

Scrambling Across Topic Phrase*

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Cho, Jaihyoung and Kim, Ockhwan. 2002. Scrambling across Topic Phrases. *The Linguistic Association of Korea Journal*, 10(1), 117-134. This paper accounts for a contrast between IP-adjoined scrambling and TopP-adjoined scrambling. We propose that the so-called scrambled phrase is base-generated in its non- Θ IP- or TopP- adjoined position and that while it must be obligatorily lowered into its Θ position to check its Θ role feature at LF in case of scrambling across a topic, it stays there in case of clause-internal scrambling. The Θ role feature is proposed to be regarded as one of formal features which drive movement operation at LF. This proposal is in accordance with the Last Resort principle in that it dispenses with the burden of optionality in movement.

Key words: θ -role feature, lowering, last resort

1. Introduction

The purpose of this paper is to uncover a contrast between two types of scrambling, scrambling across a subject and scrambling across a topic. Consider the following:

- (1) a. John_i-ul caki_i-uy chinku-ka t_i ttaylyessta.
-Acc self-Gen friend-Nom hit
'John_i, self_i's friend hit.'
- b. ?*John_i-ul caki_i-uy chinku-nun t_i ttaylyessta.
-Acc self-Gen teacher-Top hit
'As for [self_i's friend]_j, John_i, he_j hit.'

* We are grateful to two anonymous reviewers for their valuable and inspiring comments. Needless to say, all shortcomings are ours.

While *John_i-ul* 'John-Acc' in an apparently IP-adjoined position acts as an antecedent of the reflexive *caki* 'self' in (1a), the so-called scrambled phrase *John_i-ul* 'John-Acc' in (1b) does not.¹⁾ The ungrammaticality of (1b) indicates that scrambling across a topic is different from that across a subject. What could be the difference?

Scrambling phenomena have been looked upon as the result of optional syntactic movement operations in the literature. Within the minimalist framework, however, these analyses are not well accommodated under the Last Resort principle, which allows only obligatory movement driven by morphological necessity. Contrary to the standard optional syntactic movement analysis, we propose, developing Boskovic and Takahashi (1998), a base-generation and then LF movement analysis. We argue that the so-called scrambled phrase is base-generated in its surface non- Θ position and that it is lowered into its Θ position at LF to check its Θ role feature in case of scrambling across a topic, it stays there in case of clause internal scrambling. This proposal is in accordance with the Last Resort principle in that it dispenses with the burden of optionality in movement.

Concerning the so-called scrambling to the IP-adjoined position, we draw a distinction between the clause-internal scrambling (CIS, henceforth) and the long-distance scrambling (LDS, henceforth). As for the CIS, we argue that the base-generated phrases stay in the non- Θ IP-adjoined position. Neither syntactic nor LF movement needs to be applied if not required by independent reasons. On the other hand, we claim that the so-called long-distance scrambled phrases are base-generated in the non- Θ IP-adjoined position. They, contrary to the CIS counterpart, must be lowered into the position where their Θ role features could be checked at LF.

1) As an anonymous reviewer points out, (1b) could have an improved status, though marginal, when it has a contrastive focus reading ("Unlike other people, only his friend hit John.").

2. Base-Generation and LF Lowering

2.1. LF Lowering and the Last Resort

Most of the scrambling phenomena have been analyzed as the process of optional syntactic movement operations (Mahajan 1990, Saito 1985, 1992, Fukui 1993, Nemoto 1993, Cho 1994, among others).²⁾ In the standard analysis, the following example (2b) is argued to be derived from (2a) via overt movement operation called scrambling:

- (2) a. Mary-ka [[John-i wancenhi i chayk-ul ta ilkessta]-ko mitessta.
 -Nom -Nom completely this book-Acc finished reading-Comp believed
 'Mary believed that John had finished reading this book completely.'
- b. i chayk-ul_i Mary-ka [[John-i wancenhi
 this book-Acc -Nom -Nom completely
 t_i ta ilkessta]-ko mitessta.
 finished reading-Comp believed
 'This book, Mary believed that John had finished reading
 completely.'

