Proceedings of the First Meeting
of the
Formal Linguistics Society of Midamerica
1990

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PREFACE

The first annual Meeting of the Formal Linguistics Society of Midamerica (FLSM 1) was held at the University of Wisconsin — Madison from May 18-20, 1990. This volume contains 21 of the papers presented at the Meeting. The following authors did not submit their papers for publication in this volume: Matthew Alexander, William Davies, Chin W. Kim and Hyoung-Youb Kim, Beth Levin, Janis Melvold, Shigeru Miyagawa, David Pesetsky, and Jeongme Yoon and James Yoon.

This volume is the product of the work of many people. Special thanks to Müşvet Enç and Kyle Johnson for their pioneering endeavor — without them, neither this volume nor the conference would have been possible. Manindra Verma provided not only guidance, but also business sense. Last, but not least, thanks to Jacquelyn Drummy for her patience and skill in dealing with the countless details of organizing the Conference and of preparing this volume.

Funding for this publication was generously provided by the Graduate School of the University of Wisconsin — Madison; the conference itself was supported by a grant from The Humanistic Foundation of UW — Madison.

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On the Proper Treatment of Scrambling

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0. Introduction

In recent literature a number of questions have been raised regarding the nature of scrambling, or "free word order" phenomena, in languages as diverse as German, Hindi, Japanese and Korean. One of the central issues in this debate has been whether scrambling is uniformly a movement operation to an A-position (Yoshimura (1989)), an A-bar position (Saito & Hoji (1983), Saito (1985), a mixed position (Ahn (1988), Webehuth (1989), Miyagawa (1990)), or whether it is a broader-ranged phenomena involving movements of different types (Mahajan (1989, 1990), Tada (1990)).

In particular, recent work by Mahajan (1989, 1990) suggests that scrambling in Hindi includes both instances of A-bar and A-movement. On the basis of the results of three diagnostics—Weak Crossover (WCO) neutralization, reflexive binding, and anti-reconstruction effects—Mahajan shows that some instances of local scrambling in Hindi exhibit properties typical of A-movements, such as raising and passive constructions in English. In this paper we would like to suggest some possible alternative explanations for similar facts in Korean and Japanese (hereafter, K-J) which are consistent with more traditional analyses of scrambling as A-bar adjunction movement (Saito & Hoji (1983), Saito (1985)). We will also propose that in K-J both local and long-distance scrambling is movement of a uniform type, and crucially differs from Hindi in this respect. Furthermore, in our account the landing site of scrambling-type movement is both a non-A (= A-bar) position, and a non-operator position. We will end our discussion by pointing out a number of further empirical and theoretical problems with an account that treats scrambling in K-J as A-movement. [1]

1.0 Short(est) Distance Scrambling: A-movement?

Mahajan (1989, 1990) differentiates local scrambling, essentially clause-internal, from long distance scrambling. In this paper, we will make a further distinction between clause internal scrambling, which we term "short scrambling," and VP internal scrambling, which we will name as "shortest scrambling." This is consistent with our claim that scrambling in K-J is uniformly adjunction movement, with adjunction to VP being one possible option. Mahajan proposes that, whereas long distance scrambling is unambiguously A-bar movement, local scrambling can be substitution movement into the specifier positions of various inflectional categories; a type of A-movement. [2] Then, in Mahajan's account some instances of local scrambling can be A-bar (presumably adjunction) movement, but a certain set of cases must be unambiguously A-movement. The latter set includes the most local of these movements; what we are calling "shortest" scrambling. In the next sections, we will address the weak crossover and binding effects that Mahajan cites to show that certain core cases of scrambling must be A-movement. [3]

1.1 Weak Crossover Neutralization

The ungrammaticality of the English sentences in (1) is usually attributed to some formulation of Weak Crossover (WCO) (Koopman and Sportiche (1982), Higginbotham (1983), and Safir (1984)).

(1) a. *Who [do his parent]s adore t1
b. *His [mother] loves someone
Assuming that long-distance scrambling is unambiguously A-bar movement (cf. Mahajan (1989, 1990), Saito (1990)), the grammaticality of (7) shows that WCO can be neutralized even with A-bar binders. Furthermore, the lack of a contrast between (6) and (7) substantially weakens any argument that the movement in (6) is A-movement. Also, it has been pointed out by Stowell and Lasnik (1987) that there are a number of other cases of typical WCO configurations, involving A-bar movements, which lack WCO effects altogether. One clearly relevant example is topicalization in English which, like scrambling in K-J, has often been assumed to be derived by adjunction movement (Baltin (1982), Lasnik and Saito (to appear)).

(8) a. *His1 mother loves everyone1.
   b. ?Everyone1, his1 mother loves t1.

