# On Some (A)symmetrical Properties of Scramblings

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**ABSTRACT**

This paper investigates symmetrical and asymmetrical properties of clause-internal scrambling and clause-external scrambling in Korean. We first assume that the binding condition applies derivationally while scope interpretation is obtained solely at LF. Concerning binding, the two types of scrambling display (a)symmetric properties that are not well-captured under previous analyses based on the traditional A/A' distinction. Following Hicks's (2008) assumption that the binding condition applies throughout the derivation, we show that binding facts can be explained if we examine the derivational history of scrambled elements. We further show that (a)symmetrical scope facts of clause-internal scrambling and clause-external scrambling are not well-captured under the canonical copy-theory of movements. In the case of QP-QP scope interaction, clause-internal scrambling induces scope ambiguity while clause-external scrambling does not. Regarding this contrast, we suggest that the wide scope interpretation of a quantifier in clause-internal scrambling results from the base-generation of the scope-bearing element at a clause-initial position, whereas the narrow scope interpretation of a quantifier in clause-internal scrambling results from the lowering of the moved quantifier. We lend further support to the proposal that the absence of a wide scope interpretation of a quantifier in the case of clause-external scrambling results from the obligatory reconstruction of the moved QP. However, when a negative polarity item is introduced into the sentence, clause-internal and clause-external scrambled QPs take only wide scope over negation. We suggest that symmetric scope facts related to NPI-QP interaction hinge on a ban on Relativized Minimality violation.

**Keywords:** clause-internal scrambling, clause-external scrambling, binding, quantifier scope, negation, NPI

## 1. Introduction: (A)symmetries of Scrambling in Korean

In Korean, Japanese, Hindi, and many other languages, scrambling operations

can occur both clause-internally and clause-externally, as shown in (1).

(1) a. Yenghi-lul Chelswu-ka miwehanta.
　　　Y.-Acc　　C.-Nom　　hate
　　　'Chelswu hates Yenghi.'
　b. Yenghi-lul na-nun Chelswu-ka miwehanta-ko sayngkakhanta.
　　　Y.-Acc　　I-Top　C.-Nom　　　hate-C　　　　think
　　　'I think that Chelswu hates Yenghi.'

In (1a), the object *Yenghi-lul* 'Y.-Acc' occurs in its clause-initial position. We descriptively call this phenomenon clause-internal scrambling. In (1b), the object in the embedded clause, *Yenghi-lul* occurs in a sentence-initial position. We descriptively call this phenomenon clause-external scrambling.[1]

Each grammatical theory has analyzed the operation from a different perspective (A/A'-movement, case/agreement feature-driven movement/non-operator movement, cost-free movement/EPP-feature checking, and so on). Saito (1992, p. 37) suggests that scrambling in Japanese is uniformly a movement to a non-operator, non-A position, but the landing site of clause-internal scrambling can be reanalyzed as an A-position at LF. Miyagawa (2001) suggests that clause-internal scrambling in Japanese is a movement of an object into Spec-T and this is an EPP-triggered movement, regarded as A-movement. Miyagawa (2001) also suggests that clause-external scrambling in Japanese is solely A'-movement and that it cannot satisfy the EPP requirement of the T of the higher clause. This paper aims to show that the previous approaches based on A/A'-distinction do not capture (a)symmetrical properties of two types of scrambling in Korean.

Our investigation starts with interesting properties of scrambling in Korean through the lens of the A/A' movement dichotomy (cf. Bhatt & Keine, 2019; Ko, 2018; Miyagawa, 2021). In English, A-movement and A'-movement show different

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[1] This paper will not deal with the nature of "shortest" scramblings like (i).

(i) a. *Mary-ka caki-uy$_i$ cip-ulo John-ul$_i$ ponayssta.
　　　M.-Nom self-Gen home-to J.-Acc　sent
　　　'Mary sent John to his home.'
　b. Mary-ka [John-ul$_i$]$_j$ caki-uy$_i$ cip-ulo t$_j$ ponayssta.
　　　M.-Nom J.-Acc　　self-Gen home-to sent
　　　'Mary sent John to his home.'　　　　　　　　　(Ahn & Cho, 2019, p. 273)

Shortest scramblings seem to be subsumed to clause-internal scramblings since they create new binding possibilities, as shown in (ib). However, we leave this issue for future research.

properties concerning anaphora binding, weak crossover, and binding condition C.[2]

(2) A-properties
   a. No weak crossover
   b. New antecedent for anaphor binding
   c. No reconstruction for binding condition C
(3) A'-properties
   a. Weak crossover
   b. No new antecedent for anaphor binding
   c. Reconstruction for binding condition C

It has been observed that unlike A'-movement, A-movement is not subject to weak crossover (Postal, 1971; Wasow, 1972). A-movement creates an antecedent while A'-movement does not. Unlike A-movement, A'-movement displays Condition C Connectivity, at least arguments and possessors (Chomsky, 1993; Fox, 1999; Lebaux, 1988, 2000; Sauerland, 1998; Takahashi & Hulsey, 2009).

Mahajan (1990) indicates that in Hindi, clause-internal scrambling does not trigger weak crossover (WCO) effects, unlike clause-external scrambling.[3] Likewise, in

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2) Ko (2018) points out the three distinct properties with the examples in (i-iii).

(i) a. [John and Mary]$_i$ seemed to each other$_i$ to be t$_i$ polite.
   b. *Who$_i$ did [each other's$_i$ friends] speak ill of t$_i$?
(ii) a. Everyone$_i$ seemed to his$_i$ mother to be t$_i$ smart.
   b. ?*Who$_i$ does [his$_i$ mother] love t$_i$?
(iii) a. [John's$_i$ brother]$_j$ seem to him$_i$ to t$_j$ be polite.
   b. *[John's$_i$ brother]$_j$ he$_i$ likes t$_j$.

In (ia), [*John and Mary*] undergoes A-movement, and it can be a new binder for *each other*. By contrast, in (ib), *John's brother* undergoes A'-movement, which cannot establish a new binding relationship with *each other*. In (iia), the pronoun *his* can be bound by the A-moved phrase *everyone*, while in (iib), the pronoun *his* cannot be bound by the A'-moved phrase *who*. In (iiia), *John's brother* undergoes A-movement and the coreference between *John* and *him* does not violate binding condition C. By contrast, in (iiib) *John's brother* undergoes A'-movement, the coreference between *John* and *he* violates binding condition C.

3) Mahajan (1990, p. 25) shows that in Hindi, if the object is scrambled over the subject containing a pronoun to the clause-initial position of its clause, WCO effects do not occur, as shown in (i).

(i) sab-ko$_i$   unkii$_i$ bahin pyaar kartii      thii.
    everyone their  sister love do-imp-f be.pst.f
  'Their$_i$ sister loved everyone$_i$.'

However, clause-external scrambling in Hindi displays WCO effects, as shown in (ii).

Hindi clause-internal scrambling licenses anaphora binding, unlike clause-external scrambling.[4] Based on the facts, Mahajan (1990) suggests that clause-internal scrambling is A-movement and that clause-external scrambling is A'-movement.

Interestingly, clause-internal and clause-external scramblings in Korean behave like A-movement in some aspects and they behave like A'-movement in others. Furthermore, although it is generally assumed that in many languages, clause-internal scrambling is A-movement and clause-external scrambling is A'-movement, the two types of scrambling in Korean show symmetrical behaviors concerning weak crossover and binding condition A.

As shown in (4a-b), clause-internal scrambling and clause-external scrambling in Korean do not show a weak crossover effect (Ahn et al., 1990; Cho, 1994a; Ko, 2018).

(4) a. Nwukwu-lul$_i$ [ku-uy$_i$ apeci-ka]-ka t$_i$ silheha-ni?
     who-Acc     he-Gen father-Nom     dislike-Q
     'Who$_i$ did his$_i$ father dislike t$_i$?'
   b. Nwukwu-lul$_i$ [ku-uy$_i$ apeci]-ka    [John-i t$_i$ ttalylyessta-ko] malhayss-ni?
     who-Acc     he-Gen father-Nom J.-Nom    hit-C          said-Q
     'Who$_i$ did his father say that John hit t$_i$?'

