Reconstruction, Weak Crossover, and Binding in Korean Scrambling: Some Theoretical Implications*

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Choi Young-Sik. 2004. Reconstruction, Weak Crossover, and Binding in Korean Scrambling: Some Theoretical Implications. *The Linguistic Association of Korea Journal, 12*(2), 185-206. The facts on reconstruction and Weak Crossover effects in scrambling lead one to propose that scrambling in monoclausal construction is A-movement, whereas the same operation in biclausal construction is initial A-movement to the left periphery of the embedded clause followed by the subsequent A'-movement to the surface position and that A-movement is not subject to reconstruction. The present research has an important theoretical implication of supporting the proposals in the literature (Chomsky 1995, Lasnik 1999) that A-movement is not subject to reconstruction, and suggesting that pronominal binding applies derivationally. The present analysis also suggests that scrambling as nonoperator and non A movement along Saito (1992) cannot be the right analysis.

Key words: reconstruction, A-movement, A' movement, unselective, binding, pronominal

1. Scrambling as a Syntactic Phenomenon

Korean is a strict head final language with the object preceding the verb as illustrated in (1).

(1) John-i nwukwu-lul chotayhayss-ni?
J-NOM who-ACC invited-QM
'Whom did John invite?'

Sometimes the object, however, is fronted to sentence initial position via a process called scrambling (Ross 1967) as in (2).

(2) Nwukwu$_i$-lul John-i t_i chotayhayss-ni?
who-ACC J-NOM invited-QM
'Whom did John invite?'

Chomsky and Lasnik (1977) suggest that scrambling is a PF phenomenon and others (Hoji 1985, Saito 1989, 1992, among others) claim that it is a syntactic phenomenon. The fact that scrambling in Korean is subject to standard syntactic constraint such as subjacency (Chomsky 1977, 1986, among others), as shown below in (3), suggests that it is a syntactic phenomenon.

(3) *Nwukwu$_i$-ekey ne-nun [$_{NP}$[$_{CP}$John-i t_i ssun] pyenci-lul]
who-DAT you-TOP J-NOM wrote letter-ACC
ilkess-ni?
read-QM
'Who is the person x such that you read a letter John sent to x?'

Moreover, scrambling clearly has semantic effects in that the hearer to the scrambled wh-question as in (2) is asked to pick out a subset from a set, knowledge of which is presupposed both by the speaker and the hearer.[1] This knowledge is not presupposed crucially in the canonical wh-question as in (1), which further indicates that scrambling is a syntactic phenomenon. Since scrambling across more than two clauses is extremely awkward as observed by Nishigauchi (1990), I will focus on scrambling in monoclausal and biclausal construction only.

2. Basic Facts

The picture that emerges from the initial paradigm involving Weak

1) For a different view, see Saito (1989 and 1992) who claims that scrambling is a syntactic phenomenon with no semantic effects.

Crossover (Postal 1971, Wasow 1972, Chomsky 1976, Higginbotham 1980, Koopman and Sportiche 1982, Reinhart 1983, and Safir 1984, among others) and Binding Condition C (Chomsky 1981) is the following: Scrambling in monoclausal construction is A-movement, and scrambling in biclausal construction is a combination of initial A movement and the subsequent A'-movement into the surface position; A-movement is not subject to reconstruction. [2)]

2.1. Weak Crossover Effects

The following examples of scrambled wh-phrases and non-wh-phrases in monoclausal construction in (4-5) are grammatical with no Weak Crossover effect in contrast to the English examples in (6):

(4) ?Enu kyoswu$_i$-lul ku$_i$-uy haksayng-i t_i chotayhayss-ni?
which professor-ACC he-POSS student-NOM invited-QM
*'Which professor$_i$ did his$_i$ student invite?'

(5) ?Motun kyoswu$_i$-lul ku$_i$-uy haksayng-i t_i chotayhayssta.
every professor-ACC he-POSS student-NOM invited
*'Every professor$_i$, his$_i$ student invited.'

(6) a. *Which professor$_i$ did his$_i$ student invite?
b. *Every professor$_i$, his$_i$ student invited'

When it comes to scrambling in biclausal construction, scrambled wh-phrases and non-wh-phrases below in (7-8) exhibit variation with respect to Weak Crossover effects, depending on whether the NP with *ku* 'he' construed as a bound variable is a matrix subject or an

2) Reconstruction is here understood as referring to a phenomenon where a fronted expression at S structure behaves as though occupying a position lower than the surface position in terms of interpretation (see Van Riemsdijk & Williams 1986, Lebeaux 1988, 1990, and Chomsky 1995 among others for various approaches to the phenomenon).

embedded subject, thus contrasting with English examples below in (9-10), which more or less exhibit the same degree of acceptability. [3]

(7) a.*Enu kyoswu$_i$-lul ku$_i$-uy haksayng-i [$_{CP}$ne-ka
which professor-ACC he-POSS student-NOM you-NOM
t$_i$ chotayhayssta-ko] sayngkakha-ni?
invited-COMP think-QM
*'Which professor$_i$ does his$_i$ student think you invited?'

b.?Enu kyoswu$_i$-lul ne-nun [$_{CP}$ku$_i$-uy haksayng-i
which professor-ACC you-TOP he-POSS student-NOM
t$_i$ chotayhayssta-ko] sayngkakha-ni?
invited-COMP think-QM
*'Which professor$_i$ do you think his$_i$ student invited?'

