

# Edges in Syntax and Scope/Binding in Fragments in Korean

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## Abstract

Scoping/binding asymmetries in Korean fragments seem to be problematic in Merchant's (2004) ellipsis analysis of fragments. However, understanding the typology of edges in syntax along with reinterpretation of interface conditions at PF provides an elegant account for the apparent puzzles. We propose that two types of edges have different interface properties and semantic consequences: edge-C is an interface to discourse-scope domain, while edge- $\nu$  is not. We assume that movement to edge-C doesn't allow reconstruction for scope purposes unlike movement to edge- $\nu$  that exhibits typical reconstruction effects. We also note that unmotivated movement to edge- $\nu$  can only occur in ellipsis contexts since it can be repaired by PF-deletion, and hence scope/binding asymmetries follow. We further observe that scrambling in Korean is a non-unitary operation, and propose that the seemingly scrambling phenomena can be reanalyzed either as focus-movement or adjunction operation, and only the latter operation exhibits obligatory (radical) reconstruction.

## Introduction

The term *Reconstruction* refers to syntactic contexts where a displaced element acts as if it had never been displaced. Under the copy theory of movement, reconstruction effects can be naturally captured because copies left by movements play important roles in interpretation. Some scope facts in Hungarian, however, show that a certain movement doesn't show reconstruction effects. Hungarian has been known to use surface linear order in determining scope (Brody 1990, Kiss 1981; 1987 and others).

- (1) Minden filmet kevés ember nézett meg. (every>few only)  
Every film-Acc few man-Nom viewed PRT  
'Few men viewed every film.' (Brody & Szabolcsi 2003:21)

If *minden filmet* 'every film' moves from VP-internal position to sentence-initial position, it leaves a copy inside VP, as shown in (2).

- (2) [Minden filmet]<sub>i</sub> kevés ember [Minden filmet]<sub>i</sub> nézett meg.

Since only *every>few* reading is possible, the copy in a lower position seems to be inactive in determining scope.<sup>1</sup> What is going on here?

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<sup>1</sup> Some scope facts in English also show that a certain movement doesn't show reconstruction

We suggest that English locative inversion and Hungarian results from a specific property of a discourse-related movement, namely, focus movement. We further propose that focus-moved phrases are residing in edge-C, namely, Spec-C, and they do not allow reconstruction. Conceptually, the anti-reconstruction property of focus-moved phrases seems to correlate with the garden-variety of discourse-scope. Note that the sole purposes of focus-movements seem to be related to scoping. If so, it is implausible to reconstruct the focused phrases into the original positions to take the original scope (then, the whole purpose of movements becomes vacuous, and it runs counter to economy considerations).

Note further that the absence of reconstruction in the case of movement to edge-C is observed in *wh*-topicalization in Chinese (Wu 1999: 88). Consider the contrast between (3) and (4):

- (3) meigeren dou mai-le shenme?  
 everyone all buy what  
 (a) For every *x* for which *y*, *x* bought *y*?  
 (b) For which *y*, for every *x*, *x* bought *y*?
- (4) shenme<sub>i</sub> meigeren dou mai-le t<sub>i</sub>?  
 what everyone all buy  
 (a)\*For every *x* for which *y*, *x* bought *y*?  
 (b) For which *y*, for every *x*, *x* bought *y*?

As shown in (4), *wh*-topicalization in Chinese induces only wide scope reading of the *wh*-phrase. Thus, Chinese *wh*-topicalization seems to pattern with English/Hungarian focus-movement.

Further, Cho & Zhou (2002) observe that ATB-scrambling of *wh*-phrases in Korean (and Japanese) also exhibits anti-reconstruction effects:

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effects (Kuno 1971).

- (i) a. **On some stage** stood every actress.                   (∃ > ∀)  
 b. **Some actress** stood on every stage.                   (∃ > ∀, ∀ > ∃)

As shown in (ia), in English locative inversion, scope freezing occurs and inverse scope reading is not possible in contrast to the standard transitive construction shown in (ib) that exhibits typical scope ambiguity. Given that *on some stage* in (ia) is derived by movement, it leaves a copy in its base-generated position, as shown in (ii).