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(ii) sab-ko$_i$   uskii$_i$ bahin-ne socaa   [CP (ki) raam-ne t$_i$ dekhaa].
     everyone his   sister       thought (that) Ram       saw
     '*His$_i$ sister thought that Ram saw everyone$_i$.'

4) Mahajan (1990, p. 32) notes that in Hindi a scrambled object can serve as an antecedent to an anaphora contained within an NP in the subject position, as shown in (ib).

(i) a. */???apne$_i$ baccon-ne  mohan-ko$_i$ ghar se   nikaal diyaa.
       self's children  Mohan    house from  throw give-perf
       '*Self$_i$'s children threw Mohan$_i$ out of the house.'
   b. ?mohan-ko$_i$ apne$_i$ baccon-ne ghar  se   nikaal diyaa
       Mohan     self's childran    house from  throw give-perf
       '(lit.) Mohan$_i$, self$_i$'s children threw out of the house.'

Mahajan (1990, p. 44) notes that the moved phrase in the case of clause-external scrambling fails to antecede a reflexive in the matrix clause, as shown in (iib).

(ii) a. *apni$_i$ bahin-ne socaa  ki  raam-ne  mohan-ko dekhaa.
       self's sister       thought that Ram       Mohan$_i$   saw
       '(lit.)Self's sister thought that Ram saw Mohan.'
   b. *mohan-ko$_i$ apniii babin-ne socaa   ki  raam-ne t$_i$ dekhaa.
        Mohan$_i$     self$_i$'s sister   thought that Ram       saw
       '(lit.)Mohan$_i$, self$_i$'s sister thought that Ram saw.'

Concerning anaphor binding, both clause-internal and clause-external scrambling in Korean pattern with A-movement in English.[5]

(5) a. *Selo-uy$_i$        chinkwu-ka kutul-ul$_i$  kosohayssta.
     each.other-Gen   friend-Nom they-Acc   sued
     'Each other$_i$'s friends sued them$_i$.'         (Cho, 1994a, p. 101)

   b. [Kutul-ul]$_i$ selo-uy$_i$       chinkwu-ka  t$_i$ kosohayssta.
     they-Acc  each.other-Gen friend-Nom     sued
     'Each other$_i$'s friends sued them$_i$.'         (Cho, 1994a, p. 101)

(6) a. *Selo-uy$_i$        chinkwu-ka John-i  kutul-ul$_i$ kosohayssta-ko malhayssta.
     each other-Gen  friend-Nom J.-Nom they-Acc  sued-C          said
     'Each other$_i$'s friends said that John sued them$_i$.'

   b. [Kutul-ul]$_i$ selo-uy$_i$       chinkwu-ka [John-i t$_i$ kosohayssta-ko]
     they-Acc  each other-Gen friend-Nom J.-Nom    sued-C
     malhayssta.
     said
     'Each other$_i$'s friends said that John sued them$_i$.'
         (Ahn et al., 1991; Cho, 1994b, p. 263; Lee, 1990; Yoon, 1991)

In (5b) and (6b), as a result of scrambling, the scrambled phrase whether it is clause-internal or clause-external can be a binder for the anaphor *selo-uy* and binding condition A is satisfied.

In the case of binding condition C connectivity, contrasting grammatical judgments are observed in clause-internal and clause-external scramblings. First of all, clause-

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5) A reviewer indicates that *selo* 'each other' occurs in the context where the c-commanding antecedent is not available, as shown in (i).

(i) A: John-kwa Mary-ka tto     ssawuney.
    J.-and     M.-Nom again quarreling
    'John and Mary are quarreling with each other again.'
  B: Selo-ka         acwu silheha-canha.
    each other-Nom  much dislike-don't they
    'They dislike each other a lot, don't they?         (Lee, 2006, p. 136)

As pointed out by Lee (2001), it is only possible when the antecedent of *selo* is provided by the spoken context. Lee (2006) suggests that the English reciprocal *each other* and its Korean counterpart *selo* conform to the locality condition of binding principle A. The only exception is the case like (iB). Lee (2006) suggests that the exception is dealt best with by recognizing a null topic-operator that binds *selo*. Here we do not discuss the exact nature of the discourse-bound *selo* in (iB). However, we note that the grammatical contrast between (5a) and (5b) and between (6a) and (6b) gives us a non-trivial piece of evidence that *selo* can have an antecedent as a result of scrambling.

internal scrambling is reported to circumvent a Condition C violation, as shown in (7).

(7) John-uy$_i$ emma-lul   ku-ka$_i$   piphanhayssta.
    J.-Gen   mother-Acc  he-Nom criticized
    'John$_i$'s mother, he$_i$ criticized.'                    (Ahn et al., 1990, p. 5)

Note that the following sentence (8) can be ruled out as a standard Condition C violation.

(8) *Ku-ka$_i$    John-uy$_i$ emma-lul    piphanhayssta.
    He-Nom J.-Gen    mother-Acc criticized
    'He$_i$ criticized John$_i$'s mother.'

Thus, the well-formed scrambling structure like (7) calls for an explanation if clause-internal scrambling is derived via movement-like operations.

Clause-external scrambling, on the other hand, seems to behave like a typical A'-movement, which displays condition C connectivity. (9a) shows grammatical judgment parallel with (9b) (Cho, 1994a).

(9) a. *[John-uy$_i$ atul-ul]$_j$ ku-ka$_i$   [Mary-ka t$_j$ ttaylyessta-ko] sayngkakhanta.
       J.-Gen   son-Acc he-Nom  M.-Nom   hit-C          think
       'He$_i$ thinks that Mary hit John's$_i$ son.'
    b. *Ku-ka$_i$ [Mary-ka [John-uy$_i$ atul-ul]   ttaylyessta-ko] sayngkakhanta.
       he-Nom M.-Nom J.-Gen    son-Acc hit-C          think
       'He$_i$ thinks that Mary hit John's$_i$ son.'

However, there are some cases where both clause-internal and clause-external scrambling circumvents binding condition C violation, as shown in (10).

(10) a. [Yenghi-ka Minho-eykey$_i$ cwun sacin-ul]$_j$    ku-ka$_i$  t$_j$ caki-uy
        Y.-Nom    M.-Dat        gave picture-Acc he-Nom    self-Gen
        pang-ey censihayssta.
        room-in displayed
        '[The picture that Yenghi gave Minho$_i$] he$_i$ displayed in his room.'
                                                                (cf. Saito, 1992)

b. [Yenghi-ka Minho-eykey$_i$ cwun sacin-ul]$_j$  ku-ka$_i$
 Y.-Nom  M.-Dat  gave  picture-Acc he-Nom
[Cheli-ka t$_j$ caki-uy  pang-ey censihayssta-ko] sayngkakhanta.
 C.-Nom  self-Gen  room-in displayed-C  think
'[The picture that Yenghi gave Minho$_i$] he$_i$ thought that Cheli displayed
in his room.'

(11) a. *Ku-ka$_i$  [Yenghi-ka Minho-eykey$_i$ cwun sacin-ul]
 he-Nom Y.-Nom  M.-Dat  gave  picture-Acc
caki-uy  pang-ey censihayssta.
self-Gen  room-in displayed
'He$_i$ displayed [the picture that Yenghi gave Minho$_i$] in his room.'

b. *Ku-ka$_i$ [Cheli-ka [Yenghi-ka Minho-eykey$_i$ cwun sacin-ul]
 he-Nom C.-Nom Y.-Nom  M.-Dat  gave  picture-Acc
caki-uy  pang-ey censihayssta-ko] sayngkakhanta.
self-Gen room-in displayed-C  think
'He$_i$ thought that Cheli displayed [the picture that Yenghi gave Minho$_i$]
in his room.'

The coreference between *Minho-eykey* and *ku-ka* in (10) seems to be possible, which
indicates that Condition C violation does not arise. The grammatical contrast
between (10) and (11) shows that the scrambled phrases are not interpreted in the
base-position concerning Condition C in this structural context.

Concerning Binding Condition A and weak crossover effect, symmetries between
clausal-internal and clause-external scrambling make us doubt about A/A' distinction
of scrambling in Korean. This paper aims to account for the mixed properties of
two types of scrambling.

We further investigate (a)symmetrical behaviors of clause-internal and clause-
external scrambling on scope phenomena. Concerning QP-QP scope interaction,
clause-internal and clause-external scrambling show asymmetries, as shown in
(12-13).