(8) a.*Motun kyoswu$_i$-lul ku$_i$-uy haksayng-i [$_{CP}$nay-ka
every professor-ACC he-POSS student-NOM I-NOM
t$_i$ chotayhayssta-ko] sayngkakhanta.
invited-COMP think
*'Every professor$_i$, his$_i$ student thinks that I invited.'

b.?Motun kyoswu$_i$-lul na-nun [$_{CP}$ku$_i$-uy haksayng-i
every professor-ACC I-TOP he-POSS student-NOM
t$_i$ chotayhayssta-ko] sayngkakhanta.
invited-COMP think
*'Every professor$_i$, I think his$_i$ student invited.'

(9) a.*Which professor$_i$ does his$_i$ student think you invited?
b.*Which professor$_i$ do you think his$_i$ student invited?

(10) a.*Every professor$_i$, his$_i$ student thinks that I invited.
b.*Every professor$_i$, I think that his$_i$ student invited.

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3) It is claimed by Choi (2002) that *ku* 'he' can have bound variable reading especially when the antecedent is a definite QP type or a *which* NP type. Also see the discussion of the bound variable reading of *ku* 'he' in the literature in Kang (1988), and Suh (1990).

Given that Weak Crossover is a standard test for A'-movement (see Mahajan 1990, among others), the grammaticality of (4-5), in contrast to English examples in (6), suggests that scrambling in monoclausal construction is A-movement, thus immune to Weak Crossover effects. When it comes to scrambling in biclausal construction in (7-8), the grammaticality of (7b-8b), in contrast to English examples in (9b-10b), suggests that the initial movement crossing the embedded subject NP with *ku* 'he' to the left periphery of the embedded clause is A-movement, immune to Weak Crossover effects. Meanwhile the ungrammaticality of (7a-8a) suggests that the subsequent movement from the embedded clause into the surface position crossing the matrix subject NP with *ku* 'he' is A'-movement, hence subject to Weak Crossover effects. Now one can come up with the following generalization from the Korean paradigm above in (4-5) and (7-8):

(11) **Generalization I**: Scrambling in monoclausal constructions is A-movement whereas scrambling in biclausal constructions is a combination of initial A-movement to the left periphery of the embedded clause and the subsequent A'-movement to the surface position.

2. 2. Binding Condition C

Next, consider the following examples of scrambling in monoclausal construction regarding Binding Condition C in (12-13) (Chomsky 1981 among others):

(12) ?[John$_i$-uy enu sacin-ul]$_j$ ku$_i$-ka ceil t$_j$ sileha-ni?
J-POSS which picture-ACC he-NOM most dislike-QM
*'Which picture of John$_i$ does he$_i$ dislike most?'

(13)?[John$_i$-uy elin sicel sacin-ul]$_j$ ku$_i$-nun t$_j$ ceil silehanta.
J-POSS childhood picture-ACC he-TOP most dislike
?*'John$_i$'s childhood picture, he$_i$ dislikes most.'

Throughout, I will avoid a wh-phrase containing an adjunct, to control the potential intervening factor of adjunct reconstruction as noted in Van Riemsdijk and Williams (1981), and Lebeaux (1988, 1990), among others.

The examples above in (12-13) involving scrambling of wh-phrases and non-wh-phrases containing an R-expression in monoclausal constructions are grammatical, with *ku* 'he' taking *John* as its antecedent.[4] But when it comes to scrambling in biclausal construction regarding Binding Condition C, scrambled wh-phrases with an R-expression show variation regarding Binding Condition C effect, depending on whether *ku* 'he' taking the R-expression as its antecedent is a matrix or an embedded subject as shown below in (14).

(14) a.?*[John$_i$-uy enu sacin-ul]$_j$ ku$_i$-nun [$_{CP}$ne-ka t$_j$
J-POSS which picture-ACC he-TOP you-NOM
ceil silehanta-ko] sayngkakha-ni?
most dislike-COMP think-QM
*'Which picture of John$_i$ does he$_i$ think you dislike most?'

b. ?[John$_i$-uy enu sacin-ul]$_j$ ne-nun [$_{CP}$ku$_i$-ka t$_j$
J-POSS which picture-ACC you-TOP he-NOM
ceil silehanta-ko] sayngkakha-ni?
most dislike-COMP think-QM
*'Which picture of John$_i$ do you think he$_i$ dislikes most?'