Thus, it appears that WCO does not suffice to distinguish A vs. A-bar movements.

1.2. Reflexive Binding

In English an NP that has undergone NP Movement can serve as a legitimate binder for Principles A and B of the Binding Theory. An NP that has been moved to an A-bar position, however, cannot serve as an antecedent to an anaphor or a pronoun (Chomsky (1981)). This is seen in (9).

(9) a. John1 seems to himself1 to be intelligent.
   b. *John1, the parents of himself1 like t1. (cf. John1, his1 mother loves t1.)
   c. *The man1, who the parents of himself1 hit t1, left home.

Mahajan notes that in Hindi a scrambled object can serve as an antecedent to a reflexive contained within an NP in subject position, and argues that the object is preposed to an A-position.

(10) a. */? ape1 bacon-ne mohan-koi ghar se nikaal diyya
      self's children Mohan house throw give-perf
      (*Self1's children threw Mohan1 out of the house.)
   b. ?? mohan-koi ape1 bacon-ne ghar se t1 nikaal diyya
      self's children house throw give-perf

The examples in (11) show the same effect in Korean.

(11) a. *Tasain-uy emma-ka John1-ul piphanhyssta
      self-gen mem-nom acc criticized
      (His1 mom criticized John1.)
   b. John1-ul casain-uy emma-ka t1 piphanhyssta
      acc self-gen mem-nom criticized
      (His1 mom criticized John1.)

Mahajan's conclusion seems quite plausible given that the possibility of reflexive binding is generally limited to A-positions (Chomsky (1981, 1986a)). However, it does not seem to be the case that all anaphors in natural languages obey the A-binding restriction. In K-J the reflexive casain/ziphus has the peculiar property of always being able to take A-bar (as well as discourse) antecedents (Fukui (1984), Yang (1986), Lee (1988)). Hence, a topicalized or relativized NP can serve as a local A-bar binder for a reflexive as in (12).

\[ \text{\textasteriskcentered} \]
(12) a. John₁-un casin₁-uy apeci-ka pwuckya
top self-gen father-nom is rich (As for John₁, his father is rich.)
b. [casin₁-uy emma-ka] t₁ tayilin] nam-ază
self-gen mom-nom hit man (The man whose mother hits)

These facts alone do not provide an argument for or against scrambling as A-bar movement. We simply wish to point out that, in the case of K-J, reflexive binding cannot be a useful test for determining the nature of the position (A or A-bar) of a potential binder. While we can merely speculate on the status of reflexives in Hindi with regard to the possibility of taking A-bar antecedents, if it proves true that Hindi reflexives must be bound by an NP in an A-position, examples as in (10) would provide one very strong piece of evidence for local scrambling in Hindi as A-movement.

1.3 Anti-Reconstruction

A number of facts in English seem to suggest that there is no reconstruction under A-movement.

(13) a. John₁ seems to himself₁ t₁ to be intelligent.
b. John₁'s mother seems to him₁ t₁ to like Mary. (cf. *John₁'s mother, he₁ likes t₁.)

There are, however, some important counter-examples to the claim that NP-movement doesn’t undergo reconstruction. [4]

(14) a. Books about himself₁ seem to John₁ t₁ to be on sale.
b. Each other₁'s children appear to the women₁ t₁ to be unhappy

These examples can still be accounted for without recourse to reconstruction if we allow Principle A of the Binding Theory to be an "everywhere" principle which can be satisfied at any level of representation, as has been suggested by Belletti and Rizzi (1988) and Lasnik and Uriagereka (1988). Assuming this to be the case, the anaphors in (14) are properly bound at D-structure, hence Principle A is met.

A-bar movements in English, however, manifest reconstruction effects as seen in the following examples (here we limit our examples solely to topicalization in English, cf. Barss (1987)).

(15) a. *John₁, Mary thinks he₁ likes t₁.
b. *John₁’s mother, he₁ loves t₁.
c. Himself₁, Mary thinks John₁ likes t₁.
d. *Him₁, John₁ likes t₁.
e. *Him₁, John₁ thinks that Mary likes t₁.

Parallel to English topicalization, scrambling in K-J exhibits reconstruction effects as seen in (16) (cf. Lee (1973)).

(16) a. John₁-ul kuji-ka t₁ piphanhayasta
self-acc nom criticized (Lit. *John₁, he₁ criticized.)
b. casin₁-ul John₁-i t₁ piphanhayasta.
self-acc nom criticized (Lit. Himself₁, John₁ criticized.)