The embedded object *i chayk-ul_i* 'this book-Acc' in (2b) has been claimed to be moved into sentence-initial position, leaving the driving force of the movement unexplained. Within the minimalist framework, however, this analysis is not well accommodated under the Last Resort principle, according to which a movement operation is permitted only if it is done for the satisfaction of morphological necessity. Under the analysis of scrambling as optional syntactic movement, (2b) seems to

2) There are explorations aiming to dispense with the optionality problem in the discussion of scrambling phenomena. Lee (1993), for instance, claims that scrambling is a consequence of Case-driven obligatory movement. She argues that scrambling is best analyzed as A-movement. Miyagawa (1997) proposes that while A-scrambling is driven by the Case checking requirement, A'-scrambling is motivated by something like focus. Whereas those mentioned above are in the line of syntactic movement analysis, Boskovic and Takahashi (1998) look upon scrambling phenomena as obligatory LF movement operation.

violate the Last Resort principle. If the accusative NP in (2a) already has its Case and Θ role features checked in its original position without any movement, what could be the driving force of the scrambling operation in (2b)? The standard optional movement analysis does not provide us with a feasible answer concerning this question.

Adopting Boskovic and Takahashi's (1998) proposal, we argued in Cho and Kim (2000) that the scrambled elements are base-generated in their surface non- Θ IP-adjoined position, the process of which is Merge. They stay in situ (in case of the CIS) or must be lowered into Θ -position (in case of the LDS) at LF in order to check their Θ role features. We assume that Θ role is a kind of formal feature and that it should be checked when a lexical element and its argument merge (Ahn 1999, Hornstein 1996, Lasnik 1999). If the Θ role feature is not checked off, the derivation would crash. It is in accordance with the Last Resort principle of Move- α that the so-called scrambled element should be obligatorily lowered at LF for convergence of a derivation.³⁾

The LF lowering of the scrambled phrases into Θ position after

3) As an empirical evidence of the contrast between the LDS and the CIS, let us consider Boskovic and Takahashi's (1998) example in terms of the binding phenomena:

(i) a. [karera- o_i [Masao-ga [[otagai- no sensei]- ni
 they-ACC -NOM each other-GEN teacher-DAT
 [t_i syookaisita]]]] (koto)
 introduced fact

'Them $_i$ Masao introduced to each other $_i$'s teachers.'

b. *[karera- o_i [Masao-ga [otagai- no sensei]- ni
 they-ACC -NOM each other-GEN teacher-DAT
 [$_{CP}$ [$_{IP}$ Hanako-ga t_i hihansita] to] itta]] (koto)
 -NOM criticized COMP said fact

'Them $_i$ Masao said to each other $_i$'s teachers that Hanako criticized.'

In the current analysis the so-called clause-internally scrambled phrase *karera- o_i* in (ia) stays in its base-generated position, that is, the IP-adjoined position. The verb rises to I at LF and this I-V complex checks the θ -role of *karera- o_i* . Then the θ -licensed object in situ can bind the lower-positioned anaphor *otagai $_i$* . On the other hand, the so-called long-distance scrambled phrase *karera- o_i* in (ib) has to be lowered into the embedded Spec of Agr $_P$ to check off its θ -role. After lowering, *karera- o_i* is no longer in the position which c-commands *otagai $_i$* , leading to a Condition A violation.

base-generation is our crucial methodological assumption in defining the characteristics of the LDS.⁴) But this idea seems to result in the violation of such grammatical principles as the Projection Principle and the Θ -Criterion. These principles state that representations at each syntactic level are projected from the lexicon, in that the Θ -licensing properties of a lexical item must be maintained and satisfied at every level of representation. Both of the traditional levels such as S-structure and D-structure, where the Projection Principle is applied, are eliminated in the minimalist framework. As a result, the Projection Principle and the Θ -Criterion cannot be satisfied before LF.

As Boskovic and Takahashi (1998) point out, all overt lowering and all lowering of operators (or elements that are forced to leave traces by independent principles of the grammar) are independently ruled out. Positing a condition which specifically bans lowering would be vastly redundant and unnecessarily complicate the theory. Consequently, lowering should be allowed to the extent that its result does not violate independently motivated conditions of the grammar.