The contrasting grammaticality in (14) thus strongly suggests that Binding Condition C is a constraint that should apply at LF (see Chomsky 1995, Fox 2000, and Sportiche 2001, among many others) with the wh-phrase exhibiting reconstruction effect to the left periphery of

4) The example in (13) is more or less the same with the following example in terms of acceptability:

John$_i$-i ku$_i$-uy elin sicel sacin-ul ceil silehanta.
J-NOM he-POSS childhood picture-ACC most dislike
'John$_i$ dislikes his$_i$ childhood picture most.'

the embedded clause, that is, reconstruction effect in the intermediate trace. Given that Binding Condition C applies at LF, then the grammaticality of the examples in (12-13) indicates that scrambled expressions, either wh-phrase or non-wh-phrase, do not show reconstruction effect in monoclausal construction.

Interestingly scrambled non-wh-phrases containing an R-expression in biclausal construction, unlike wh-phrases in (14), do not show variation regarding Binding Condition C effect as shown below in (15).

(15) a.?[John$_i$-uy elin sicel sacin-ul]$_j$ na-nun [$_{CP}$ku$_i$-ka t$_j$ ceil
J-POSS childhood picture-ACC I-TOP he-NOM most
silehanta-ko] sayngkakhanta.
dislike-COMP think
?*'John$_i$'s childhood picture, I think he$_i$ dislikes most.'
b.?[John$_i$-uy elin sicel sacin-ul]$_j$ ku$_i$-nun [$_{CP}$nay-ka t$_j$ ceil
J-POSS childhood picture-ACC he-TOP I-NOM most
silehanta-ko] sayngkakhanta.
dislike-COMP think
?*'John$_i$'s childhood picture, he$_i$ thinks I dislike most.'

The examples regarding Binding Condition C in biclausal construction in (14) and (15) thus reveal an interesting divergence between wh-phrases and non-wh-phrases in view of the fact that the former exhibit reconstruction effect to the left periphery of the embedded clause, while the latter do not show the effect. Surprisingly, this difference between the two types of expressions in scrambling in biclausal construction as in (14) and (15) did not receive a due amount of attention yet in the literature. Now, one may come up with the following generalization based on the data regarding Binding Condition C in (12-15):

(16) **Generalization II**: Scrambled expressions, either wh-phrases or non-wh-phrases do not show reconstruction effects in monoclausal construction, while in biclausal construction wh-phrases show

reconstruction effects to the left periphery of the embedded clause in contrast to non-wh-phrases which do not show the reconstruction effects.

What generalization can we make about the correlation between reconstruction and movement typology in scrambling? Generalization II in (16), in tandem with generalization I in (11), leads to the conclusion that A-movement is not subject to reconstruction. The fact on reconstruction as observed above thus renders support to the independent claims by Chomsky (1995) and Lasnik (1999) that A-movement is not subject to reconstruction in contrast to May (1985) and Fox (2000), who claim that A-movement as well as A'-movement is subject to reconstruction. Chomsky's claim is based on the example below in (17) among others that shows Binding Condition B violation.

(17) *John$_i$ expected him$_i$ to seem to me [t_i to be intelligent]
Chomsky (1995: 326)

Under the interpretation as indicated, (17) can only be construed as Binding Condition B violation, though under reconstruction the violation should be obviated with *him* interpreted in the base position.

Back to Korean, I will assume that scrambled expressions in monoclausal construction move to IP adjoined position, while those in biclausal construction move to the surface position of Spec of matrix CP via IP adjunction to the embedded clause, following the standard assumption in the literature that IP adjoined position is A-position and Spec of CP is A'-position.[5] Accordingly, in our system, the S structure representation for monoclausal construction as in (12) will be the one below in (18), whereas the S structure for biclausal constructions as in (14a) and (14b) will be the following in (19a) and (19b) respectively:

5) It is quite a standard assumption that IP adjoined position serves as A-position in Korean type languages (see Kuroda 1988 and Saito 1992 among others).

(18) [$_{IP}$[$_{NP}$John$_i$-uy enu sacin-ul]$_j$ [$_{IP}$ku$_i$-ka t$_j$ ceil sileha-ni]]
J-POSS which picture-ACC he-NOM most dislike-QM

(19) a.[$_{CP}$[$_{NP}$John$_i$-uy enu sacin-ul]$_j$ [$_{IP}$ku$_i$-nun [$_{CP}$[$_{IP}$ t$_j$
J-POSS which picture-ACC he-TOP
[$_{IP}$ ne-ka t$_j$ ceil silehanta-ko]]] sayngkakha-ni]]
you-NOM most dislike-COMP think-QM
b.[$_{CP}$[$_{NP}$John$_i$-uy enu sacin-ul]$_j$ [$_{IP}$ne-nun [$_{CP}$[$_{IP}$ t$_j$
J-POSS which picture-ACC you-TOP
[$_{IP}$ ku$_i$-ka t$_j$ ceil silehanta-ko]]] sayngkakha-ni]]
he-NOM most dislike-COMP think-QM

Now, let us turn to the important question of why wh-phrases in biclausal construction as in (14) exhibit reconstruction effect to the left periphery of the embedded clause in contrast to non-wh-phrases in biclausal construction as in (15) that do not show the effect. For this, I crucially suggest that the reconstruction effects of the scrambled wh-phrases containing the R-expression in biclausal construction to the left periphery of the embedded clause has to do with scope taking strategy of wh-phrases in Korean. As shown below in (20), the scope of a wh-word construed as a wh-phrase is marked by the question morpheme (QM, henceforth), in contrast to English counterpart in (21) whose scope is marked by the surface position it occupies.