(12) a. Nwukwunka-ka manhun salam-ul  piphanhayssta.
 someone-Nom  many  people-Acc criticized
 'Someone criticized many people.'  (someone > many people)

b. Manhun salam-ul     nwukwunka-ka piphanhayssta.
  many    people-Acc someone-Nom   criticized
  'Someone criticized many people.' (someone> <many people)

<div align="right">(Sohn, 1995, p. 190)</div>

(13) a. Nwukwunka-ka John-i   manhun salam-ul    piphanhayssta-ko
     Someone-Nom J.-Nom many    people-Acc criticized-C
     sayngkakhanta.
     think
     'Someone thinks that John criticized many people.'
     (someone> many people)

   b. Manhun salam-ul    nwukwunka-ka John-i    piphanhayssta-ko
     many    people-Acc someone-Nom  J.-Nom   criticized-C
     sayngkakhanta.
     think
     'Someone thinks that John criticized many people.'
     (someone > many people)       (Lee, 2010, p. 28; Sohn 1995, p. 191)

Scope alternation (ambiguity) is observed in clause-internal scrambling, as shown in (12b), whereas it is not observed in clause-external scrambling, as shown in (13b). When the embedded object QP undergoes clause-external scrambling above the matrix subject, as in (13b), it cannot take wide scope.

  However, the two types of scrambling behave similarly concerning scope in a certain context. Clause-internal and clause-external scrambled QPs take only wide scope over negation when an NPI is introduced into the sentence:

(14) a. Amwuto manhun salam-ul    mannaci anhassta.
     anyone  many    people-Acc meet     not.Dec
     'No one met many people.' (not>many,*many>not)

<div align="right">(Sohn, 1995, p. 90)</div>

   b. Manhun salam-ul    amwuto mannaci anhassta.
     many    people-Acc anyone meet     not.Dec
     'There are many people who no one met.' (many>not, *not>many)

<div align="right">(Sohn, 1995, p. 90)</div>

(15) a. Amwuto Tom-i   manhun salam-ul    piphanhayssta-ko mitci anhnunta.
     anyone  T.-Nom many    people-Acc criticized-C       believe not.Dec
     'No one believes that Tom criticized many people.'

(not>many, *many>not)                    (Sohn, 1995, p. 199)

   b. Manhun salam-ul$_i$   amwuto Tom-i t$_i$ piphanhayssta-ko mitci

    many   people-Acc anyone T.-Nom criticized-C    believe

    anhnunta.

    not.Dec

    'No one believes that Tom criticized many people.'

    (many>not, *not>many)                    (Sohn, 1995, p. 199)

In (14b) and (15b), scrambled QPs display anti-reconstruction effects. At this point, the following question arises: Why do the two types of scrambling in Korean behave similarly concerning binding and QP-Neg scope interaction and behave differently with respect to QP-QP scope interaction?

Building upon the assumption that binding condition applies derivationally while scope interpretation is obtained solely at LF, this paper investigates the shared and distinct properties of the two types of scrambling in Korean, and aims to account for the properties. This paper is organized as follows. Section 2 suggests an elaborate analysis of binding phenomena. Section 3 shows how the absence or presence of scope ambiguity in the two types of scrambling can be accounted for under the analysis advanced here. Concluding remarks are presented in Section 4.

## 2. Binding Symmetries

In this section, we show that symmetrical behaviors that clause-internal and clause-external scrambling displays concerning binding can be explained if we examine the derivational history of scrambled elements. We also show how a scrambled XP can be served as a new binder for anaphors. We further discuss how some elements inside the scrambled XP do not circumvent the Condition C violation and how other elements inside the scrambled XP obviate the Condition C violation.[6] We also discuss speakers' variations related to Condition C. We suggest that clause-internal scrambling is not derived from one unitary operation (cf. Ahn & Cho, 2010, 2019; Bošković, 2010; Lee, 2008).[7] We claim that

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6) We do not discuss how scrambling in Korean is not subject to Weak Crossover (WCO). Instead of providing a new analysis for scrambling, we follow Bhatt & Keine's (2019) analysis. According to them, scrambling, which has an A-movement property, allows λ-abstraction over an individual-type variable (e-type variable), and pronouns are invariably of type e. Hence, scrambling in Korean is not subject to WCO.

clause-internally scrambled word orders may result from two possible derivational structures: Movement (16a) and Base-generation (16b).[8]

(16) a. [$_{TP}$  Object$_i$ [$_{TP}$ Subject$_j$ [$_{vP}$ t$_i$ [$_{vP}$ t$_j$ [$_{VP}$ t$_i$ V]]]]]
b. [$_{TopP}$ Object$_i$ [$_{TP}$ Subject$_j$ [$_{vP}$ t$_j$ [$_{VP}$ pro$_i$ V]]]]

We suggest that a scrambled object is derived either via a TP-adjoined movement, as depicted in (16a), or is base-generated in Spec-Top, as shown in (16b).[9] We suggest that the two possible structures can be a clue to the causes of speakers' variation in scope and binding. As noted in the previous literature, the TP-adjoined movement is an instance of non-operator movements which induce radical reconstruction (Saito, 1992). In contrast, we suggest that the base-generated phrase and its follow-up clause containing the coreferent pro in (16b) may be subsumed to a "topic-comment"-like structure characterized by an aboutness condition. The topic-comment structure is ubiquitous in Korean syntax such as multiple Nom/Acc constructions and ECM constructions, and the base-generated scrambling structure is one of them. Topic-comment structure meeting an aboutness condition is more

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7) Lee (2008) suggests that seemingly scrambling constructions in Korean can be analyzed as topicalization, focalization, or pure scrambling (which occurs at PF). However, Ahn & Cho (2019, p. 261) indicate that scrambling is regulated by certain grammatical constraints. This cannot be accounted for under the PF scrambling account. More specifically, the ill-formedness of (i) is well accounted for under the analysis assuming Fox & Pesetsky's (2005) cyclic linearization.

(i) a. *Apeci-uy$_i$   Chelswu-ka ecey      Yenghi-uy t$_i$   cha-lul   pilyesse.
       father-Gen  C.-Nom     yesterday Y.Gen      car-Acc borrowed
       'Chelswu borrowed Yenghi's father's car yesterday.'
   b. *Kongpwu-lul$_i$ Chelswu-ka onul-to     yenge-lul t$_i$  haci  ahnassta.
       study-Acc    C.-Nom     today-too English-Acc do    not
       'Chelswu didn't study English today, either.
   c. *[cako iss-ta-ko]$_i$  Chelswu-nun Yenghi-ka cip-eyse t$_i$  sayngkakhanta.
       sleep be-Dec-C C.-Top      Y.-Nom     home-at   think
       'Chelswu thinks that Yenghi is sleeping at home.'

Ahn & Cho (2019) argue that scrambling in Korean occurs not at PF but at the syntax proper, which may also give rise to some interpretive effects.

8) Ahn & Cho (2010, 2019) also put forward two operations for clause-internal scrambling in Korean. Their analysis, however, departs from non-unitary operations advanced in this paper since they propose two distinct "movement" operations like TP-adjunction movement and focus-movement (movement to Spec-C). In this paper, we suggest that scramblings in Korean involve either a movement or a base-generation, and the scrambled phrases in the edge of the matrix clause are uniformly analyzed as TP-adjunction. However, we will not further compare and evaluate the validity of the two proposals here.

9) According to den Dikken (2005), a topic constituent occupies the specifier position of a TopP whose head takes the second clause, the comment, as its complement.

or less similar to subject-predicate relations, and hence base-generated object phrase in (16b) must be adjacent to its following comment structure TP. As a result, this option is only available for clause-internal scrambling. Accordingly, clause-external scrambled word order is only derived from a movement, as shown in (17).[10]
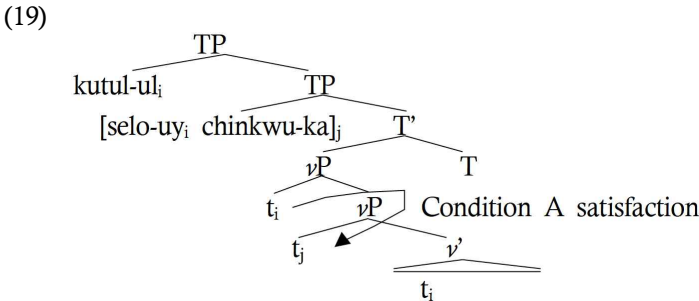
(17) [$_{TP}$ Object$_i$ [$_{TP}$ Subject [$_{CP}$ Subject $t_i$ V].. V]

As a result, some (a)symmetries between clause-internal vs. clause-external scrambling follow in the next sections.