2.2 CIS vs. LDS

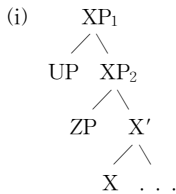
In the current analysis, the scrambled element of the CIS is argued to be base-generated in the IP-adjoined position. Contra Boskovic and Takahashi (1998), we argue that the preposed element of the CIS need not be lowered at LF. If it could have its Θ -role feature checked in situ without LF movement, it naturally is more economical. Then how could the IP-adjoined phrase be Θ -licensed without lowering? The answer lies

4) According to Chomsky (1995), in overt syntax the operation Move F must pied-pipe the whole lexical item that the feature which motivates movement is part of, otherwise we will end up with a 'scattered' lexical item that cannot be pronounced. Since the output of LF is not pronounced, this problem does not arise at LF: only the features, not the whole lexical items, are affected by the operation Move F at this level. If a Θ -role is a formal feature to be checked off at LF, the whole scrambled phrase does not have to be moved in case of the LDS. It seems to be more economical for only the Θ -role feature to be lowered. But our account is based on the pre-minimalist framework.

in the segment theory of adjunction and V-to-I movement (Kuroda 1988, Saito 1992, Tada 1993, Chomsky 1995).^{5) 6)} When a verb moves to I at LF, the I-V complex licenses the Θ -role feature of the IP-adjoined element via the segment theory of adjunction.

The segment theory of adjunction can replace the Condition C type of

5) Let us consider the phrase marker representation in (i), where UP adjoins to XP_2 , forming $[XP_1, XP_2]$:

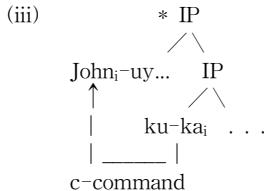


Though made up of a pair of segments, this pair in an adjunction structure in (i) is still a single category. Each element in the pair can be thought of as a segment of the category. What this implies is that XP_1 in (i) has no independent reality with respect to the computational system, but is merely a segment of the two-segment category $[XP_1, XP_2]$. Thus ZP in the Spec position of the seemingly lower segment can c-command the adjoined element UP.

Consider the following example as a relevant illustration concerning the CIS:

- (ii) * $[_{IP} \text{John}_i\text{-uy} \text{ chinkwu-lul} [_{IP} \text{ku}_i\text{-ka} \text{ ttaylyessta}]]$.
 -GEN friend-ACC he-NOM hit
 'John_i's friend, he_i hit.'

The higher IP in (ii) is just a segment of the two-segment category IP and hence the subject $ku_i\text{-ka}$ in the Spec of the lower IP c-commands the object $John_i\text{-uy} \text{ chinkwu-lul}$ in the IP-adjoined position. This leads to a violation of Binding Condition C. (iii) is given as an illustration:



6) Chomsky (1995) assumes that V universally ends up in I by LF. When moved to I, a verb is hypothesized to Θ mark its object in the IP-adjoined position, allowing it to stay there at LF. After V incorporates into I, the projection of I is analyzed as that of V (Boskovic and Takahashi 1998). The Θ -licensing of the direct object is then done in a licit way within the projection of the Θ marker.

reconstruction procedure. In order to see how this works, let us observe the contrast given in (3):

- (3) a. [_{IP} PRO John_i-ul mannan-hwuey] [_{IP} Mary-ka ku_i-lul pinanhayssta]].
 -Acc meeting-after -Nom he-Acc criticized
 'Mary criticized him_i after meeting John_i.'
- b. ?*[[_{IP} PRO John_i-ul mannan-hwuey] [_{IP} ku_i-ka Mary-lul pinanhayssta]].
 -Acc meeting-after he-Nom -Acc criticized
 'After meeting John_i, he_i criticized Mary.'

(3b) should be ruled out by Condition C. Within the standard assumption that scrambling is an overt movement operation, the contrast shown in (3a) and (3b) is accounted for with recourse to the reconstruction procedure. When a scrambled adjunct is reconstructed, unlike (3a), the R-expression *John_i* in (3b) is A-bound by the subject *ku_i-ka*, 'he-Nom', which results in a Condition C violation. Our claim that the adjuncts are base-generated and have to stay there in the IP-adjoined position at LF seems to have no way to rule out (3b) as a violation of Condition C.⁷⁾ But this kind of reconstruction effect is well accommodated under the segment theory of adjunction. The lower IP of the examples in (3) is one segment of two-segment category IP. Thus the subjects *Mary-ka* 'Mary-Nom' and *ku_i-ka* 'he-Nom' in the lower Spec of IP are able to c-command *John_i* in the higher IP-adjoined adjunct, respectively. The result is that (3a) is rendered grammatical but