(20) a. Ne-nun [$_{CP}$John-i nwukwu-lul coahanta-ko] sayngkakha-ni?
you-TOP J-NOM who-ACC like-COMP think-QM
'Who do you think John likes?'
b. Na-nun [$_{CP}$John-i nwukwu-lul coahanun-ci] anta.
I-TOP J-NOM who-ACC like-QM know
'I know who John likes.'

(21) Who do you think John likes?

The sentence in (20a) is construed as a matrix wh-question only, with

the matrix QM marking the scope of the wh-word construed as a wh-phrase, whereas the sentence in (20b) is construed as an embedded wh-question only, with the embedded QM marking the scope of the wh-word construed as a wh-phrase. Given the scope of a wh-word construed as a wh-phrase as marked by the QM as shown above in (20), one may thus suggest that wh-phrases are indefinites whose scope is marked by the QM via unselective binding in the sense of Heim (1982), a procedure which I suggest takes place at LF, given the following example where the wh-phrase is construed as having the embedded scope only, being bound by the QM after LF reconstruction:

(22) Nwuku-lul [$_{CP}$na-nun John-i mannassnun-ci] anta.
who-ACC I-TOP J-NOM met-QM know
'I know who John met.'

In fact, Choi (2002) actually makes the claim that so called wh-words other than *way* 'why' in Korean are indefinites, based on adverbs of quantification constructions as in (23-24), among others.

(23) a.[$_{CP}$LA-eyse enu chinkwu$_i$-ka o-myen] (pro$_i$) nul
LA-from which friend-NOM come-if always
wuli-lul pangmwunhanta.
us-ACC visit
'For every x, x a friend from LA, if x comes, x visits us.'
b.[$_{CP}$Nwu$_i$-ka o-myen] (pro$_i$) nul wuli-lul pangmwunhanta.
who-NOM come-if always us-ACC visit
'For every x, x an individual, if x comes, x visits us.'
c.[$_{CP}$John$_i$-i ency o-myen] (pro$_i$) nul wuli-lul pangmwunhanta.
J-NOM when come-if always us-ACC visit
'For every x, x time, if John comes at x, he visits us (at x).'
d.[$_{CP}$Nay-ka ettehkey John-eytayhay malha-myen]
I-NOM how J-about talk-if
Mary-nun nul hwalul naykonhanta.
M-TOP always get angry

'For every x, x manner, if I talk about John in x, Mary gets angry (with x).'

(24) *[$_{CP}$John$_i$-i way o-myen] (pro$_i$) nul wuli-lul pangmwunhanta.
J-NOM why come-if always us-ACC visit
'For every x, x reason, if John comes for x, he visits us (for x).'
(Choi 2002: 36-37)

As shown by the informal logical notations above in (23-24), wh-words, with the exception of *way* 'why', show quantificational variability and scoping out of a syntactic island, namely, the adjunct island, suggesting that they are indefinites, given these two as most salient properties of an indefinite as claimed by Heim (1982) (see Nishigauchi 1990 for Japanese).

Now, back to the examples in (14), given the interpretive mechanism of unselective binding of the indefinite wh-phrase by the QM, scrambled indefinite wh-phrase including the R-expression in Spec of matrix CP should obligatorily reconstruct to the left periphery of the embedded clause of IP adjoined position, where it can be bound by the QM in the head of matrix CP at LF to be properly interpreted as a wh-phrase as shown in (25), assuming c-command in the sense of Reinhart (1976: 32) (with t_i indicating the base position of the indefinite wh-phrase). 6) 7) 8)

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6) The trace of the scrambled indefinite wh-phrase in Spec of matrix CP in (25) in biclausal construction can be deleted at LF, since scrambled indefinite wh-phrase has nothing to do with wh-scope marking. Also it should be noted that the scope of the indefinite wh-phrase in (25) remains the same even after reconstruction, with the QM in the matrix clause marking its scope (cf. Saito 1989, 1992).

7) The definition of c-command by Reinhart (1976:32) is the following:

Node A c(constituent)-commands node B if neither A nor B dominates the other and the first branching node which dominates A dominates B.

8) Please note that scrambled wh-phrases in monoclausal construction as in (12) can be bound at the surface position by the QM in the head of CP at LF as shown below.