There are, however, some apparent counter-examples to this claim which suggest that scrambling does not undergo reconstruction. These are illustrated in (17) below. [5]

self-acc gen mom-nom criticized (Lit. *he₁ criticized John₁'s mother.)
b. [John₁-uy emma]₁-lul kuji-ka t₁ piphanhayasta.
self-acc gen mom-nom criticized (Lit. *John₁'s mother, he₁ criticized.)

If scrambling always undergoes reconstruction we would expect (17b) to invoke a Principle C violation at LF. The grammaticality of (17b) can be accounted for by a few independently motivated assumptions. Crucially, we assume that in K-J possessive modifiers, such as John₁-uy 'John’s,' must be adjuncts located outside of NP (cf. Fukui (1986)). [6] Then, if only argument NPs (not N or N*) can undergo reconstruction, the argument emma 'mother' will be reconstructed standing the adjunct behind, hence satisfying Principle C at LF. That only argument NPs undergo reconstruction is motivated by a number of argument-adjunct asymmetries with regard to reconstruction of topicalized NPs in English (cf. Lebeaux (1988), Chomsky MIT class lectures, 1989). [7]

(18) a. *Pictures of John₁, he₁ likes t
b. Pictures near John₁, he₁ likes t
(19) a. *The story that John₁ left, he₁ wrote down t
b. The story that John₁ told, he₁ wrote down t

There is a remaining class of examples which pose an interesting problem for our claim that scrambling in K-J undergoes reconstruction parallel to A-bar movements such as topicalization in English. These examples involve what we have termed "shortest" scrambling. First, observe the following data (cf. O'Grady (1987) and Kuno (1987)). [8]

(20) a. na-nun Mary₁-eyekey casin₁-uy sensayung-ul sokhayhasta
I-top dat self-gen teacher-acc introduced
(I introduced her₁ teacher to Mary.)
b. *na-nun casin₁-uy sensayung-ul Mary₁-eyekey t₁ sokhayhasta
I-top self-gen teacher-acc dat introduced
(I introduced her₁ teacher to Mary.)
c. ?na-nun Mary₁-eyekey casin₁-ul (kewul-lo) pichwuesta
I-top dat self-acc mirror-in showed
(I showed Mary₁ to herself.)
d. na-nun casin₁-ul Mary₁-eyekey t₁ (kewul-lo) pichwuesta
I-top self-acc dat mirror-in showed
(I showed Mary₁ to herself.)

(20) shows that shortest scrambling neither undergoes reconstruction nor observes Belletti and Rizzi's condition on Principle A, restated as (21). [9]

(21) Principle A can be satisfied at D-structure.

If the scrambled NP undergoes reconstruction, or if the anaphor can satisfy Principle A at D-structure, as we have maintained, then we would expect (20b) to be grammatical. Pointing out similar data from Hindi, Mahajan accounts for the ungrammaticality of examples of the type of (20b) by claiming that the anaphor contained NP is scrambled to an A-position from which it cannot be "reconstructed." Such an analysis must also reject (21) in order to prevent the anaphor from satisfying Principle A prior to scrambling. We will return to this problem and give an alternative solution in section 2.2.

In sum, we have a situation where we can potentially test for whether a phrase has been moved to an A-position or an A-bar position by way of the presence or absence of
reconstruction effects. We have shown that local scrambling in K-J exhibits reconstruction effects (see eg. 16). Thus, insofar as this test is a legitimate one, and if we can explain the odd behavior of "shortest" scrambling, it seems that scrambling in K-J patterns with A-bar movements such as topicalization in English.

2.0 Towards a Few Alternative Solutions

Let us summarize what we have said up to this point and identify some remaining problems. In section one, we have illustrated a number of properties of scrambling in K-J related to WCO, reflexive binding, and reconstruction effects. We have tried to show that these properties, for the most part, behave as expected if scrambling is an instance of A-bar movement, as has been typically assumed. There remain two problems which need to be addressed in more detail. First is the absence of Weak Crossover effects with scrambling. Second is the lack of reflexive binding and/or reconstruction effects with shortest scrambling. We turn to these problems immediately in the next two sub-sections.

2.1 Lack of WCO Effects with Scrambling

Saito (1989) suggests that scrambling is semantically vacuous movement and that it may be freely "undone" at LF. More specifically, scrambled phrases can be literally "reconstructed" to their in-situ positions at LF. Saito further notes that the landing site for scrambling, presumably an XP-adjunction operation, should be a non-operator A-bar position. His proposal implies that there are at least two types of A-bar positions: operator and non-operator positions (see Weibelhuth (1989) for similar approach). We will assume Saito's (1989) argument that the landing site of scrambling is a non-operator position, and that scrambled phrases cannot be true syntactic operators, hence crucially lack quantificalional force. Now, considering the seeming WCO configuration invoked by scrambling.