### 2.1. New antecedents for binding condition A

Following Hicks's (2008) assumption that binding condition applies throughout the derivation, we show how two types of scrambling constructions in Korean provide new antecedents for anaphors.[11] The example in (18), involving clause-internal scrambling, can have a derivational structure like (19).

(18) Kutul-ul$_i$   selo-uy$_i$       chinkwu-ka   kosohayssta.
     they-Acc   each.other-Gen  friend-Nom   sued
      'Each other's friends sued them.'

(19)



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10) On the way of clause-external scrambling in (17), the scrambled object may either adjoin to TP or move through Spec-C of the embedded clause. The consequences of these two options will be discussed later. Note, however, that these options may not be available in the landing sites of the scrambled phrases in the matrix clauses. We assume that there are fundamental differences in the clausal architecture between matrix clauses and embedded clauses in Korean (and perhaps cross-linguistically). In particular, we assume that CP is not present in the matrix clause in Korean.

11) Belletti & Rizzi (1988) suggest that binding principle A applies whenever it can. Lebeaux (1998) suggests that Condition B and C also apply during the derivation. Hicks (2008, p. 277) shows that scope determination is different from condition A satisfaction and that a narrow syntactic version of Condition A makes more successful empirical predictions than the LF approach to Condition A.

In (19), *kutul-ul* undergoes movement through the outer Spec position of $v$P, where it binds *selo-uy* in the inner Spec position of $v$P.

Note, however, that the example in (18) can have a structure like (20).

(20) [Kutul-ul$_i$ selo-uy$_i$ chinkwu-ka pro$_i$ kosohayssta]

In (20), *kutul-ul* in a sentence-initial position directly binds the anaphor *selo-uy* 'each other-Gen'.[12]

As noted in the previous literature, clause-external scrambling in Korean can also provide an antecedent for anaphors, as shown in (21b).

(21) a. *Selo-uy$_i$  chinkwu-ka John-i        kutul-ul$_i$ kosohayssta-ko    malhayssta.
         each      other-Gen  friend-Nom J.-Nom they-Acc sued-C   said
         'Each other's friends said that John sued them.'
     b. Kutul-ul$_i$ selo-uy$_i$           chinkwu-ka John-i  kosohayssta-ko malhayssta.
         they-Acc each other-Gen  friend-Nom J.-Nom sued-C        said
         'Each other's friends said that John sued them.'
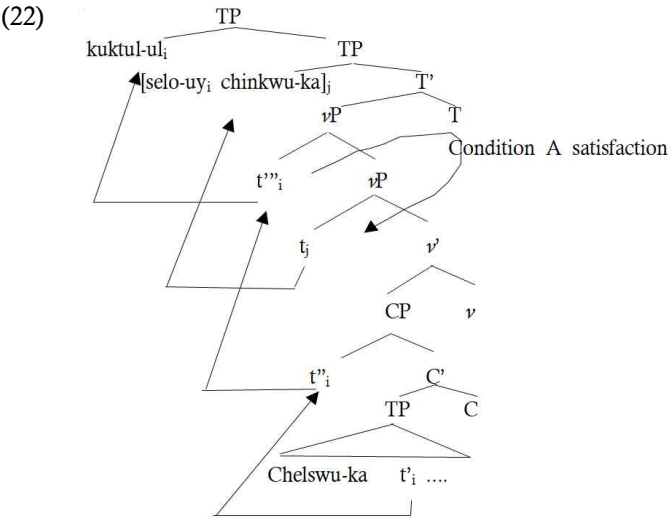                        (Ahn et al., 1991; Cho, 1994b, p. 263; Johnston & Park, 2001;
                                            Lee, 1990; Lee, 2006; Yoon, 1991)

We suggest that clause-external scrambling is derived by the TP-adjunction movement. The well-formedness of (21b) is expected under our proposal if (21b) is derived in the following manner:

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12) In Korean, base-generated topics, in general, seem to be able to serve as an antecedent for anaphors, as shown in (i).

(i) a. Kutul-un$_i$ selo-uy$_i$        apeci-ka    pwucata.
       they-Top each.other-Gen father-Nom rich
       '(Lit.) As for them$_i$, each other's$_i$ fathers are rich.'
   b. John-un$_i$ caki-uy$_i$ apeci-ka    pwucata.
       John-Top self-Gen ather-Nom rich
       '(Lit.) As for Johnt$_i$, self's$_i$ father is rich.'

In (ia), *kutul-un* binds *selo-uy* 'each.other-Gen', and in (ib), *John-un* binds *caki-uy* 'self-Gen'.

(22)

TP
kuktul-ul$_i$   TP
[selo-uy$_i$ chinkwu-ka]$_j$   T'
vP   T
Condition A satisfaction
t'''$_i$   vP
t$_j$   v'
CP   v
t''$_i$   C'
TP   C
Chelswu-ka   t'$_i$ ....

*Kutul-ul* 'they-Acc' is base-generated inside TP in the embedded clause and moves to Spec−C in the embedded clause. Consequently, it undergoes a movement from Spec-C in the embedded clause to vP in the matrix clause. In the outer Spec of v, *kutul-ul* 'them' binds *selo-uy chinkwu-ka* 'each other's friends', satisfying binding condition A.

## 2.2. Binding condition C connectivity

Ahn et al. (1990, p. 5) report that Condition C connectivity does not occur with the clause-internal scrambling as shown (7b), repeated here as (23).

(23) John-uy$_i$ emma-lul   ku-ka$_i$   piphanhayssta.
     J.-Gen   mother-Acc he-Nom criticized
     'John's mother, he criticized.'

If (23) is derived via a TP-adjoined movement, as shown in (24), the sentence is predicted to be ruled out as a violation of Condition C since *ku-ka* binds *John-uy* throughout the derivation.[13]

13) A notable difference between clause-internal scrambling in Korean and raising in English is that the scrambled argument is case-licensed before movement while the A-moved argument is not:

(i) [John's$_i$ brother]$_j$ seem to him$_i$ to t$_j$ be polite.

(24) [$_{TP}$[John-uy$_i$ emma-lul]$_j$ [$_{TP}$ ku-ka$_i$ [$_{vP}$ t$_i$ [$_{vP}$ t$_j$ piphanhayssta]]]]

We suggest that those who accept (23) might parse the scrambled phrase as base-generation, and hence no Principle C violation occurs, as shown in (25).

(25) [$_{TopP}$ [John-uy$_i$ emma-lul]$_j$ [$_{Top'}$[$_{TP}$ ku-ka$_i$ [$_{vP}$ [$_{vP}$ t$_i$ [$_{vP}$ pro$_j$ V]]]]Top]]

In (25), *John-uy emma-lul* 'John's mother' is base-generated in a sentence-initial position, and coreference between *John* and *ku* 'he' does not violate Condition C.[14]
     Interestingly, clause-external scrambling is reported to uniformly display Condition C connectivity in the previous literature, as shown in (26). We suggest that (26) has a structure like (27).

(26) *[John-uy$_i$ atul-ul]$_j$ ku-ka$_i$  [Mary-ka t$_j$ ttaylyessta-ko] sayngkakhanta.
        J.-Gen   son-Acc  he-Nom M.-Nom    hit-C          think
        'He$_i$ thinks that Mary hit John's$_i$ son.' (Cho, 1994a)

(27) [$_{TP}$ [John-uy$_i$ atul-ul]$_j$ [$_{TP}$ ku-ka$_i$ [$_{vP}$ t$_j$ [$_{vP}$ t$_i$ [$_{vP}$ [$_{CP}$ Mary-ka
        ..t$_{j...}$ttaylyessta-ko] sayngkakhanta]]]]

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In (i), *John's brother* moves from a non-case-licensed position to a case-licensed position. By contrast, scrambling in Korean does not change the case of the scrambled DP. As pointed out by Bhatt & Keine (2019), the case connectivity of scrambling indicates that scrambling targets DPs whose case is already valued before scrambling.