(25) [$_{C'}$QM$_i$ [$_{IP}$NP-TOP [$_{I'}$[$_{VP}$ V [$_{CP}$[$_{IP}$ indefinite wh-phrase$_i$ [$_{IP}$NP-NOM [$_{VP}$ V t_i]]]]]]]]]

Hence reconstruction of the indefinite wh-phrase including the R-expression to the left periphery of the embedded clause in (14a) leads to Binding Condition C violation in contrast to (14b). The present claim associating the obligatory reconstruction of scrambled indefinite wh-phrases to the left periphery of the embedded clause in biclausal construction with the interpretive mechanism of the indefinite wh-phrases can be supported by the example below in (26), where *way* 'why' does not have embedded clause construal, a reading possible if it reconstructs to the left periphery of the embedded clause as in (27):

(26) [$_{CP}$Way [$_{IP}$ne-nun [$_{CP}$John-i hwanassta-ko] sayngkakha-ni]]]
why you-TOP J-NOM got angry-COMP think-QM
'What is the reason x such that for x you think that John got angry?'
#'What is the reason x such that you think that John got angry for x?'

(27) Ne-nun [$_{CP}$way John-i hwanassta-ko] sayngkakha-ni?
you-TOP why J-NOM got angry-COMP think-QM
'What is the reason x such that you think John got angry for x?'

Since *way* 'why' in Spec of matrix CP in (26) is not indefinite, it checks its wh-feature via standard spec head agreement with the QM at the surface position, hence with no reconstruction. The generalization II in (16) regarding obligatory reconstruction effects of scrambled wh-phrases in biclausal construction thus should be understood

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[$_{C'}$ QM$_i$ [$_{IP}$ indefinite wh-phrase$_i$ [$_{IP}$NP-NOM [$_{I'}$ [$_{VP}$ V t_i]]]]]

Scrambled expressions in monoclausal construction are IP adjoined and do not reconstruct in the present system. Since the indefinite wh-phrase is adjoined to IP, the QM in the head of CP at LF can bind it, yielding the interpretation as wh-phrase.

hereafter as referring to the indefinite wh-phrases only.

Now turning to the lack of reconstruction effect of scrambled non-wh-phrases in biclausal construction involving Binding Condition C as in (15), it is now quite well-expected, since unlike wh-phrases, non-wh-phrases do not have to reconstruct for proper interpretation as wh-phrases.

The picture we thus far came up with regarding movement typology and reconstruction as based on Weak Crossover and Binding Condition C is the following: Scrambling in monoclausal construction in Korean is A-movement, whereas the same operation in biclausal construction is initial A-movement to the left periphery of the embedded clause followed by the subsequent A'-movement to the surface position and that A-movement does not reconstruct. When it comes to scrambling in biclausal construction it was shown that wh-phrases show reconstruction effects from the surface position to the left periphery of the embedded clause, while non-wh-phrases do not. The asymmetry of reconstruction between wh-phrases and non-wh-phrases was attributed to the interpretive mechanism of unselective binding of wh-phrases in Korean.[9]

Now, the following English examples with wh-phrases containing an R-expression as in (28-29) that apparently exhibit reconstruction effects to the base position in both monoclausal and biclausal constructions in contrast to Korean counterparts as in (12) and (14) is quite well expected.

(28) *Whose characterization of the typical male viewer$_i$ does he$_i$ resent?
(Sportiche 2001: 13)

(29) a.*Whose characterization of the typical male viewer$_i$ do you think he$_i$ resents?

9) The present observation is compatible with the original observation as made by Beck and Kim (1997: 361), based on QP and wh-scope interaction in Korean, according to which scrambling in monoclausal construction is not subject to reconstruction.

b.*Whose examination of a good student$_i$ do you think he$_i$ fears?
(Sportiche 2001: 17)

In English, wh-phrase in monoclausal construction in (28) undergoes A′-movement to the surface position and the same expression in biclausal construction in (29) undergoes successive A′-movement to the surface position as standardly claimed in the literature and further indicated by the examples in (6) and (9) involving Weak Crossover, hence accounting for the base reconstruction effects of the head noun of the wh-phrase including the R-expression, given that A′-movement is subject to reconstruction. [10]

3. More data and further speculations

The present analysis, diverges from the past analysis of scrambling as in Saito (1992), who claims that scrambling in Japanese, a language akin to Korean, is to IP adjoined position at S structure, which is nonoperator and non A-position, a la Webelhuth (1989: 413). According to Saito (1992), scrambling can be freely undone at LF to the base position in biclausal construction, or the IP adjoined position is reanalyzed into an A′-position, whereas in monoclasual construction, the same position can undergo LF reanalysis into A-position.