- (ii) [On some stage]<sub>i</sub> stood every stage [on some stage]<sub>i</sub>

If the copy in (ii) is active in determining scope, as the copy theory of movement predicts, inverse scope should be possible, contrary to fact. So, the puzzle is why the copy left by locative inversion doesn't enter into scoping relations. This contrast is discussed in-depth in Nevins & Anand (2003) and Nevins (2004). They advance that scope difference in (i) is due to EPP-only movement of *on some stage* in (ia) vs. feature-checking movement of *some actress* in (ib). They propose that EPP-only movement doesn't reconstruct for scope purposes.

- (5) **Enu salam-ul<sub>i</sub>** John-i t<sub>i</sub> salangha-ko Mary-ka t<sub>i</sub> miweha-ni?  
 which person-Acc John-Nom love-and Mary-Nom hate-Q  
 ‘Lit. Which person did John love and Mary hate?’

Cho & Zhou indicate that (5) only yields reading (6a), but not (6b):

- (6) a. which person x, John loves x and Mary hates x?  
 b. which person x, John loves x and which person y, Mary hates y?

They suggest that ATB reading (6a) is forced since dislocated-WH in (5) doesn’t undergo reconstruction. ATB-movement in (5) seems to be another instance of movement to edge-C whose effect is related to discourse (but see Cho & Zhou 2002 for an alternative possibility). Based on the above facts in Chinese, English, Hungarian, and Korean, we tentatively conclude that topic/focus movements to edge-C do not reconstruct for scope purposes.<sup>2</sup>

Given this much background on anti-reconstruction possibilities, this paper is concerned with various scope facts that are unique to fragmentary utterances in Korean. We will explore the absence or presence of scope rigidity in fragments, which, we hope, further illuminates the tie between scope reconstruction puzzles and landing sites of movement.

Our proposal is based on the assumption that two types of “edges” in syntax have different interface properties and semantic consequences: Edge-C, i.e. Spec-C is an interface to discourse-scope domain (surface semantics such as focus, topics, presupposition, frame) while edge-*v*, namely, Spec-*v* is not.<sup>3</sup> We assume that movements to edge-C do not allow scope reconstruction in contrast to movements to edge-*v* which exhibit typical reconstruction effects.<sup>4 5</sup> Given that

<sup>2</sup> It is, however, reported that long distance scrambling in Japanese, and D-linked *wh*-phrases in general exhibit “radical reconstruction” properties, as observed in Boeckx & Grohmann (2004). In this paper we will claim that pure scrambling (unlike focus movement) is an adjunction operation that undergoes obligatory reconstruction. Thus, radical reconstruction property that Boeckx & Grohmann (2004) have observed for Japanese long distance scrambling can be partially accommodated. However, radical reconstruction property of D-linked *wh*-phrases in other languages, if real, requires further investigation.

<sup>3</sup> Edge-*v* might be an interface to argument structure (deep semantics such as verbal aspect, voice, thematic properties). It is not our direct concern here the exact nature of this domain. For our purposes, suffice it to say that materials that move to edge-*v* can be freely reconstructed as opposed to edge-C for scoping.

<sup>4</sup> Edge-T plays no role here since we assume, following Chomsky (2005), that TP is not a phase. In other words, TP unit is not legible for independent spell-out and interpretation.

<sup>5</sup> As pointed out by an anonymous reviewer, in some cases, movements to edge-C seem to allow scope reconstruction, as shown in (i).

- (i) Who does everyone like?  
 a. For which x, for every y, y likes x?



question and the answer: namely, although the question is ambiguous, the answer doesn't have to be.<sup>6</sup> This may raise a puzzle under a standard ellipsis analysis of fragments. The ellipsis analysis predicts quantifier scope in fragments patterns with one in their non-elliptical correlates. Merchant (2004), for example, analyzes fragmentary utterances as movement of remnant fragments followed by PF-deletion of the full-fledged sentential structures. Under this analysis, quantifier scope is predicted to be similar in both fragments and their non-elliptical correlates.<sup>7</sup> This parallelism, however, is not strictly observed in fragments in Korean, as shown in (9). Park (2003) also claims that scope possibilities are parallel in antecedent and ellipsis clauses. However, given that an antecedent clause of fragment (9) is (7), Park's (2003) prediction is not borne out.<sup>8</sup> This puzzle seems to be related to the following issue: what is the structure of non-elliptical correlate like prior to ellipsis in (9)?