7) (3b) is also ruled out as a violation of the Binding Principle C through the co-indexed relation between the subject and PRO. Then our dependence on the segment theory of adjunction seems to be redundant, since we can account for the degradedness of (3b) without recourse to the theory. But the following shows that this is not the case:

(i) * [_{IP} [John_i-uy hakkyo]-ka [_{IP} ku_i-ka phyenanhalsu isssta]].
 -Gen school-Nom he-Nom can be comfortable
 'It is John's school in which he can feel relieved.'

The multiple subject construction in (i) supports our account. Since the first subject in (i) must be base-generated in the IP-adjoined position and stay there at LF, our analysis has validity.

(3b) ungrammatical. This line of reasoning helps to maintain the base-generation and no LF lowering hypothesis in case of the CIS.

In case of the LDS, we argue that the base-generated element should obligatorily be moved (or lowered) into the embedded clause, where its Θ -role feature could be checked at LF. Let us consider the following:

- (4) a. [_{IP}Mary-ka [_{CP}[_{IP} John-i [_{AgroP} [_{VP} ce chayk-ul sassta]]] -ko] sayngkakhanta]]
 -Nom -Nom that book-Acc bought -Comp think
 'Mary thinks that John bought that book.'
- b. [_{IP} ce chayk-ul [_{IP}Mary-ka [_{CP}[_{IP}John-i [_{AgroP}[_{VP}sassta]]] -ko] sayngkakhanta]]
 that book-Acc -Nom -Nom bought -Comp think
 'That book, Mary thinks that John bought.'
- (5) ____ [_{IP} Mary-ka [_{CP} [_{IP} John-i [_{AgroP} ce chayk-ul [_{VP} ...]]]]]
 |-----↑
 LF lowering

In our theory, (4b) is not derived from (4a) via scrambling operation but is base-generated in the matrix IP-adjoined position. Since the Θ -role feature of Korean is assumed to be weak, the embedded object *ce chayk-ul* 'that book' can be freely merged before Spell-Out. As the LF representation in (5) shows, the object NP in the matrix IP-adjoined position should be lowered into the Spec of AgroP at LF for the purpose of Θ -role checking by the embedded verb *sassta* 'bought'.^{8) 9)}

3. Scrambling across a Topic

3.1. Base-Generated Topic

8) We follow the assumption that the Case and Θ -role are checked at the configuration of Spec-Head agreement. So, contra Boskovic and Takahashi (1998), we propose that the matrix IP-adjoined object NP lowers into the Spec position of embedded AgroP rather than the VP complement position.

9) For in-depth and detailed motivating discussion of this kind of 'rightward movement,' see Boskovic (1994). And see Beerman et al (1997), for the problems of rightward movement.

Although so-called scrambling across a subject has been discussed widely in the literature, no previous works on scrambling have ever focused on the special nature of scrambling across a topic. It is shown in this section that so-called scrambling across a topic has some different properties from scrambling across a subject. Our base-generation and LF lowering hypotheses make it possible to unveil the contrast between the one and the latter. Assuming Hoji (1985), Saito (1985) and Cho (1994), we argue that a topic is not derived by movement but base-generated in the sentence-initial position. Unlike the case of CIS, the reconstruction effect does not obtain in the topic construction. Consider the following:

- (6) a. [caki_i-uy haksayng]_j-ul ku_i-ka e_j coahanta.
 self-Gen student-Acc he-Nom likes
 ‘[self_i’s student], , he_j likes.’
- b. *[caki_i-uy haksayng]_j-un ku_i-ka e_j coahanta.
 self_i-Gen student-Top he-Nom likes
 ‘As for self_i’s son, he_j likes.’

The CIS in (6a) shows the reconstruction effect and thus the anaphor *caki* ‘self’ is bound by the pronoun *ku* ‘he,’ satisfying Binding Principle A. In the topic construction (6b), however, the anaphoric reconstruction does not obtain. If we assume that the topic in (6b) is not derived by movement but base-generated, we can rule out (6b) with ease. Then which position does a base-generated topic occupy? In our account, adopting Cho (1994), we claim that the topic is base-generated in the Spec position of TopP. The following is an approximate representation of (6b):

- (7) [_{TopP} caki_i-uy haksayng]_j-un [_{CP} [_{IP} ku_i-ka e_j coahanta]]].