However, his analysis, when applied to Korean, which is typologically akin to Japanese, cannot account for Weak Crossover effects involving long distance movement in biclausal constructions in (7a-8a), since according to him. nonoperator non A movement should be immune to the effects. Moreover, his proposal cannot account for why scrambled wh-phrases in biclausal construction in Korean in contrast to non-wh-phrases, exhibit reconstruction effects to the left periphery of

10) Hence, there is also a nontrivial difference between Korean and English regarding the part of wh-phrases subject to reconstruction. In Korean, indefinite *wh* and the head noun including its complement is subject to reconstruction, whereas in English the head noun including its complement is subject to reconstruction.

the embedded clause as in (14). According to him, wh-phrases can stay at the surface when the position is reanalyzed as an operator position; otherwise they should show reconstruction effects to the base position but not to the left periphery of the embedded clause.

When it comes to monoclausal scrambling, the ungrammaticality of the example involving Binding Condition C below in (30a) also poses a nontrivial problem to Saito's analysis.

(30) a.*Ku$_i$-lul John$_i$-uy kyoswu-ka t_i silehanta.
he-ACC J-POSS professor-NOM dislike
'Him$_i$ John$_i$'s professor dislikes.'
b. John$_i$-uy kyoswu-ka ku$_i$-lul silehanta.
J-POSS professor-NOM he-ACC dislike
'John$_i$'s professor dislikes him$_i$.'

To account for the ungrammaticality of (30a), he has to say that LF reanalysis of IP adjoined position into A-position is obligatory for (30a), although LF reanalysis is an optional operation, according to him.

The present analysis can account for the ungrammaticality of the example in (30a) in a straightforward manner. Since IP adjoined position is always an A-position, the example is ruled out as Binding Condition C violation at LF, with *ku* 'he' ending up with binding its antecedent *John*. I would like to close the section with the example below in (3).[11]

(31) ?Selo$_i$-lul [John-kwa Mary]$_i$-ka t_i silehanta.
each other-ACC [John and Mary]-NOM dislike
'Each other$_i$ John and Mary$_i$ dislike.'

Examples in Japanese similar to the one in (31) involving the reciprocal were used in the literature (Saito 1989, 1992 for Japanese) as an

11) I will not include so called reflexive anaphors in the present paper, since they are claimed to admit logophoric construal, which may potentially interfere with our understanding of reconstruction effects (see Clements 1975, Reinhart & Reuland 1993, among others).

argument supporting reconstruction of the reciprocal. The reasoning behind this is that reciprocal is an anaphor, which should be bound by the antecedent. Otherwise Binding Condition C violation is unavoidable due to the binding of the R-expression by the reciprocal. Assuming *selo* as an anaphor a la Yang (1984), one may indeed suggest that the example above in (31) hence suggests that *selo* reconstructs to the base position, contradicting the present generalization that monoclausal scrambling, being A-movement, is not subject to reconstruction.[12)]

It should be noted, however, that *selo* cannot be treated as an anaphor, especially since it can enter long distance dependency, take split antecedent and does not need to be c-commanded by the antecedent, as pointed out by Chung and Park (1998). Hence, I will essentially adopt the structure below in (32) for *selo* as originally proposed by Hoji (1997ab) for Japanese counterpart *otagai,* according to whom long distance dependency, split antecedent and the lack of requirement for the c-commanding antecedent of *otagai* is attributed to the existence of *pro.*

(32) [$_{NP}$ *pro* [$_{N}$ *selo*]]

Next, turning to the interpretation of *selo*, like *each other* in (34) in English, I observe that in a local domain in terms of binding theory as in (33). *selo* can only have a cross reading of 'each of John and Mary likes the other' which is an instance of bound variable reading according to Heim, Lasnik and May (1991) and Hoji (1997ab). [13)] [14)]

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12) I will translate *selo* as 'each other' throughout this paper only for convenience sake.

13) I will assume the following definition of governing category throughout, otherwise specified: α is the governing category for β if and only if α is the minimal category containing β and a governor of β, where α = NP or S.

(A) An anaphor is bound in its governing category.

(B) A pronominal is free in its governing category.

(C) An R-expression is free.

Chomsky (1981:188)

14) If the present intuition is correct, *selo* seems to behave differently from

(33) [John-kwa Mary]$_i$-ka selo$_i$-lul coahanta.
[John and Mary]-NOM each other-ACC like
'[John and Mary]$_i$ like each other$_i$.'

(34) [John and Mary]$_i$ love each other$_i$.

According to Heim, Lasnik and May (1991), the structure of reciprocal *each other* in English as in (34) is rather complex, consisting of the distributor *each* and the reciprocator *other* with the former undergoing LF movement, based on the proposal by Bennett (1974).They thus suggest that syntactically the example in (34) has the following structural representation and indexing at LF for cross reading, which is the only reading available in (34):

(35) [[John and Mary]$_1$ each$_2$]$_2$ love [e$_2$ other]$_3$

Intuitively, the structural representation in (35) is intended to express the reading of 'any two distinct individuals of *John* and *Mary* are such that the first loves the second.' Abstracting away from the semantics of the reciprocal by Heim, Lasnik and May (1991), I suggest that the example above in (33) can also be analyzed in the same way by giving the following structural representation in (36) for the cross reading, D roughly corresponding to distributor *each* in English, and *selo* [*e other*]:

Japanese *otagai* in that the former can have cross reading only, in a local domain whereas the latter, according to Hoji (1997ab, 2003) can have all of the cross, parallel and group readings in local as well as nonlocal domains. By parallel reading and group reading he means the reading below in *b* and *c*, respectively.

