move past α; as soon as β enters the derivation, it is c-commanded by α, and should be unable to A-move past it.

The second derivation of interest is one in which the head that drives A-movement of α also drives A-scrambling of β:

(13)



This derivation ought to be possible, under the assumptions of this paper, as long as movement of β precedes movement of α. The result of the derivation in (13), speaking purely representationally, is that the path of A-scrambling of β crosses a derived A-specifier. We expect such derivations to be possible, then, as long as it is possible for a single Probe to drive both A-movement and A-scrambling, and for scrambling to precede A-movement.

5.2 Another failure of reconstruction

Yamashita (2006) offers a theory of the ban on A-reconstruction which relates it to another fact about Japanese, namely the fact that (5a) (repeated here as (14)) is unambiguous:

(14) Zen'in-ga sono tesuto-o ukenakatta

all NOM that test ACC take-NEG-PAST

'All did not take that test' *all* > *not*, **not* > *all*

Here, on Miyagawa's (2001) approach, the subject has raised from the specifier of *v*P to the specifier of TP. Apparently this movement operation cannot reconstruct; the subject cannot be interpreted below negation. As Yamashita points out, it appears that movements to the specifier of TP in Japanese are generally unable to reconstruct. Yamashita offers an account of this fact which is based on Nevins and Anand's (2003) principle PEPPER:

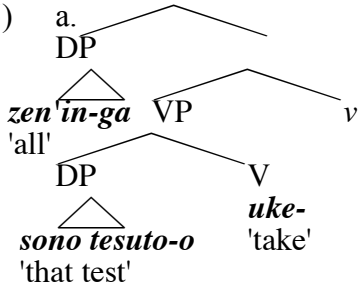
(15) Purely EPP Eliminates Reconstruction (PEPPER):

Movement driven only by the EPP cannot reconstruct.

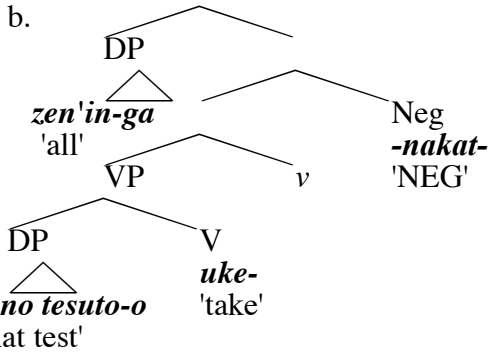
Yamashita's claim, then, is that movement to the specifier of TP in Japanese is driven only by the EPP, and thus can never reconstruct. Can the account developed here be generalized to deal with the fact in (14)?

I have been arguing in this paper that we can handle some instances of bans on reconstruction by allowing Merge below the root of the tree. If we allow such Merge operations, then we can create representations which appear to involve movement of one scope-bearing object X past another scope-bearing object Y, without actually generating any representations in which Y c-commands X. If we wish to account for (14) using the same mechanism, then we could posit derivations in which functional heads like Negation and Tense are Merged below the subject, without actually moving the subject at all:

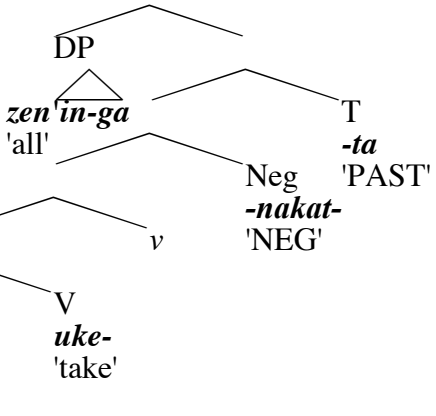
(15) a.



b.



c.



In the derivation in (15), the DP *zen'in-ga* begins the derivation as the specifier of *v*P, and ends it as the specifier of TP, without 'moving' in the conventional sense; rather, each functional head is Merged below the DP. Since there is no stage of this derivation at which the negation c-commands the subject, reconstruction of the subject below negation should be impossible. Such a derivation forces us to fairly unorthodox beliefs about label projection; either there are no labels, or the labels of nodes are not irrevocably and

immediately determined at the point of the Merge operation. But this is one way, at least, of offering an account for the lack of reconstruction in (14) along the lines developed in this paper. If we want to model the effects of PEPPER, one way to do it would be to say that derivations like the one in (14) are the only way for purely EPP-driven movement to proceed; in other words, actual movement of the familiar type cannot be driven purely by the EPP, but must be driven by feature-checking[1].

6. Conclusion

In this paper I have considered a type of derivation in which External Merge 'tucks in' under a specifier (sometimes one created by movement). This is a type of derivation that would be easy to exclude, if we wanted to introduce new stipulations to exclude it. I have suggested here that we should not do this, as the derivation looks like a useful one. It solves a locality problem for A-movement; the actual movement operation does not cross any intervening DPs, since the apparent intervener is introduced subsequently via 'tucking in'. It also correctly predicts (given certain types of theories of reconstruction) that this type of A-movement should not reconstruct; since there is no stage of the derivation at which the non-moved DP c-commands the moved DP, there should be no previous stage of the derivation for reconstruction to interpret in which the non-moved DP outscopes the moved DP.

If we admit this type of derivation, then familiar kinds of questions arise: what other cases of apparent A-movement past DPs can be analyzed in this way? For that

[1] In the derivation in (15), the Merged heads are added to the linear right edge of the clause; if such a derivation were attempted in English, the Merged heads would intervene linearly between already Merged elements. I have no idea whether this distinction successfully distinguishes between languages which allow 'purely EPP-driven' movement and languages which do not, but it seems like an interesting starting hypothesis.

matter, what other cases of movement which cannot reconstruct can be analyzed in this way? I will have to leave these questions for future research.

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