14) As noted in the previous literature, there are some cases that show an apparent Condition C violation in clause-internal scrambling:

(i) *[Minho-uy$_i$ emma-lul]$_j$  ku-ka$_i$   t$_j$ cohahanta.
     M.-Gen    mother-Acc  he-Nom   like
     'He$_i$ likes Minho's$_i$ mother.'                    (cf. Lee, 1994; Kim, 1998; Cho & Kim, 2000)

Were this clause-internal scrambling construction derived from a topic-comment base-generation structure, the sentence is predicted to be ruled in on a par with (23). We speculate that ill-formedness may result from a specific property of *ku* 'he' in Korean. Choi (2013) notes that 3rd person *ku* differs from the 3rd person pronoun *he* in English. Unlike *he* in English, *ku* does not frequently occur in colloquial Korean and even in the case of written Korean, and hence its distribution is very limited (Lee & Chae, 1999, p. 152; An, 2008, p. 146). Furthermore, it is held that *ku* is introduced into Korean as a direct translation of English *he*. For this reason, *ku* is employed to refer to Western names such as *John* more naturally than Korean names like *Minho*. Therefore, although in the derivation of (i), Condition C is not violated, because of the restricted use of *ku* against Korean names, speakers may judge (i) marginal or stylistically odd unlike (23). We leave further investigations of this matter for the future.

In this derivation, *ku* 'he' binds *John* in a base position (before movement), which results in Condition C violation. Note that unlike clause-internal scrambling, clause-external scrambling cannot give rise to topic-comment base-generation structures, and hence Condition C cannot be circumvented.

Note, however, that there are examples where Condition C connectivity disappears even in clause-external scrambling, as shown in (10), repeated here as (28).[15]

(28) a. [Yenghi-ka Minho-eykey$_i$ cwun]$_j$ sacin-ul ku-ka$_i$ t$_j$ caki-uy
　　　　Y.-Nom 　M.-Dat 　　　　gave 　picture-Acc he-Nom 　 self-Gen
　　　　pang-ey censihayssta.
　　　　room-in displayed
　　　　'[The picture that Yenghi gave Minho$_i$] he$_i$ displayed in his room.'

(cf. Saito, 1992)

　　b. [Yenghi-ka Minho-eykey$_i$ cwun sacin-ul]$_j$ ku-ka$_i$
　　　　Y.-Nom 　 M.-Dat 　　　　 gave picture-Acc he-Nom

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15) In Japanese, a possessor inside a scrambled phrase cannot obviate a Condition C violation, as shown in (ia) while R-expression inside the relative clause that occurs with a scrambled nominal can, as shown in (ib).

(i) a. ??[Taroo-no$_i$ shashin-o]$_j$ 　[kare-ga$_i$ zibun-no heya-ni t$_j$ kazatteiru] (koto)
　　　　 T.-Gen 　 picture-Acc he-Nom self-Gen room-in 　 display 　 fact
　　　　 '[Taro's$_i$ picture] he$_i$ displays in his room.' 　　　　　 (Saito, 1992, p. 91)
　　b. [Hanako-ga Taroo-ni$_i$ ageta syasin-o]$_j$ 　[kare-ga$_i$ zibun-no heya-ni t$_j$ kazatteiry] (koto)
　　　　 H.-Nom 　 T.-to 　　 gave picture-Acc he-Nom self-Gen room-in 　 display 　 fact
　　　　 '[The picture that Hanako gave Taro] he displays in his room.' 　　 (Saito, 1992, p. 91)

Saito (1992, p. 113) also indicates that in Japanese, the anti-reconstruction effect may depend even on the choice of the matrix verb, as shown in (ii):

(ii) a. ?*[Masao-no$_i$ hahaoya-o]$_j$ [kare-ga$_i$ aisiteiru] (koto)
　　　　 M-Gen 　 mother-Acc he-Nom love 　 fact
　　　　 '[Masao's$_i$ mother]$_j$, he$_i$ loves t$_j$'
　　b. ?[Masaoi-no sensei-o]$_j$ 　[kare$_i$-ga syookaisita] (koto)
　　　　 M-Gen 　 teacher-Acc he −Nom introduced 　 fact
　　　　 '[Masao's$_i$ teacher]$_j$, he$_i$ introduced t$_j$ (to the audience)'

However, the Korean counterpart of (ii) does not seem to exhibit the similar contrast:

(iii) a. John-uy$_i$ 　 emma-lul ku-ka$_i$ 　 salanghanta.
　　　　 J.-Gen 　　 mother-Acc he-Nom love
　　　　 'John's$_i$ mother he$_i$ loves.'
　　b. John-uy$_i$ sensayngnim-ul ku-ka$_i$ 　 sokayhayssta.
　　　　 J.-Gen 　 teacher-Acc 　　 he-Nom introduced
　　　　 '[John's$_i$ teacher]$_j$, he$_i$ introduced t$_j$ (to the audience).'

Cheli-ka t$_j$ caki-uy    pang-ey  censihaysssta-ko sayngkakhanta.
C.-Nom     self-Gen  room-in displayed-C      think
'[The picture that Yenghi gave Minho$_i$] he$_i$ thought that Cheli displayed in his room.'

The scrambled phrases in (28) occur with a relative clause. According to the seminal proposal in Lebeaux (1988, 2000), adjuncts may be late-merged into a moved DP.[16] This allows for Condition C obviation with R-expressions in relative clauses. The relative clauses in (28) are late-merged into scrambled nominal, so Condition C violation does not occur. Thus, even clause-external scrambling in

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16) Tada (1993, p. 65) claims that when a relative clause is more deeply embedded in the preposed phrase, it may not be introduced after movement. The prediction seems to be borne out:

(i) a *Kare-ga$_i$ tsuma-ni [[John-ni$_i$ kita   tegamij-o] suteru-yooni] meijita.
      he-Nom wife-Dat  J.-Dat    come letter-Acc throw away  ordered
      'He told his wife to throw away the letter that came to John.'
   b. [[John-ni$_i$ kita   Zgamil-o]$_j$ kare-ga$_i$ tsuma-ni [t$_j$ suteru-yooni] meijita.
      J.-Dat    come  letter-Acc he-Nom wife-Dat     throw away ordered
      'The letter that came to John$_i$, he$_i$ told his wife to throw may.'
   c.?*[[John-ni$_i$ kita]   tegamil-o suteru-ywni]$_j$ kare-ga$_i$  tsuma-ni t$_j$ meijita.
      J.-Dat    come letter-Acc throw away  he-Nom  wife-Dat   ordered
      'To throw away the letter that came to John$_i$, he$_i$ told his wife.'

Tada (1993, p. 65) claims that in (ib), the scrambling of the NP containing the relative clause exhibits anti-reconstruction effects. However, if the complement clause containing the NP is preposed, reconstruction effects show up. A similar effect seems to be observed in Korean.

(ii) a. *Ku-ka$_i$   pwuin-eykey John-eykey$_i$ o-n      pyenci-lul  pelila-ko
       He-Nom wife-Dat     J.-Dat       come-Rel letter-Acc throw.away-C
       myenglyenghayyssta.
       ordered
       'He told his wife to throw away the letter that came to John.'
    b. John-eykey$_i$ o-n       phyenci-lul ku-ka$_i$  pwuin-eykey pelila-ko
       J.-Dat      come-Rel letter-Acc   he-Nom wife-Dat     throw.away-C
       myenglyenghayssta.
       ordered
       'He told his wife to throw away the letter that came to John.'
    c. *John-eykey$_i$ o-n       pyenci-lul pelila-ko      ku-ka$_i$  pwuin-eykey
       J.-Dat       come-Rel letter-Acc throw.away-C  he-Nom wife-Dat
       myenglyenghayssta.
       ordered
       'He told his wife to throw away the letter that came to John.'

In the case of NP scrambling like (iib), the anti-reconstruction effect seems to be observed. By contrast, in the case of VP preposing like (iic), the reconstruction effect seems to show up. If the contrast is real, our analysis may account for the contrast since the scrambled VP in (iic) cannot serve as a Topic unlike the scrambled DP in (iib). In other words, (iic) cannot be analyzed as a base-generated structure that may circumvent Condition C violation.