(22) nwukw1-lul [ pro1 emma -ka ta1 piphanhayss-ni ]
who-acc mom-nom criticizd-Q (*Who1 did his1 mom criticize)

Assuming that wh-phrases must move to the Spec of CP universally either at S-structure or LF (Lasnik & Saito (1989)), two LF representations for (22) seem to be possible as illustrated in (23a) and (23b) below. [10]

(23) a. [CP [C [IP wh1 [IP ...1] ...]]
   LF (1)
   SS (2)
   (3)

b. [CP [C [IP wh1 [IP ...1] ...]]
   LF (1)
   SS (2)

(23a) involves a derivation where the scrambled phrase nwukw1 'who' is reconstructed to its D-structure position at LF prior to raising to Spec of CP. In (23b) the wh-phrase moves directly from the scrambled position to Spec of CP without LF lowering. Let us further assume that (23a) is not a possible derivation due to the Principle of Economy proposed in Chomsky (1989) (cf. also Pesetsky (1989))

2.2 Shortest Scrambling and the Directionality of Linking

Consider the following examples.

(26) a. [casin1-uy emma]-lul2 John1-i 12 tayleyssta.
   self-gen mom-acc nom hit (Lit. [His1 mother]2, John1 hit 12.)

b. [casin1-uy emma]-lul2 na-nun [John1-i 12 tayleyssta]-ko mhalhaysssta.
   self-gen mom-acc fr-nom nom hit-comp said (Lit. [His1 mother]2, I said that John1 hit 12.)

The sentences in (26) show, crucially, that in both local and long-distance scrambling, scrambled phrases exhibit reconstruction effects. However, given our assumptions about the structure of NP's in K-J the anaphors in (26) will not undergo reconstruction (in the literal sense), hence, we adopt the further assumption that Principle A can be satisfied at D-structure. Recall that the examples in (20), repeated here as (27), do not display either of these effects.

(27) a. na-nun Mary1-ekey casin1-uy sensayng-ul sokhayyssta
   I-top dat self-gen teacher-acc introduced
   (I introduced her1 teacher to Mary1.)

b. /*na-nun casin1-uy sensayng-ul Mary1-ekey ti1 sokhayyssta
   I-top self-gen teacher-acc dat introduced
   (I introduced her1 teacher to Mary1.)

c. ?na-nun Mary1-ekey casin1-ul (kewul-lo) pichwuessta
   I-top dat self-acc mirror-in showed
   (I showed Mary1 to herself1.)

d. /*na-nun casin1-ul Mary1-ekey ti1 (kewul-lo) pichwuessta
   I-top self-acc dat mirror-in showed
   (I showed Mary1 to herself1.)

As noted above, Mahajan (1989, 1990) citing examples in Hindi, argues that shortest scrambling is unambiguously A-movement. Hence, the ungrammaticality of (27b & d) is predicted under his account if A-movements do not undergo reconstruction. However, as
we noted in section 1.3, this account for the ungrammaticality in (27b) is problematic since Principle A seems to be able to be met at D-structure, prior to scrambling-type movement (see the examples in (14)). [12] Therefore, we see the need for an alternative account.

In K-J, scope relations of QPs are generally determined at S-structure, as can be seen from the following example.

(28) nwukwunka-ka nwukwuna-lul salanghanta
   someone-nom everyone-acc loves [some > every, *every > some] (Someone loves everyone.)

Unlike English translation, (28) is unambiguous in Korean, see also Kuroda (1971), Hoji (1985) for Japanese). Huang (1982) postulates the following principle to account for similar facts in Chinese.

(29) The Isomorphic Principle
Suppose A and B are QPs. Then if A c-commands B at S-structure, A c-commands B at L.

(29) can correctly predict that (28) has only one interpretation, that is, the wide scope reading of the subject QP over the object QP. (29) also predicts that if two QPs c-command each other, ambiguity should arise. This prediction is borne out, as seen in the following Korean example.

(30) a. na-nun nwukwunka1-eykey nwukwuna-lul sokhayassta
   I-top someone dat everyone-acc introduced [some > every, every > some]
   (I introduced everyone to someone.)

(30) is ambiguous both in English and Korean. [13] Miyagawa (1990) observes that the same ambiguity results in the Japanese counterpart of (30) (contra Hoji (1985)). Miyagawa proposes that this ambiguity of interpretation is due to the non-binary phase structure in dative constructions. Thus, if we adopt this proposal that not all phrase markers are generated as unambiguous paths (in the sense of Kayne (1981)) the structure in (30) would be such that the first QP and the second QP mutually c-command each other as in (31).