Since a CP node intervenes between IP and TopP in (7), the subject

ku_i-ka 'he-NOM' in the Spec position of IP cannot c-command the anaphor *caki_i* 'self' embedded in the Spec position of TopP. This leads to a violation of Condition A.

Another evidence which supports base-generation hypothesis of a topic comes from the presence of the overt resumptive pronoun:

- (8) a. John_i-ul Mary-ka (*ku_i-lul) salanghanta.
 -Acc -Nom he-Acc loves
 'John, Mary loves.'
- b. John_i-un Mary-ka ku_i-lul/e_i salanghanta.
 -Top -Nom he-Acc loves
 'As for John, Mary loves him.'

While the overt resumptive pronoun is allowed in the topic sentence in (8b), it is not in the scrambling construction in (8a). Cho (1994) argues that the contrast between topic and scrambling constructions with regard to the overt resumptive pronoun indicates that while scrambling, as movement, does not allow the overt resumptive pronoun, the topic sentence allows the overt resumptive pronoun or the empty pronoun (the null resumptive pronoun), since the topic can be base-generated.

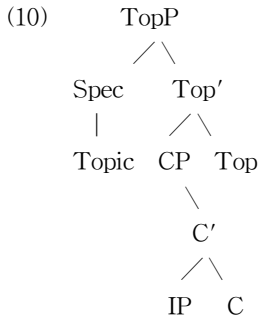
Let us put the story into our own way of account. The object *John-ul* 'John-Acc' in (8a) is base-generated in the IP-adjoined position. Without the intervention of the overt resumptive pronoun *ku-lul* 'he-Acc' within the lower IP segment, the Θ role feature of the so-called scrambled element could be checked without lowering via segment theory and V-to-I raising. When the overt resumptive pronoun is placed in the complement position of V, however, the Θ role feature of the verb would be saturated by the pronoun. Then, the object in the IP-adjoined position cannot have its Case and Θ role feature checked, which renders (8a) ill-formed. On the other hand, the topic is said to be base-generated in the Spec position of TopP. The following is its approximate representation:

(9) [_{TopP} John_i-un [_{CP} [_{IP} Mary-ka ku_i-lul/*e_i* coahanta]]]].

In (8b) the explanation is two-fold. One is that when the resumptive pronoun is placed in the complement position of V, the Θ role requirement of the verb is satisfied. The other is that when the resumptive pronoun is not present, we assume that the gap is occupied by *pro e_i*. The *pro e_i* is also Θ -marked by the verb, which renders (8b) fine.

3.2. Position of Topic

Assuming Cho (1994), we argue that a topic in Korean is base-generated in the Spec position of TopP. For a detailed discussion concerning the position of a topic phrase, see Cho (1994) and literatures cited there. The following is the topic configuration of Korean:



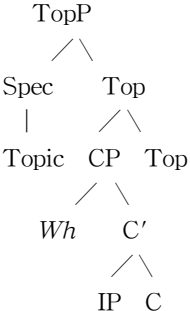
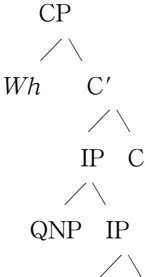
The scope relation between a topic and a *wh*-phrase provides a support for the structure (10). Let us consider the following example, which contains a topic and a *wh*-object:

- (11) ku salam-tul-un mwues-ul sass-ni?
 those person-Pl-Top what-Acc bought-Q
 'As for those people, they bought what?'

The sentence (11) is ambiguous. One interpretation is that the topic takes wider scope than the *wh*-phrase. This reading anticipates a family of answers, such as "John bought a watch, Bob a ring, and Tom a tie." The other interpretation is the group interpretation. This reading anticipates a collective answer, such as "They bought a watch." Let us consider, now, the following example which contains a subject and a *wh*-object:

- (12) ku salam-tul-i mwues-ul sass-ni?
 those person-Pl-Nom what-Acc bought-Q
 'Those people bought what?'