(28b) can obviate Condition C violation unlike (26).

At this point, the following question arises: why doesn't the late-merge occur in (26)? We have to note Safir's (1999) assumption that possessors cannot be late-merged. The obligatory presence of the NP restrictor with possessors from the base position immediately results in Condition C connectivity. Hence, (26) is subject to Condition C violations.[17]

## 3. Scope (A)symmetries

This section focuses on scope differences between clause-internal scrambling and clause-external scrambling and scope similarities between them concerning the anti-reconstruction effects of scrambled QPs with NPI subjects.

### 3.1. Scope asymmetries

Kuroda (1971) and Huang (1982) suggest that in Korean and Japanese, quantifier scope is determined by the surface order of the quantifiers. This view is problematic in accounting for the scope ambiguity of clause-internally scrambled quantifiers and an undoing property of clause-externally scrambled quantifiers. The scope analysis based on the copy theory of movement does not account for scope asymmetries between two types of scrambling, either. In other words, it needs an additional assumption to explain why the higher copy is not active in the case of a clause-

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17) An anonymous reviewer indicates that the following sentence needs to be accounted for.

(i) Cakicasin-ul$_i$ Chelswu-ka$_i$ pinanhayssta.
   self-Acc     C.-Nom     blamed
   'Himself$_i$, Chelswu$_i$ blamed.'

When *cakicasin-ul* 'himself' undergoes a TP-adjoined movement, (i) has the derivational structure like (ii):

(ii) [$_{TP}$[Cakicasin-ul]$_j$ [$_{TP}$ Chelswu-ka$_i$ [$_{vP}$ t$_i$ [$_{VP}$ t$_j$ pinanhayssta]]]]

In (i), *Chelswu-ka* binds *cakicasin-ul* before movement, and hence Binding Condition A is satisfied. In the case of Base-generation, we suggest that (i) has the structure like (iii).

(iii) [$_{TopP}$ [Cakicasin-ul]$_j$ [$_{TP}$ Chelswu-ka$_i$ [$_{vP}$ t$_i$ [$_{VP}$ Pro$_j$ pinanhayssta]]]]

In (iii), *cakicasin-ul* is not bound, which gives rises to a Binding Condition A violation. Thus, it seems that speakers who judges (i) well-formed parse the sentence like (ii).

externally scrambled quantifier.

Lee (2008, p. 161) suggests that in the case of clause-external scrambling, such undoing effects concerning scope change result from the scope reconstruction effects, not due to the whole DP reconstruction that leads to the semantic vacuity. Lee shows that DPs that undergo movement across the clause boundary show focusing effects.

However, as mentioned in section 1, the undoing effects disappear in the case of NPI-QP interaction. If the lowest copy determines the scope in the case of clause-external scrambling, it may not account for the anti-reconstruction of scoping in the case of NPI-QP interaction. Thus, an analysis like this needs an additional assumption to explain why the lowest copy *in situ* is inactive in scope determination. If one would assume that both the high and the low copy are active in the case of clause-internal scrambling, it may not account for the anti-reconstruction of scoping in the case of NPI-QP interaction. To explain this phenomenon, it needs an additional assumption concerning the unavailability of scoping the low copy.

At least, concerning the scope interpretation of scrambled quantifiers in Korean, we do not assume a copy theory of movement. We suggest that scope ambiguity in clause-internal scrambling results from the availability of two operations. Wide scope interpretation of a scrambled quantifier results from the availability of base-generation in the sentence-initial position, while the narrow scope of a scrambled quantifier is obtained by lowering the TP-adjoined quantifier back to its source position at LF.

Thus, the scrambled quantifier *manhun salam-ul* 'many people' can have scope over or under *nwukwunka-ka* 'someone' in (29).

(29) Manhun salam-ul     nwukwunka-ka   cohahanta.
     many     people-Acc  someone-Nom  like
     'Someone likes many people.' (someone> <many people)

When the quantifier *manhun salam-ul* is base-generated in the edge (perhaps in Spec-Top), it is interpreted in its surface position. Accordingly, it yields a wide-scope interpretation.[18] In contrast, when *manhun salam-ul* is TP-adjoined via

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18) A reviewer raises the following questions: what prevents a base-generated nominal from movement to a higher clause? Is there any reason to believe that such a topic-element cannot move/scramble to a higher clause? If it were possible to move further up to the top of the main clause, it brings another problem: since a base-generated one is interpreted specifically, (regardless of the radical reconstruction) the widest scope reading could be freely allowed even in the case of long-distance scrambling.

movement, it displays an undoing property at LF and is interpreted in its base position. Consequently, it gives rise to a narrow scope interpretation.

We suggest that clause-external scrambling is always derived by a movement that ends up with TP adjunction. We have to note that a base-generated phrase and its follow-up clause containing coreferent pro in clause-internal scrambling make a "topic-comment"-like structure characterized by an aboutness condition. In addition, the topic-comment structure meeting an aboutness condition is more or less similar to subject-predicate relations, so the option is not possible between an embedded clause object and the matrix TP. Then, the clause-externally scrambled quantifier is not base-generated in the matrix clause and it occurs in a sentence-initial position by movement. Hence the clause-externally scrambled phrase undergoes lowering at LF and is interpreted in its base position. Hence, it always exhibits a narrow scope interpretation, as shown in (30).[19]

(30) Manhun salam-ul nwukwunka-ka John-i piphanhayssta-ko
many people-Acc someone-Nom J.-Nom criticized-C
sayngkakhanta.
think

---

Rizzi (2006, p. 113) suggests that a *wh*-phrase in an embedded question can be contrastively focused in its criterial position, in the embedded C system, but that it cannot move to the left periphery of the main clause as the contrastive focus is compatible with a *wh*-phrase. In a similar line of reasoning, Gallego (2009, p. 48) suggests that deviance arises whenever an XP is assigned more than one interpretation of the same type. For example, when an XP is assigned more than topic interpretation, deviance occurs. Gellego's (2009) idea is based on Boeckx's (2003) principle of unambiguous chain, as shown in (i).

(i) Chains must be defined unambiguously                   (Boeckx, 2003, p. 13)

(i) is an interface condition that can arguably be subsumed under Chomsky's (1986) Principle of Full Interpretation. In this line of reasoning, we suggest that a base-generated nominal satisfying an aboutness condition cannot move to a higher clause.

19) With respect to the scope interpretation, a reviewer points out the possibility like (i).

(i) [ ⋯ $QP_1$ ⋯⋯ [$_{CP}$ QP-scrambled$_2$ [$_{TP}$ $QP_3$ ⋯.. pro$_2$]]]

The reviewer indicates that the analysis advanced here may predict that in the case like (i), the QP-scrambled$_2$ should have the widest scope reading due to its specificity. This is also interpreted as saying that once QP-scrambled$_2$ is interpreted as it is scoped over $QP_3$, automatically it should have a wider scope than $QP_1$. Hence, concerning the scope interpretation, QP-scrambled$_2$ > $QP_1$ > $QP_3$ can be obtained.
We have to note that in (i), QP-scrambled$_2$ is a base-generated topic. We suggest that topic-comment structure meeting an aboutness condition does not occur in the embedded position. A similar phenomenon is observed with Left Dislocation in English. In this view, the structure like (i) is not made. Thus, the reviewer's prediction is not borne out.

'Someone thinks that John criticized many people.' (someone > many people)
(Lee, 2010, p. 28; Sohn, 1995, p. 188)

In (30), the scrambled quantifier *manhun salam-ul* 'many people' always has scope under *nwukwunka-ka* 'someone-Nom'. The absence of wide scope interpretation of *manhun salam-ul* 'many people' results from lowering of the scrambled quantifiers.

Clause-internal scrambling, on the other hand, can yield the widest scope reading of the scrambled quantifier since it has an option to be base-generated clause-initially, and can be interpreted at its surface position.

### 3.2. Scope symmetries

This section examines scope symmetries between clause-internal scrambling and clause-external scrambling. Concerning the QP over negation scope interaction, the two types of scrambling seem to uniformly show anti-reconstruction effects, as shown in (31-32).