Suppose the surface structure in (10) is derived in the following fashion: *Motwu ta* 'all' undergoes movement to Spec-C and elide the following TP on a par with ellipsis analyses in Kim (1997) and Park (2005).<sup>9</sup>

(10) CP

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<sup>6</sup> An anonymous reviewer suggests:

"The impossibility of neg>all in (9) could be explained in terms of pragmatics. If (8) is an all>neg question, it means "Is everyone such that Mary *didn't* meet him/her?" On the other hand, if it is a neg>all question, it is restated as "Is it *not* the case that Mary met everyone?" In the former, the focus of the speaker's attention is "how many people are such that Mary didn't meet him/her," and in the latter, the speaker wants to know "whether the proposition 'Mary met everyone' is true or not." If you repeat "all" in the answer to the question, you put emphasis on the fact that "yes, it was *everyone*." This is clearly more felicitous after the all>neg question. Therefore the neg>all interpretation is impossible in this fragment answer." [Emphases are original.]

However, if it were true, the neg>all reading would be impossible even in the full sentential answer, either. As soon will be clarified, the sentential counterpart of (9), which will be (11) in the text, is surprisingly ambiguous. Hence, pragmatics doesn't seem to be the sole factor that disambiguates the scope reading in (9).

<sup>7</sup> The following example in Merchant (2004: 681) supports silent clausal analysis of fragments.

(i) A: How many diplomats did every translator greet?

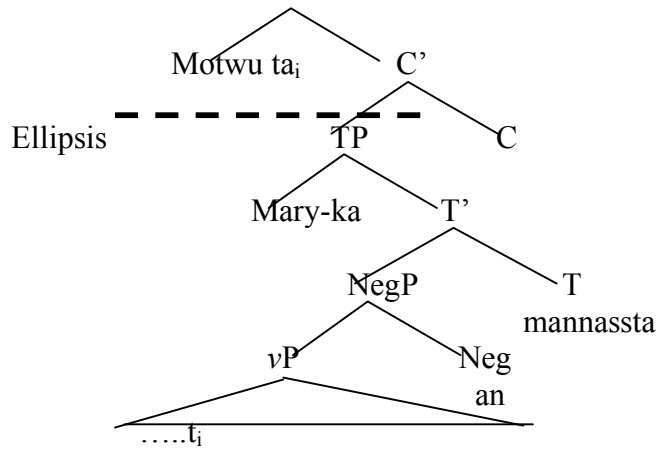
B: a. Three.

b. Every translator greeted three (diplomats).

In both the fragment and full clause answers in (iB), *three* can take scope over or under *every*. Thus, at first blush, PF-deletion analysis of fragment answers gains another support from scoping phenomena in English.

<sup>8</sup> Unambiguity of (9) may be a serious problem for the non-sentential analysis such as Jackendoff & Culicover (2005). Under this analysis, the fragment's interpretation is supplied not through its own syntactic structure but via direct correspondence with the meaning of the antecedent sentence. Hence, the interpretation discrepancy between (8) and (9) is also unexpected under this analysis.

<sup>9</sup> We sometimes illustrate trace notations instead of more articulated copies for most representations in the text just for convenience.



Then, the question is whether the underlying structure of (10) prior to TP-ellipsis is also unambiguous. The judgment is murky, but it seems at least some speakers including authors get ambiguity in the following sentence as a reply to (8):

- (11) Ung, Motwu ta Mary-ka an mannassta. ( $\forall > \text{neg}$ ,  $\text{neg} > \forall$ )  
 Yes All all Mary-Nom not met  
 ‘Yes, Mary didn’t meet all.’ or ‘Yes, Mary didn’t meet anybody.’

We suggest that the source of scope ambiguity attested in (11) hinges on two possible syntactic derivations. That is, the fronted QP in (11) is derived either via Scrambling or Focus-movement.<sup>10</sup> We further assume that scrambled phrases adjoin to XP, here TP.<sup>11</sup> Focus-movement, by contrast, carries focused XP to Spec-C. We further claim that adjoined phrases must obligatorily undergo reconstruction, and hence only scrambled phrases exhibit reconstruction effects: therefore, narrow scope reading of the scrambled QP is forced. Focused QP, on the other hand, should remain in Spec-C at LF since it undergoes scope-taking

<sup>10</sup> We exclude the possibility of L(ef) D(islocation) here since QPs in general semantically resist LD. According to Alexiadou (2005: 679), in Italian, bare quantificational elements don’t allow LD, while they easily allow focalization.