(31)    VP
/      \\
QPI QP2 V

In this configuration, following (29), either QP can take wide scope over the other. Therefore, the scope ambiguity can be obtained. Now observe the following data.

   (Jackie introduced her#2 teacher to Mary2.)

b. [casin1/2-uy sensayang]A-ul Jackie1-ka Mary2-eykey t3 sokhayassta self-gen teacher-acc nom dat introduced
   (Her#2 teacher, Jackie1 introduced t3 to Mary2.)

In (32a) the anaphor casin contained in [ ... A] can be coreferential with either the subject Jackie or the indirect object Mary. However, when the direct object [ ... A] is scrambled to beginning of the sentence, casin can be coreferential with only the subject but not with the indirect object. Mahajan (1989, 1990) observes similar facts in Hindi. If we follow his arguments for Hindi, the scrambled direct object in (32) would be derived by two steps as in (33).

(33) [s [NP ... casin ...] [s Jackie [IP t1] [VP Mary t1 V=3]]]

According to Mahajan, the first step to the Spec of t1 (a case-marked position) should be A-movement whereas the second step to the S-adjointed position can be A-bar movement. Hence, reconstruction of the scrambled phrase is possible to t1 but not to t1. Thus, the anaphor casin can be bound by Jackie at LF. Two problems arise with this account. First, as we noted above, his proposal cannot easily explain the reconstruction effects seen in A-movements as in (14), repeated here for ease of exposition.

(14) a. Books about himself seem to John1 t1 to be on sale.
   b. Each other1's children appear to the women1 t1 to be unhappy

A second problem is that, in Korean, similar effects can be found even when subcategorized PPs are scrambled (this fact is also noted in Lee (1988)).

(34) a. John1-1 Bill2-ul [PP casin1/2-uy pang-ey] katwessta nom acc self-gen room-in confined
   (John1 confined Bill2 in his1/2 room.)

b. [ppcasin1/2-uy pang-ey]t3 John1-1 Bill2-ul t3 katwessta self-gen room-in nom acc confined
   (in his1/2 room, John1 confined Bill2.)

(35) a. John1-1 Bill2-ul [PP casin1/2-uy cip-uloe] ponaysta nom acc self-gen house-to sent
   (John1 sent Bill2 to his1/2 house.)

b. [ppcasin1/2-uy cip-uloe]t3 John1-1 Bill2-ul t3 ponaysta self-gen house-to nom acc sent
   (to his1/2 house, John1 sent Bill2.)

If PPs do not need abstract case, the intermediate case-assigned position may not be available as a landing site for them. Then, PP-scrambling of the type seen in (34) and (35) should be unambiguously A-bar movement, particularly if we assume that A-movement is case-driven. However, (34)-(35) seem to require an account parallel to (32).

We propose the following condition on the distribution of anaphors in order to account for the exceptional cases noted above, as well as a range of other problematic examples.

(36) Directionality of Linking Under Sisterhood (DLUS) (Tentative formulation)
In a configuration
   Z
   / \ Y cannot be the antecedent of an anaphor X
   A   B
   1
   [... X ...] [... Y ...]

The generalization is that an anaphor cannot precede its antecedent if they, or the maximal projections containing them, are sisters at D-structure. We further suggest that DLUS overrides most other effects and principles of the grammar, such as reconstruction effects and Binding Theory.

Now, notice how DLUS can account for (35b), assuming the following phrase structure (irrelevant details are omitted).
John can be a potential antecedent for casin in (37) by either reconstruction or satisfaction of Principle A at D-structure. In this case, DLUS is not operative since casin does c-command John at D-structure, hence, the standard effects/principles can be applied. However, according to DLUS, Bill cannot be a potential antecedent for casin since they mutually c-command each other and their containers, NP and PP, are sisters at D-structure. Notice that we stipulate DLUS as a powerful condition which overrides any principles of reconstruction and standard application of Principle A, hence, making them inapplicable. One might wonder whether DLUS is merely a language-particular process or whether it is a more general principle of UG. If this condition cannot be extended to other languages, it weakens our claim to its existence substantially. Interestingly, however, the effects of this constraint can be detected in English as well as Japanese and Korean. Consider, for example, the following data, discussed in Postal (1971), which has remained problematic for most standard versions of Binding Theory (see also Jackendoff (1990) for a recent discussion of similar examples). [16]

(38) a. Bill talked to John about himself.
   b. **Bill talked about himself to John.

(39) a. *Bill talked to himself about John.
   b. ?Bill talked about John to himself.

(40) a. To John, Bill talked about himself.
   b. **About himself, Bill talked to John.

Assume that the two PPs selected by the verb talk are generated in the following fashion (the linear order of two PPs is irrelevant).