(31) a. Amwuto manhun salam-ul    mannaci anhassta.
        anyone  many   people-Acc  meet    not.Dec
        'No one met many people.'
        (not>many,*many>not)                         (Sohn, 1995, p. 90)
     b. Manhun salam-ul    amwuto mannaci anhassta.
        many   people-Acc anyone meet    not.Dec
        'There are many people who no one met.'
        (many>not, *not>many)                        (Sohn, 1995, p. 90)

(32) a. Amwuto Tom-i   manhun salam-ul    piphanhayssta-ko
        anyone T.-Nom many   people-Acc criticized-C
        mitci      anhnunta.
        believe  not.Dec
        'No one believes that Tom criticized many people.'
        (not>many,*many>not)                         (Sohn, 1995, p. 199)
     b. Manhun salam-ul$_i$    amwuto Tom-i    t$_i$ piphanhayssta-ko
        many   people-Acc anyone T.-Nom    criticized-C
        mitci      anhnunta.
        believe  not.Dec

'No one believes that Tom criticized many people.'
(many>not, *not>many)                              (Sohn, 1995, p. 199)

In (31a), negation takes wide scope over the QP whereas in (31b), the scrambled QP takes wide scope. Given that the clause-internally scrambled QP can induce a scope ambiguity (due to alternative derivations), the absence of ambiguity in (31b) begs an explanation. Interestingly, in parallel with the clause-internal scrambling, the clause-external scrambling of a QP also yields only wide scope interpretation in a similar context. In (32a), *manhun salam-ul* 'many people-Acc' does not take scope over the matrix negation. Note further that in (32b), where *manhun salam-ul* 'many people-Acc' undergoes the clause-external scrambling, the scrambled QP takes wide scope reading over the matrix negation. The scope fact in (32b) indicates that not all instances of clause-external scrambling are undone. This is a puzzle to resolve under the analysis advanced here.

In accounting for the scope fact in (31-32), we have to note that as reported by Sohn (1995, p. 151, pp. 199-200), when *manhun* 'many' undergoes scrambling to sentence-initial position (over an NPI and negation), it must be interpreted as a specific group whose cardinality is many. This generalization holds in both clause-external and clause-internal scrambling, as shown in (31b) and (32b). This reminds us of Ebert & Endriss's (2004) analysis of indefinite quantifiers in German. They suggest that indefinites in German that have a specific interpretation can scope out of syntactic islands and the quantifiers are regarded as topics. In (31b) and (32b), however, the movement of quantifiers may violate a syntactic constraint like Relativized Minimality.[20]

(33) Relativized Minimality (version suggested by Boeckx, 2001, p. 531)
    Two positions $\alpha$ and $\beta$ can relate to one another (in the sense 'raising' or 'lowering') if one (say $\alpha$) c-commands the other ($\beta$) and there is no position $\gamma$ of the same type as ($\alpha$, $\beta$), and $\gamma$ also c-commands $\beta$.

We suggest that the particular form of Relativized Minimality (RM) given in (33)

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[20] A reviewer wonders why our analysis does not resort to the lower copy instead of lowering. Under the analysis advanced here, we assume a derivation version of RM. If we resort to a representational version of RM, which is close to the original version suggested by Rizzi (1990) and the lower copy selection is barred in (31b) and (32b), our analysis and its copy-theory-based alternative will be near-terminological variance. We leave the further investigation of a copy selection analysis combined with RM for future research.

applies also at LF in Korean. Notice that in (31b) and (32b), when *manhun salam-ul* 'many people-Acc' undergoes movement, *amwuto* 'anyone' intervenes. One might raise the following question: Why doesn't an overt movement of *manhun salam-ul* 'many people-Acc' violate RM? Note that in the definition of (33), an intervener is the same type as ($\alpha$, $\beta$). Given that scrambling is neither scope-taking movement nor case-licensed movement, there is no intervener in the TP-adjoined movement. Hence, the TP-adjoined movement is legitimate whether *amwuto* 'anyone' occupies T-Spec or Neg-Spec.

In contrast, when the scrambled sentence-initial quantifier is lowered at LF for scope, Neg-Spec functions as an intervener and the movement would violate RM in (33).[21] Hence, the derivation is blocked.[22] As a last resort to obtain an interpretation at LF, the scrambled sentence-initial quantifier remains and is interpreted *in situ*. Accordingly, the wide scope reading is forced in both clause-internal and clause-external scrambling. At this point, the following question arises: Why doesn't quantifier lowering of (34) and (35) violate RM?

(34) Manhun salam-ul   nwukwunka-ka   cohahanta.
　　　many people-Acc   someone-Nom      like
　　　'Someone likes many people.' (someone> <many people)

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21) When lowering is blocked, the scrambled quantifier takes only wide scope. This reminds us of Rizzi's (1990) proposal for D-linked *wh*-phrase extraction from a *wh*-clause. *Wh*-phrase extraction from a *wh*-island is generally barred, but D-linked argumental *wh*-phrases are marginally extractable in this environment. Rizzi (1990) proposes that the D-linked argumental *wh*-phrases can be related to their traces through a mechanism different from ordinary chain formation. D-linked argumental *wh*-phrases can exploit binding mechanisms. Likewise, in (32b), the scrambled phrase is interpreted in a way different from the ordinary interpretive mechanism. Especially, in the case of clause-external scrambling, the quantifier is interpreted in a surface position as a last resort if lowering is impossible.

22) The scope facts in (31b) and (32b) remind us of those in English A-movement, as in (i).
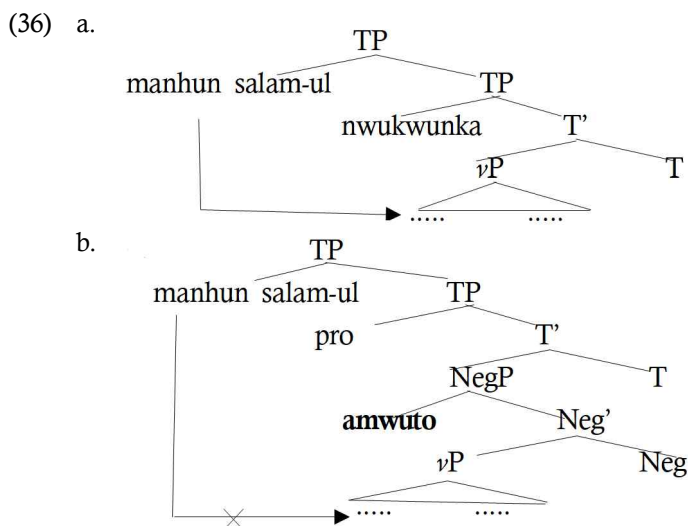
(i) a. Everyone seems not to be there yet.  ($\forall$> not, *not>$\forall$)
　　b. Someone hasn't arrived yet.        ($\exists$>not, *not>$\exists$ mechanisms)

In (ia), *everyone* undergoes a movement from the subject position of the embedded clause to the subject position of the matrix clause across *not*. In (ib), *someone* undergoes a movement from the VP–internal subject position to the Spec-T across *hasn't*. In both cases, the moved quantifiers take scope over negation, and the narrow scope interpretation of the moved quantifiers is not allowed. Boeckx (2001) suggests that overt raising of *everyone* and *someone* does not violate RM but that LF lowering of them does. Here, we have to note that when *everyone* and *someone* undergo overt raising, the Spec-Neg is not the same type with their moved position. However, when they undergo lowering, the movement is a scope-taking movement and the Spec-Neg is the same type as the quantifier-lowered position. Boeckx suggests that the Spec-Neg functions as an intervener, so quantifier lowering is blocked.

(35) Manhun  salam-ul     nwukwunka-ka  John-i     piphanhayssta-ko
    many     people-Acc   someone-Nom   J.-Nom    criticized-C
    sayngkakhanta.
    think
    'Someone thinks that John criticized many people.'
    (someone > many people) (Sohn, 1995, p. 188; Lee, 2010, p. 28)

In (34-35), the scrambled quantifier *manhun salam-ul* 'many people-Acc' can take scope under *nwukwunka-ka* 'someone-Nom'. It seems that the lowering of *manhun salam-ul* is possible in (34-35).

To understand the difference, consider the structural difference, as shown in (36). We assume that (34) and (35) have the structure like (36a) and that (31b) and (32b) have the structure like (36b).[23]

(36)  a.



      b.