[John-kwa Bill]$_i$-i [$_{CP}$Mary-ka selo$_i$-lul cohanta-ko] sayngkakhanta.
[John and Bill]-NOM Mary-NOM each other-ACC like-COMP think

a.'John thinks Mary likes Bill, and Bill thinks Mary likes John.'

b.'John$_i$ thinks Mary likes him$_i$ and Bill$_j$ thinks Mary likes him$_j$.'

c '[John and Bill]$_i$ think that Mary likes them$_i$.'

(36) $[_S[NP_i \quad D_k]_k \qquad V \qquad [pro_k \quad [selo]]_j]$

As one can notice, the only difference between the English representation in (35) for (34) and the Korean one in (36) for (33) is that the latter has *pro* instead of the trace of *each* in the former, with the distributor binding the pronominal *pro* in (36).[15] Hence cross reading of *selo* in (36) is an instance of pronominal binding.

Now with the structure of *selo* as [*pro selo*] in mind, let us go back to (31), which has cross reading only, whose representation will be thus the one below in (37) with the irrelevant details suppressed.

(37) $[[pro_k \quad [selo]]_j$-ACC $\qquad [NP_i \quad D_k]_k$-NOM $\qquad$ V

If A-movement is not subject to reconstruction as shown by Korean and English examples involving Binding Condition C and Binding Condition B, respectively, one is led to conclude that in (37) pronominal binding, which is responsible for cross reading, should be a derivational constraint, namely, a constraint that applies either at D structure or at S structure such that it can be satisfied at D structure, in contrast to Fox (2000) and Sportiche (2001), among others who claim that it is an LF constraint. It is questionable whether pronominal binding should be an LF constraint given that LF movement does not create new binding relation as shown below in (38) (Lasnik 1999: 197):

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15) I assume that [*pro selo*] is a pronominal in terms of the binding theory. This accounts for why *selo* can have cross reading only in local domain as in (33) but not group reading of 'John and Mary like themselves' and parallel reading of 'John likes himself, and Mary likes herself' as represented in (ia) and (ib) respectively, whereas in nonlocal domain as in (ii) it can have all of the cross, group and parallel reading in (iia), (iib) and (iic), respectively.

(i) a. $[_S NP_i \qquad V \quad [pro_i \quad [selo]]_i]$

b. $[_S NP_i \quad D_k]_k \quad V \quad [pro_k \quad [selo]]_k]$

(ii) a. $[NP_i \quad D_k]_k \quad V \quad [_{CP} \; NP \quad V \quad [pro_k \quad [selo]]_j]$

b. $NP_i \qquad V \quad [_{CP} \; NP \quad V \quad [pro_i \quad [selo]]_i]$

c. $[NP_i \quad D_k]_k \quad V \quad [_{CP} \; NP \quad V \quad [pro_k \; [selo]]_k]$

(38) a.*The DA proved there to have been two men$_i$ at the scene of the crime during each other$_i$'s trial.
b. The DA proved two men$_i$ to have been at the scene of the crime during each other$_i$'s trial.

Once pronominal binding is taken as a derivational constraint, the pronominal binding in (37) involving scrambling of *selo* construction is compatible with the conclusion that A-movement is not subject to reconstruction. Also note that Binding Condition C is orthogonal given the indexing in (37) although *selo* does not reconstruct.

4. Conclusion

To summarize, I conclude that scrambling in monoclausal construction is A-movement and that the same operation in biclausal construction is a combination of initial A-movement and subsequent A′ movement, which in a sense supports Mahajan's proposal for scrambling in terms of A and A′ typology. I also concluded that A-movement is not subject to reconstruction. The present proposals as based on scrambling in Korean thus has an important theoretical implication of supporting the independent proposals by Chomsky (1995) and Lasnik (1999) that A-movement does not reconstruct, and suggesting that pronominal binding is a derivational constraint (cf. Sportiche 2001).

References

Beck, S. & S-S Kim. (1997). On wh-and operator scope in Korean. *Journal of East Asian Linguistics 6*, 339-384.

Bennett, M. (1974). *Some Extensions of a Montague Fragment of English*, Unpublished doctoral dissertation. University of California, Los Angeles. CA.

Choi,Y.-S. (2002). *Asymmetry of Scope Taking in Wh-Questions*. Unpublished doctoral dissertation. University of Southern California. Los

Angeles, CA.

Chomsky, N. (1976). Conditions on Rules of Grammar. *Essays on Form and Interpretation*. New York: North-Holland.