(41) VPZ
    / \    V PPA PPB
    |   \    talk P NPY P NPY
    |    |  John himself

This configuration corresponds exactly to the DLUS environment suggested above. Thus, we correctly expect DLUS effects, as is witnessed in (38), (39) and (40). Therefore, it would appear that DLUS is not a language-specific condition but, rather, should be taken as a more general principle of UG.

3.0 Long Distance Scrambling in Korean/Japanese and Hindi

Up until this point we have discussed mainly the properties of local, "short" and "shortest" scrambling. We would now like to turn to examine Long-distance (henceforth L-) scrambling in more detail. Mahajan (1989, 1990) explicitly uses contrasts between L-scrambling and local scrambling to argue that one is A-bar movement whereas the other can be A-movement. The interesting fact about L-scrambling in K-J is that it behaves identically to local scrambling. This gives support to our claim that local (i.e. "short" and "shortest") scrambling is non-distinct from L-scrambling in that it is also A-bar adjunction movement. In fact, earlier the lack of WCO effects with L-scrambling in K-J was used to argue that such a property could not be used as a diagnostic for A-movements. We will now illustrate the full paradigm of effects with regard to the phenomena discussed above. We also note that there are some crucial differences between L-scrambling in K-J as compared to Hindi (Mahajan (1989, 1990)).

First of all, as shown in (7) above, in K-J, instances of L-scrambling do not appear to induce WCO effects. We repeat (7) as (42) below.

(42) a. ?nwukwul-1ul [ pət emna]-ka [John-i t̪i pihanayyst]-ko malhay-st-ni ]
   who-acc mom-nom nom criticized comp said-Q
   (*Who1 did his1 mom say that John criticized t1 ?
   b. ?nwukwuna1 [ pət emna]-ka [John-i t̪i pihanayyst]-ko malhayysta].
   everyone mom-nom nom criticized comp said
   (*His1 mom said that John criticized everyone t1 .)

In contrast to the situation in K-J, Hindi L-scrambling exhibits WCO effects as seen in (43) from Mahajan (1989, 1990).

(43) *kis-k01 uskii baih-ne socaa [CP ki ramm-ne t̪i dekhaa thaa]
   who his sister think that Ram seen be-past
   (*Who1 did his1 sister think that Ram hadn't seen?)

In K-J, L-scrambling shows reconstruction effects (where these effects may be due either to literal reconstruction of the anaphor, or satisfaction of Principle A at D-structure).

(44) casin1-lul na-nun [John-i t̪i tayyyst]-ko malhayysta.
   self-acc 1-nom nom hit -COMP said
   (Lit. Himself1, I said that John hit t1.)

Hindi is similar to K-J in that it, too, shows reconstruction effects when reflexives are scrambled (Mahajan, 1989, 1990).

(45) apne aap-k01 siitaa socii he ki [ramm]-ti pasand kartaa he
   himself Sita thinks that Ram likes
   (Sita thinks that Ram likes himself.)

Another important property of L-scrambling in K-J is that it alters binding relations (contra Saito (1990)). Thus, a scrambled embedded object can serve as a legitimate binder for an anaphor contained in the matrix subject in (46).

(46) John1-1ul [ casin-uy emna]-ka [ Cerie-ka t̪i poast]-ko sayngkakhaayysta
   acc self-gen mom-nom nom saw -COMP thought
   (Lit. John1, self's mom thought that Cerie saw t1 )

As we noted earlier, we do not consider this a valid argument that L-scrambling in K-J must be A-movement since the anaphor casin/tibun can take an A-bar antecedents. In Hindi, however, L-scrambling does not alter binding relations as seen in (47).
This suggests that, in Hindi, anaphors such as apnī must take A-binders. Otherwise, given the "everywhere" condition on Principle A, we would expect (47) to be grammatical. One final difference between K-J, on one hand, and Hindi, on the other, comes from long distance movement of wh-phrases. Mahajan (1989, 1990) notes that in Hindi syntactic fronting of an embedded wh-phrase is obligatory. Hence, (48a), with the wh-phrase in-situ at S-structure, is ungrammatical.

(48) a. *raam-ne socaa [CP ki sitiaa-ne kis-ko dekhaa tha] Ram thought that Sita who seen be-past (Who did Ram think that Sita saw?)
   b. kis-ko* raam-ne socaa [CP ki sitiaa-ne tī dekhaa tha] who Ram thought that Sita seen be-past (=48a)

Scrambling in K-J, however, is always an optional, in fact marked, operation. Hence, the Korean counterpart to (48) is perfectly grammatical as seen in (49).