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23) In (36b), pro is construed with *amwuto* 'anyone'. Pro occurs in the canonical subject position and *amwuto* occurs in the NPI-licensed position. A similar analysis is advanced by Kawamshima & Kitahara (1992, pp. 6-7), as shown in (i).

(i) pro daremo kuruma-o kawanakatta.
      anyone car-Acc    bought.not
    '(Lit) Anyone didn't buy a car'

According to Kawamshima & Kitahara (1992), pro occurs in the canonical subject position and *amwuto* occurs in the Spec-Neg.

When *manhun salam-ul* undergoes lowering, *nwukwuna* in (36a) is not an intervener since they mutually c-command each other. Thus, quantifier lowering in (36a) does not violate RM as defined in (33), and it is possible at LF. However, *amwuto* in (36b) is an intervener since *manhun salam-ul* c-commands it, and not vice versa, so quantifier lowering is impossible at LF due to RM violation following (33).

In sum, the wide scope interpretation of *manhun salam-ul* 'many people-Acc' in (31b) and (32b) results from a ban on lowering at LF for the scrambled QPs due to RM. Note that this option is not available with an element that should undergo lowering at LF. For example, the ill-formedness of (37) constitutes evidence for the analysis advanced here.

(37) *Mwues-ul$_i$ amwuto [John-i t$_i$ sass-nunci] mwutci-anh-ass-ta.
　　 What-Acc anyone　J.-Nom　bought-Q　ask-Neg-Pst-Dec
　　 '(lit) Anyone did not ask what John bought.'　　(Sohn, 1994, p. 255)
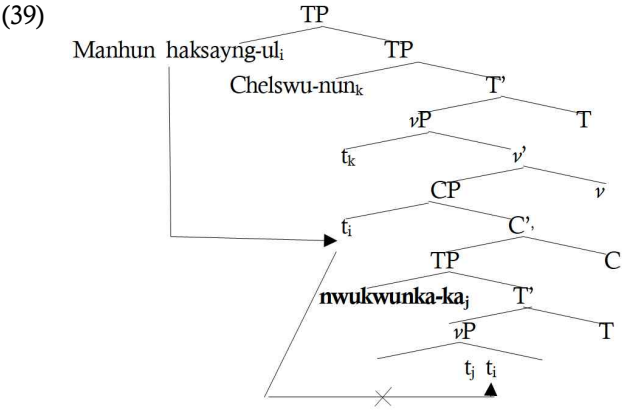
In (37), *mwues-ul* 'what-Acc' should undergo LF-lowering to get a proper *wh*-reading (with an agreeing Q in the embedded C), which would violate RM. Hence, (37) is ruled out as a failure of Q-agreement on the scrambled *wh*-phrase.

One might raise a question about the scope ambiguity of (38).[24]

(38) Manhun haksayng-ul$_i$ Chelswu-nun [nwukwunka-ka t$_i$
　　 many　　student-Acc C.-Top　　someone-Nom
　　 mannassta-ko sayngkakhanta].
　　 meet-C　　think
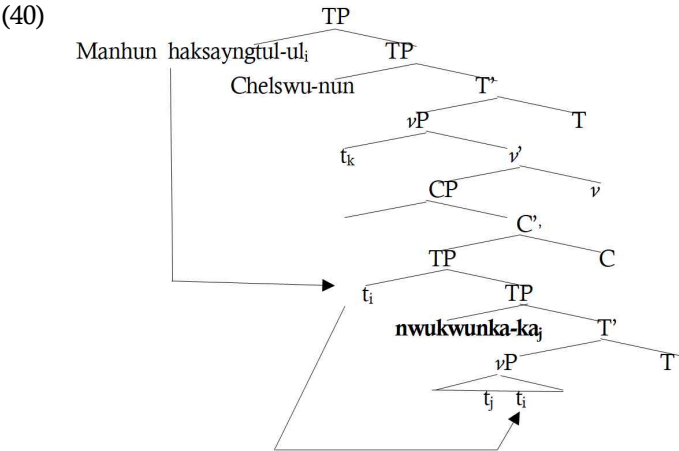　　 'Chelswu thinks that someone met many students.'
　　 (someone> <many students)

We first agree with the reviewer's judgment that (38) yields a scope ambiguity unlike (35). The analysis advanced here shows that the scope ambiguity of (38) results from two distinct structural derivations. The first possibility is that *manhun haksayng-ul* 'many students-Acc' moves to the topmost position in the matrix clause through [Spec CP] of the embedded clause, as shown in (39).

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24) We are grateful to an anonymous reviewer for pointing this out.

(39)



In (39), *manhun haksayng-ul* 'many student-Acc' should undergo lowering to [Spec CP] in the embedded clause at LF. However, it cannot undergo further lowering to vP because *nwukwunka-ka* 'someone-Nom' intervenes. Such lowering would violate RM. Hence, *manhun haksayng-ul* 'many student-Acc' is interpreted at Spec-C in the embedded clause and has scope over the subject *nwukwunka-ka* 'someone-Nom'.

The second possibility is that *manhun haksayng-ul* 'many students-Acc' moves to the topmost position in the matrix clause through a TP adjoined position of the embedded clause, as shown in (40).

(40)



In (40), *manhun haksayngtul-ul* 'many students-Acc' undergoes lowering into vP at

LF. Note that *Nwukwuna-ka* 'someone-Nom' in (40) is no longer an intervener since they mutually c-command each other. In this case, *manhun haksayngtul-ul* 'many student-Acc' is interpreted inside the vP of the embedded clause and has scope under *nwukwunka-ka* 'someone-Nom'. Accordingly, the scope ambiguity of (38) results from two distinct derivational structures like (39) and (40).[25]

Kim (2003, p. 7) further reports that scrambling does not obey RM, as shown below (Boškvoić & Takahashi, 1998, p. 359).

(41) Ku chayk-ul John-i Mary-ka illkess-nunci kwungkumhayhanta.
　　 the book-Acc J.-Nom M.-Nom read-whether want.to.know
　　 'The book, John wants to know [whether Mary read].' (Wh-island)

Under the analysis advanced here, (41) does not involve any RM violation in the first place since the TP-adjoined movement of *ku chayk-ul* can cross over [+Q] C *nunci-* 'whether' or over the Spec-Q. The example like (41) is immune to the RM violation since the TP adjoined movement is not regarded as an operator movement or a scope-taking movement.

# 4. Conclusion

We have shown that binding puzzles in scrambling constructions in Korean can be accounted for by considering a derivational history. In particular, symmetrical

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25) The scope ambiguity of the following example noted by an anonymous reviewer can also be accounted for in a way parallel to that of (38).

　(i) Chelswu-nun [manhun haksayng-ul$_i$ nwukwunka-ka t$_i$ mannassta-ko sayngkakhanta].
　　　C.-Top　　　　many　student-Acc someone-Nom　　meet-C　　 think
　　　'Chelswu thinks that someone met many students.'
　　　(someone> <many students)

　The first possibility is that *manhun haksayng-ul* 'many students-Acc' moves to [Spec CP] of the embedded clause. In a similar way to (39), it cannot undergo lowering to VP at LF because *nwukwunka-ka* 'someone-Nom' intervenes; that is, such lowering violates RM. Hence, *manhun haksayng-ul* 'many student-Acc' is interpreted at Spec-C in the embedded clause and has scope over *nwukwunka-ka* 'someone-Nom'. The second possibility is that *manhun haksayng-ul* 'many students-Acc' moves to a TP adjoined position of the embedded clause. Similarly to (40), *manhun haksayngtul-ul* 'many students-Acc' undergoes lowering to VP at LF. Here *nwukwuna-ka* 'someone-Nom' is no longer an intervener since they mutually c-command each other. Then, *manhun haksayngtul-ul* 'many student-Acc' is interpreted inside the VP of the embedded clause and has scope under *nwukwunka-ka* 'someone-Nom'.

facts in the two types of scrambling in Korean can be captured because the two constructions can be derived by a (TP-adjunction) movement. Further, speakers' variation concerning Condition C connectivity results from the availability of (topic-comment) base-generation structure in clause-internal scrambling. Asymmetrical facts related to scope are further observed: Scrambled QPs take narrow scope only in clause-external scrambling due to the obligatory lowering of TP-adjoined quantifiers at LF. We also suggest that symmetric scope facts related to the NPI-QP interaction result from the ban on Relativized Minimality violation at LF.

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