In contrast to (11), (12) is not ambiguous. (12) lacks the reading where the subject takes wider scope than the *wh*-phrase. The only reading available in (12) is the group interpretation. This reading anticipates a collective answer, such as "They bought a watch." The contrast between (11) and (12) suggests that TopP is located higher than CP.¹⁰ The LF structures of (11) and (12) are given as (13a) and (13b), respectively:

- (13) a. 
b. 

Depending on the structure given in (13), let us compare (14a) and (14b):

¹⁰ But there is a disagreement on the contrast reading between (11) and (12). For the detailed discussion in accordance with our proposal, see Kim (1990).

- (14) a. *John_i-un sakwa_j-nun ku_i-ka e_j coahanta.
 -Top apple-Top he-Nom likes
 'As for John, as for the apple, he likes.'
- b. John_i-un sakwa_j-lul ku_i-ka t_j coahanta.
 -Top apple-Acc he-Nom likes
 'As for John, the apple, he likes.'

When both *John* and *sakwa* 'apple' are topicalized, the sentence is bad, as in (14a).¹¹ However, as in (14b), if *sakwa* 'apple' is scrambled instead of being topicalized, the sentence improves a lot. This supports our hypothesis that the topic in Korean is base-generated and, in turn, one position is available for the topic.

3.3. Reconstruction Effects

Like scrambling across a subject, scrambling across a topic exhibits reconstruction effects with regard to Condition C and Condition A. The reconstruction effect with respect to Binding Principle C is observed with scrambling across a topic, as illustrated below:

- (15) a. *ku_i-nun [_{IP} pro_i John_i-uy samchon-ul conkyenghanta].
 he-Top -Gen uncle-Acc respects
 'As for him_i, he_i respects John_i's uncle.'
- b. *[John_i-uy samchon]_j-ul ku_i-nun [_{IP} pro_i t_j conkyenghanta].
 -Gen teacher-Acc he-Top respects
 'As for him_i, self_i's uncle, he_i respects.'

(15a) is bad because the R-expression *John* is A-bound by *pro* in the subject position, leading to a violation of Binding Principle C. Even after an object containing *John* is scrambled across a topic to the sentence

11) (14a) might be a little bit improved when the topic-phrase "apple-Top" has contrastive reading.

initial position, the sentence (15b) is still bad, which indicates the Condition C effect obtains in (15b). Let us observe the approximate representation of (15b) shown below:

- (16) [_{TopP} [John_i-uy samchon]_j-ul [_{TopP} ku_i-nun
[_{CP} [_{IP} pro_i t_j conkyenghanta]]]].

Since the CP and TopP nodes intervene between IP and the TopP-adjoined position, the so-called scrambled object cannot be Θ -marked by the V-I complex of the lower IP. In order for the object to check its Θ role feature, it has to lower to the Spec position of AgroP. Then, it is A-bound by pro at the position, violating Condition C.

For a comparison, let us consider the mechanism, which rules out the following sentences:

- (17) a. *[John_i-uy samchon]_j-ul ku_i-nun [_{IP} pro_i t_j conkyenghanta].
 -Gen uncle-Acc he-Top respects
 'As for him_i, self_i's uncle, he_i respects.'
 b. *[John_i-uy samchon]_j-ul [ku_i-ka t_j conkyenghanta].
 -Gen uncler-Acc he-Nom respects
 'John_i's uncle, he_i respects.'

Although looking alike, the two sentences have different configurations. While, as shown in (16), the object in (17a) is adjoined to the TopP position, the object in (17b) is adjoined to the IP position. Unlike (17a), the object in (17b) is Θ -marked in situ. There the R-expression in the object is A-bound by the subject *ku-ka* 'he-Nom' via the segment theory of adjunction.

The anaphoric reconstruction effect also obtains in scrambling across a topic, as shown in the following examples:

- (18) a. ku_i-nun [_{IP} pro_i caki_i-uy samchon-ul conkyenghanta].
 he-Top self-Gen uncle-Acc respects
 'As for him_i, he_i respects self_i's uncle.'

- b. [caki_i-uy samchon]_j-ul [ku_i-nun [_{IP} pro_i t_j conkyenghanta]].
 self-GEN uncle-Acc he-Top respects
 'As for him_i, self_i's uncle, he_i respects.'