(49) John-un [Mary-ka nwkul-lul poasta]-ko sayngkakhayys -ni top nom who-ace saw COMP thought-Q (Who did John think that Mary saw?)

Whatever underlies the distinctions here, it is clear that scrambling in Hindi behaves differently from K-J. We will simply end this section with the speculation that the properties noted above, with regard to L-scrambling in Hindi vs. K-J, may possibly be derived if this movement is to an operant position in Hindi and to a non-operant position in Korean/Japanese. In both cases, L-scrambling is clearly some type of A-bar movement.

4.0 Further Issues and Problems

It has been generally assumed that A-movement is an obligatory, Case (or Agreement)-seeking movement. This follows from Chomsky’s (1986)”last resort” principle which essentially states that Move Alpha may only move an NP to a case-marked position if Case considerations require it.[17] This raises a number of problems for an account which treats scrambling-type phenomena as substitution movement to specifiers positions of inflectional categories, unless this is case-driven movement. However, if scrambling in K-J is case-driven, an immediate problem is that not only NPs but also (subcategorized) PPs and VP-adverbs may undergo scrambling, as seen in (50).

(50) a. nay-ka chayksang-wuye1 ecey tī ton-ul nohassta
   l-nom table-on yesterday money-ace put
   (I put the money on the table yesterday.)
   b. Mary-ka marisske1 onulo tī pap-ul meknunta
   nom deliciously today also rice-ace eat
   (Mary eats rice deliciously today, too.)

Also highly problematic is the fact that Bare NPs without case particles cannot be scrambled. If scrambling moves NPs from non-case-marked positions to Spec of IP (or AgrP1,2,3,...) to receive case, this fact, illustrated in (51), is unexpected.

Further, assuming a Theory of Movement as in Chomsky (1986b), it is not clear how truly optional movements such as scrambling in K-J should be treated. Previously, scrambling, due to its characteristic of optionality, has been regarded as merely “stylistic” movement occurring at PF (Ross (1967), Chomsky and Lasnik (1977), Rochemont (1978)). But, as we have seen, scrambled XPs have import at LF, hence, must undergo movement prior to PF. Note further that many other constructions in English which were thought to “stylistic” and of little import to syntax, have been reanalyzed as syntactic “focus” movement. These include: Heavy NP Shift, Extraposition, and Presentational there -Constructions in English. In many recent accounts, these “focus” constructions have been treated as instances of rightward adunction movement (see in particular, Johnson (1985), Rochemont and Culicover (1990), and Baltin (1982)). Here we simply wish to note that scrambling and these “focus” movements share non-trivial common properties in that they are optional movements, stylistic in nature, and perhaps both adunction operations. One possible generalization is that the last resort principle only applies to substitution movement, with other principles governing optional adunction-type movement. Then, by assuming scrambling in K-J to be derived by adunction we can capture the fact that it displays properties typical of syntactic A-bar movement, and that it is not prototypical Wh-Movement, but rather an optional focus-type movement creating a semantically vacuous operator-variable chain.

5.0 Conclusion

In this paper we have shown that it is possible to account for certain weak crossover and binding effects with scrambling in K-J without appealing to A-movement. Such an account is superior to one which relies on a rule that allows a uniform approach to all instances of scrambling in K-J regardless of distance. Hence, we maintain that scrambling in K-J is unambiguously adunction movement to a non-operator position; essentially the position initialized by Saito and Hoji (1983). We further define such adunctions as being A-bar movement, crucially relying on a two-way split between operator A-bar positions and non-operator A-bar positions. We have also noted a number of empirical and theoretical problems that arise with an A-movement account. If, however, it is true that a number of non-superficial differences between scrambling in K-J and scrambling in Hindi exist, as we have suggested, the account given in Mahajan (1989, 1990) may remain essentially correct for Hindi, if not K-J. The unique characteristics of scrambling-type movements in K-J suggest that a finer-grained typology of movements are required beside A/A-bar distinction.

Notes

*We would like to thank the participants of that conference, whose questions and criticisms we have benefited from. Also, we are particularly grateful to Kyle Johnson for valuable comments and suggestions on several earlier versions of this paper. All remaining errors and omissions are ours.

[1] Due to lack of space we give only Korean examples throughout. It is our judgement, however, that the Japanese counterparts to the examples cited bear the same judgements with respect to grammaticality and formness.
[2] The existence of PP-scrambling in K-J poses a problem for a uniform A-movement analysis, since PPs, as is well-known, never undergo NP-movement. (cf. Webelhuth (1989)).

[3] Mahajan (1989, 1990) assumes an articulated IP structure and argues that scrambling in Hindi is movement to the Spec positions of these categories. He argues that NPs in Hindi must move through these positions in order to trigger Case and Agreement. We largely ignore this aspect of his argument due to lack of space. Note, however, that the proposals we make here do not rely on an articulated structure for IPs.