(i) a. \*Nessuno lo ho visto.  
 Nobody him have seen  
 b. NESSUNO ho visto.

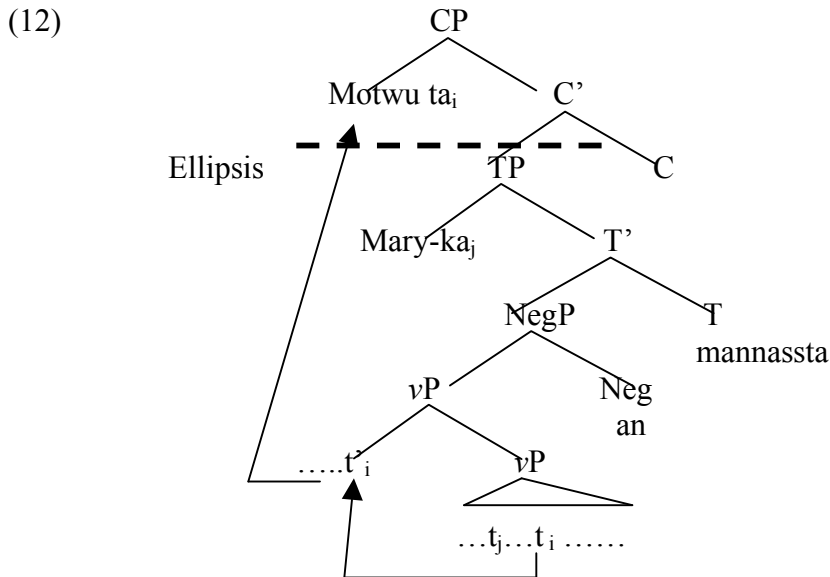
The negative quantifier can’t undergo LD, as shown in (ia), while it can be focalized, as shown in (ib). Ahn & Cho (2006a) observe that LDED phrases in Korean are specific or D-linked, and hence they are generally incompatible with QPs except for *wh*-phrases (if QPs are interpreted as specific, we assume that they no longer bear quantificational forces).

<sup>11</sup> Saito (1985; 1989), Fukui (1986), and Kuroda (1988) assume that the TP-adjoined position is the landing site of scrambling. Given that scrambling is always to a position without any selectional relation, it seems to be a natural assumption.

movement, as discussed in section 1. Thus, (11) is ambiguous for some speakers since for these speakers, the fronted QP in (11) undergoes either scrambling or focus movement.

Now, consider (9), again. The fragment QP, by contrast, cannot be an instance of scrambled QPs, namely, a QP adjoined to TP, because we cannot elide a “segment” TP which is not a proper target of deletion. Note that the terms that can undergo ellipsis must be minimally a “category.” Hence, the remnant QP must sit in Spec-C. As a result, the fragment QP cannot undergo reconstruction, and hence the widest scope reading of the fronted QP is predicted on a par with focus/topic movements in other languages such as Hungarian and Chinese.

Note, however, that there is an alternative derivation for (9) in which *motwuta* ‘all’ goes through edge-*v* (Spec-*v*) to observe the Phase Impenetrability Condition (PIC) (Chomsky 2001, Ko 2007):<sup>12</sup>



In (12),  $t_i$  is bound by  $t'_i$  in edge-*v*. Under the assumption that in the case of movements to edge-*v*, the copy in the source position participates in scope determination, the *nrg*>all reading is expected to be obtained, contrary to fact.

Several possibilities can be considered to account for the anti-reconstruction effect, namely, the absence of *neg*>all reading in (9).

Possibility #1 is to assume that the edge-*v* is an A-position in Korean, and that A-movement never reconstructs for scope (see Lasnik 1998; 1999 and Cho &

<sup>12</sup> For our purposes the following Scope Principle is assumed (cf. Aoun & Li 1989, Hoji 1985, Huang 1982):

(i)  $QP_1$  may have scope over  $QP_2$  if  $QP_1$  c-commands  $QP_2$  or a trace of  $QP_2$ .