In (18a) *caki* 'self' takes as its antecedent the subject *pro* and hence no condition is violated. In (18b) the object containing *caki* 'self' is scrambled over a topic and thus the reflexive is moved out of the c-command domain of an antecedent. Thus, the syntactic movement analysis regards the examples in (18) as an evidence that scrambling across a topic as well as across a subject has a property of A'-movement.

Without the controversial A vs. A'-distinction, the current analysis is able to account for the binding fact of (18b). Here is the approximate representation of (18b):

- (19) [_{TopP} [caki_i-uy sensayng]_j-ul [_{TopP} ku_i-nun
 [_{CP} [_{IP} pro_i t_j conkyenghanta]].

Since the CP and TopP nodes intervene between the embedded IP and the TopP-adjoined position, the so-called scrambled object cannot be Θ -marked by the V-I complex of the lower IP. In order for the object to check its Θ role feature, it has to lower to the Spec position of Agro. There, then, it is A-bound by *pro*, satisfying the Binding Principle A.

3.4. Anaphor Binding

There appears an intriguing contrast between the CIS and scrambling across a topic. Let us consider the following examples:

- (20) a. [_{IP} John_i-ul [_{IP} caki_i-uy chinku-ka t_i ttaylyessta]].
 -Acc self-Gen friend-Nom hit
 'John, self's friend hit.'
 b. ?*[John_i-ul [caki_i-uy chinku-nun t_i ttaylyessta]].
 -Acc self-Gen friend-Top hit
 'John, self's friend hit.'

- (21) a. [_{IP} kutul_i-ul [_{IP} selo_i-uy apeci-ka t_i chingchanhayssta]].
 they-Acc each other-Gen father-Nom praised
 'Them, each other's fathers praised.'
- b. ?*[_{IP} kutul_i-ul [_{IP} selo_i-uy apeci-nun t_i chingchanhayssta]].
 they-Acc e. o.-Gen father-Top praised
 'As for each other's fathers, them, they praised.'

Unlike the CIS, scrambling across a topic does not create a new binding possibility for an anaphor. If both the examples have the same configuration, (20b) and (21b) should be fine, as is the case with (20a) and (21a). *John_i-ul* 'John-Acc' in (20a) and *kutul_i-ul* 'they-Acc' in (21a) are base-generated there and need not be lowered in our analysis. Then what's a peculiarity in (20b) and (21b)? (20b) and (21b) strengthen our conjecture that the topic is not base-generated in the IP-adjoined position. As is claimed, a topic in Korean is base-generated in the Spec position of TopP. Given this, the scrambled phrase could be argued to be base-generated in the projection higher than IP, that is, a TopP-adjoined position. (22) and (23) could be an elaborated representation of (20b) and (21b), respectively:

- (22) [_{TopP} John_i-ul [_{TopP} caki_i-uy chinku_j-nun
 [_{CP} [_{IP} e_j t_i ttaylyessta]]]].
- (23) [_{TopP} kutul_i-ul [_{TopP} selo_i-uy apeci-nun
 [_{CP} [_{IP} e_j t_i chingchanhayssta]]]].

If the structure in (22) and (23) is correct, we can have our thesis maintainable. The so-called scrambled phrase, which is, according to our analysis, base-generated in TopP-adjoined position, cannot be Θ -marked by the V-I complex of the lower IP. We regard (22) and (23) as the cases of the LDS. Our line of reasoning is that *John_i-ul* 'John-Acc' or *kutul_i-ul* 'they-Acc,' in TopP-adjoined position respectively must be lowered into the Spec position of Agr_oP, and then the anaphor *caki_i* 'self' or *selo_i* 'each other' in the Spec position of TopP is not bound, resulting in a Binding Principle A violation.

4. Summary

This paper dealt with scrambling phenomena with respect to Last Resort principle. We focused on a contrast between IP-adjoined scrambling and TopP-adjoined scrambling. We proposed that the so-called scrambled phrase is base-generated in its non- Θ IP- or TopP-adjoined position and that while it must be obligatorily lowered into its Θ position to check its Θ role feature at LF in case of scrambling across a topic, it stays there in case of clause-internal scrambling. The Θ role feature is proposed to be regarded as one of the formal features which drive movement operation at LF. This proposal is in accordance with the Last Resort principle in that it dispenses with the burden of optionality in movement.

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