[4] (14) can be problematic for any account that argues against Principle A satisfaction of Belletti and Rizzi's (1988) type, otherwise one should optimally allow reconstruction for (14) but not for (13).

[5] The grammaticality judgments for examples like (17b) are not uncontroversial. There are some native speakers who do not tolerate this sentence with the intended coreference. In this case, however, (17b) would not be problematic.

[6] There is independent evidence to support the idea that the Genitive NPs in K-J do not locate in the Spec position. As seen in the following, unlike English, Genitive NPs in K-J are iterable. (cf. Fukui (1986))

(i) a. *MIT's last week's Chomsky's that lecture
b. MIT's (eye-se)-uy cinancwu-uy Chomsky's ku kang i
  gen last-week-gen that lecture
See also Haji (1987) for further arguments that subjects of NP in Japanese must be adjuncts.

[7] We are grateful to Kyle Johnson for bringing this fact to our attention.

[8] S-TO-DO-V order is generally regarded as an underlying word order. Following this tradition, we assume (20a) as D-structure for (20b) without clear evidence.

[9] Note that if our assumptions regarding NP structure in K-J are correct and only argument NPs undergo reconstruction, the NP sensaying-un will undergo reconstruction stranding the anaphor behind. Then, (20b) will only be problematic with regard to (21).

[10] Notice that we are claiming that LF lowering of scrambled phrases is optional unless other principles of the grammar force its application. Thus (23b) can be a good option alongside (23a).

[11] Note that in a typical WCO context, such as the following, the pronoun is locally bound by the semantic operator.

(i) a. *Who3 did his3 mom criticize
   b. CP {wh} [C [IP . . . hisi . . . t1] . . . ]

As observed in Stowell & Lasnik (1987), there are cases where a non-semantic operator is in operator position such as appositive relatives, Topicalization, tough constructions, (pseudo)-clitics and parasitic constructions and so forth; it is not the case that all A-bar chains exhibit the WCO effect. For some recent analyses of such asymmetries, see Contrares (1989) and Tajima (1989). Some of these analyses are illustrated in (ii).

(ii) a. John1, his3 mother dislikes t1.
   b. The man3, who his1 mother dislikes t1, is unhappy.

These cases also obviate WCO effects. Thus for the purpose of our discussion, the general condition for WCO contexts may be as follows. (cf. Jaeggli (1984), Saito (1990))

(iii) A pronoun cannot be locally A-bar bound by an (semantic) operator in operator position.

[12] This doesn't imply that Principle A must be met by D-structure. Principle A can be satisfied at any level of representation as long as it is satisfied by LF. Witness the following.

(i) a. They1 seem to each other1 [t1 [to be insane.]]
   b. Himself1, John thinks [t1 [Mary hates t1.]]
   Principle A met at LF Assuming that himself in (ii) can be partially reconstructed to t at LF, Principle A can be satisfied at LF (see Barss (1987) for a slightly different account).

[13] In English, the Double Object Construction sharply contrasts with Dative constructions in that the ambiguity does not arise in the former. This contrast is illustrated in (i).

(i) a. Bill gave someone everything.
   b. Bill gave everything to someone.

See the relevant discussion on this matter in Aoun & Li (1989).

[14] For our purposes, we adopt Reinhart's (1976) "first-branching" definition of c-command.

(i) A c-commands B if A and B do not dominate each other and the first branching node dominating A also dominates B. Also, we do not regard a PP headed by the English preposition to as being visible with respect to Binding Theory.


(i) a. [pro] katta hon-2-o  [IP dare-1 ga [VP t2 yonda]]

   (the book that he1 bought2 everyone read)

   b. *[pro] hosigatteru hon-o1 ni Mary-ga dare-1 ni t2 yatta no
   want book-acc nom who-dat gave Q
   (lit. [the book that he1 wanted] Mary gave who1 ?)
   c. Mary-ga dare1 ni [pro] hosigatteru hon-o1 yatta no
   nom who-dat want book-acc gave Q
   (lit. Mary gave who1 the book that he1 wanted?)

We speculate that this contrast can be also subsumed under DLUS effect. We leave aside the proper technical modification for the variable binding involved with these cases.

[16] The grammaticality judgments that we indicate in these examples vary from the speaker to speaker and slightly differ from Postal (1971).

[17] Chomsky (1986; 135-137) formulates this principle in terms of maximal CHAINs as in (i).

(i) If C = (@1, . . . @n) is a maximal CHAIN, then @1 is in a Case-marked position.

References