Zhou 2002).<sup>13</sup> Alternatively, note that  $\langle \text{motwu } t', t \rangle$  is a non-uniform chain (since it is A'-A-A chain). Under Chomsky's (2005) parallel movement analysis, two chains are formed:  $\langle \text{motwu } ta, t \rangle$  and  $\langle t', t \rangle$ . Given that only the former chain involves operator-variable relations,  $\langle t', t \rangle$  chain is ignored for scoping. Further, given that the lower copy is bound by the operator in Focus position, it is also inactive for scope determination (following our crucial assumption advanced in the previous section), so the wide scope reading of *motwu ta* 'all' is predicted in (9). Either assumptions in possibility #1 seem to be problematic for theoretical grounds, and require independent evidence. Thus, we do not adopt these hypotheses here for our purposes, pending further exploration along these lines.

Possibility #2 is related to nullification of the PIC violation in elliptical context: Intermediate movement to edge-*v* to meet the PIC may not be necessary if PIC is a "representational" condition since the violation of representational condition can be repaired at PF via deletion (see Fox & Lasnik 2003, Merchant 2001, Lasnik & Boeckx 2006, Park 2004).<sup>14</sup> If the operation is unnecessary and superfluous, it must be barred upon Economy considerations. Thus, the intermediate movement to edge-*v* cannot take place in (9), and hence no reconstruction effects arise. This account, however, hinges on problematic notion of global economy, and hence may be conceptually undesirable, if Collins (1997; 2001) is right. Thus, we leave this possibility aside here.<sup>15</sup>

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<sup>13</sup> According to Lasnik (1998: 94), reconstruction never occurs in the case of A-movement. Scope interpretation of the following sentence supports his claim.

(i) Every coin is 3% likely to land heads. (every>3% only)

Thus, (i) cannot be accurately paraphrased as (ii), although the situation strongly biases the reading towards (ii).

(ii) It is 3% likely that every coin will land heads.

Lasnik (ibid.) notes that the absence of reconstruction effects in the case of A-movement (and even for A'-movement) is hardly a settled issue on both empirical and theoretical respects. He proposes that the lack of reconstruction effects in A-movement may hinge on the hypothesis that A-movement does not leave trace/copy (contra Chomsky 1995). Sportiche (2005), however, takes an alternative view for the absence of the lowering interpretation like in (i). The nature of anti-reconstruction property of A-movement is beyond the scope of this paper (see also Johnson 2004 for related discussion).

<sup>14</sup> Movement to the left edge of *phase* for escape, i.e., cyclic movement, is forced by the requirement on cyclic linearization (Fox & Pesetsky 2005). However, since deletion eliminates all contradictory linear order, one fell swoop movement crossing edge-*v* seems to be possible (and in fact, seems to be forced considering global economy).

<sup>15</sup> An anonymous reviewer points out that global economy issues may not occur here: If an ellipsis feature (Merchant 2001; 2004) is assumed, PIC effects are nullified inside a category with [E] (to undergo PF-deletion). Hence, within such a category, edge-*v* movement is prohibited. In this line of explanation, consideration on global economy is not needed. However, given that C head has an [E] feature in fragment answers, it may not be possible that before C is merged, movement to edge-*v* is prohibited. Hence, an

Possibility #3 that we are pursuing here is closely related to possibility #2. Regarding movement to edge-*v*, the former makes somewhat stronger claim than the latter does. In the case of possibility #2, we assume that movement to outer Spec of *v* cannot occur only if the PIC violation is nullified later, a look-ahead problem. In the case of possibility #3, movement to outer Spec of *v* is more restricted. Actually, it is allowed when syntactic motivation is provided and output effects such as scope alternation come into play.<sup>16</sup> In line with this reasoning, in (9), movement to edge-*v* is unmotivated neither syntactically nor semantically: Syntactically, this movement is unmotivated since this movement doesn't have any bearing on Relativized Minimality (RM) violation; Semantically, this movement doesn't alter scoping relation (with respect to the sentential scope of negation), and hence following Fox (2000), the movement is semantically vacuous, and must be blocked for economy reasons. The last point will be crucial when we consider Binding asymmetry facts in fragments in Korean, as will be discussed in section 4. In what follows, we will assume the possibility #3 concerning the status of movement to Spec-*v* in Korean.

## 2 Scope facts in Korean Fragments II: QP-QP

It is a well known fact that scope rigidity effect is observed in Korean when a QP interacts with a QP (see for example, Hoji 1985, Saito 1985, Ahn 1990, Sohn 1995).