Chomsky, N. (1977). On wh-movement. In P. W. Culicover, T. Wasow, & A. Akmajian (Eds.), *Formal Syntax* (pp. 71-132). New York: Academic Press.

Chomsky, N. & H. Lasnik. (1977). Filters and Control. *Linguistic Inquiry* 8(3), 425-504.

Chomsky, N. (1981). *Lectures on Government and Binding*. Dordrecht: Foris.

Chomsky, N. (1986). *Barriers*. Cambridge, Mass.: MIT Press.

Chomsky, N. (1995). *The Minimalist Program*. Cambridge, Mass.: MIT Press.

Chung D.-H. & H.-K. Park. (1998). On *Selo*. In *Proceedings of the 7th Japanese/Korean Linguistics*. CSLI, Stanford.

Clements, G. (1975). The logophoric pronoun in Ewe: its role in discourse. *Journal of West African Languages* 10, 141-177.

Fox, D. (2000). *Economy and Semantic Interpretation*. Cambridge, Mass.: MIT Press.

Heim, I. (1982). *The Semantics of definite and Indefinite Noun Phrases*. Unpublished doctoral dissertation. University of Massachusetts. Amherst, MA.

Heim, I, & H. Lasnik. & R. May. (1991). Reciprocity and Plurality. *Linguistic Inquiry 22(1)*, 63-101.

Higginbotham, J. (1980). Pronouns and Bound Variables. *Linguistic Inquiry 11(4)*, 679-708.

Hoji, H. (1985). *Logical Form Constraints and Configurational Structure in Japanese*. Unpublished doctoral dissertation. University of Washington. Seattle, WA.

Kang, M.-Y. (1988). *Topics in Korean Syntax: Phrase Structure, Variable and Movement*. Unpublished doctoral dissertation. MIT. Boston, MA.

Koopman, H. & D. Sportiche. (1982). Variables and the Bijection Principle. *Linguistic Review 2(2)*, 139-160.

Lasnik, H. (1999). Chains of Arguments. In S. D. Epstein & N. Hornstein (Eds.), *Working Minimalism* (pp, 189-215). Cambridge, Mass.: MIT Press.

Lebeaux, D. (1988). *Language Acquisition and the form of the grammar*. Unpublished doctoral dissertation. University of Massachusetts. Amherst. MA.

Lebeaux. D. (1990). The grammatical nature of the acquisition sequence: Adjoin-and the formation of relative clauses. In J. Villiers & L. Frazier (Eds.), *Language processing and language acquisition* (pp. 13-82). Dordrecht: Kluwer.

Mahajan, A. (1990). *The A/A' Distinction and Movement Theory*. Unpublished doctoral dissertation. MIT. Boston, MA.

Nishigauchi, T. (1990). *Quantification in the Theory of Grammar*. Dordrecht: Kluwer Academic Publishers.

May, R. (1985). *Logical Form*. Cambridge, Massachusetts, MIT Press.

Postal, P. (1971). *Cross-over Phenomena*. New York: Holt, Reinhart and Winston.

Riemsdijk, H. & E. Williams. (1986). *Introduction to the theory of grammar*. Cambridge, Mass.: MIT Press.

Reinhart, T. (1976). *The Syntactic Domain of Anaphora*. Unpublished doctoral dissertation. MIT. Boston, MA.

Reinhart, T. & E. Reuland. (1993). Reflexivity. *Linguistic Inquiry* 24(4), 657-720.

Riemsdijk, H. & E. Williams. (1981). NP Structure. *The Linguistic Review 1(2)*, 171-217.

Ross, J. (1967). *Constraints on variables in Syntax*. Unpublished doctoral dissertation, MIT. Boston, MA.

Safir, K. (1984). Multiple Variable Binding. *Linguistic Inquiry* 15(4), 603-638.

Saito, M. (1989). Scrambling as Semantically Vacuous A'-Movement. In M. Baltin & A. Kroch (Eds.), *Alternative Conceptions of Phrase Structure* (pp, 182-200). Chicago and London: The University of Chicago Press.

Saito, M. (1992). Long Distance Scrambling in Japanese. *Journal of East*

Asian Linguistics 1, 69-118.
Sportiche. D. (2001). Reconstruction, Binding and Scope. Unpublished manuscript.
Suh, J.-H. (1990). *Scope Phenomena and Aspects of Korean Syntax.* Unpublished doctoral dissertation. University of Southern California. Los Angeles, CA.
Wasow, T. (1972). *Anaphoric Relations in English.* Unpublished doctoral dissertation. MIT. Boston, MA.
Webelhuth, G. (1989). *Syntactic Saturation Phenomena and the Modern Germanic Languages.* Unpublished doctoral dissertation, University of Massachusetts. Amherst, MA.
Yang, D.-W. (1984). The Extended Binding Theory of Anaphors. *Theoretical Linguistics Research 1*, 195-218.

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