- (13) Motun kyoswutul-i sey myeng-uy haksayngtul-ul mannassta.  
 All professor-Nom three Cl-Gen students-Acc met  
 'All professors met three students.' (all>three only)

(13) is unambiguous: it yields only distributive reading: i.e., (13) strongly favors the reading in which *all professor* has root wide scope.<sup>17</sup>

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undesirable look-ahead problem also arises here.

<sup>16</sup> Regarding the PIC, Chomsky (2005) states the following possibility: It may be that the PIC holds only for the mapping to the interface, with the effects for narrow syntax automatic.

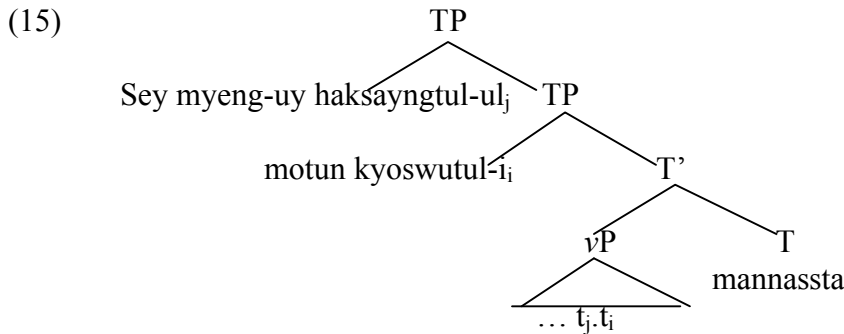
<sup>17</sup> Conflicting judgments and speaker's variation have been observed in previous literature as discussed in Han, Lidz & Musolino (2007). There seem to be at least two other groups of speakers for scope variability: Let us call them Group I, II. For Group I, collective (three>all) reading is also possible in (13) in addition to distributive (all>reading) reading. It is not, however, clear whether the collective (three>all) reading that they judge in (13) is mixed with specific reading of *three students* for these speakers (cf. Miyagawa 2001). Further, the sentence in (i) containing a scrambled object is not ambiguous for these Group I speakers.

(i) Sey myeng-uy haksayngtul-ul motun kyoswutul-i mannassta.  
 Three Cl-Gen students-Acc all professors-Nom met  
 'Three students, all professors met.' (three>all)

When scrambled, scope rigidity is relaxed, as is also observed in the previous literature. Thus, the following sentence is ambiguous.

- (14) Sey myeng-uy haksayngtul-ul motun kyoswutul-i mannassta.  
 Three Cl-Gen students-Acc all professors-Nom met  
 ‘Three students met all professors.’ (all > three, three > all)

Note that scrambled QP *sey myeng-uy haksayngtul-ul* ‘three students’ is adjoined to the TP, as shown in (15).<sup>18</sup>



Consequently, *sey myeng-uy haksayngtul* ‘three students’ can take narrow scope under *motun kyoswutul* ‘all professors’ since the adjoined QP must be

Group II speakers, on the other hand, exhibit scope rigidity for all instances of QP-QP interactions, as noted in Ahn & Cho (2005). Consider the following derivational representation for (i):

- (ii) [<sub>CP</sub> Sey myeng-uy haksayngtul-ul<sub>i</sub> [<sub>TP</sub> motun kyoswutul-i<sub>j</sub> [<sub>vP</sub> t<sub>j</sub> t<sub>i</sub> mannassta]]]

Ahn & Cho (2005) claim that in (ii), the QP in Spec-C is expected to take the widest scope since movement to Spec-C is driven only for EPP satisfaction in Korean, and the trace *t<sub>i</sub>* is not active for scope determination. Thus, *sey myeng-uy haksayngtul-ul* ‘three students’ takes scope over *motun kyoswutul-i* ‘all professors’ or its trace *t<sub>j</sub>* because the former c-commands the latter. Scope rigidity, however, seems to be more strongly attested in subject QP and Neg interaction (even for Group I speakers, too):

- (iii) Motwu-(ka) (ta) ku phati-ey an oassta. (all > neg only)  
 All-Nom all the party-at not came  
 ‘All didn’t come to the party.’

Here, the specific reading of the subject is not a possible option, and hence (iii) is clearly unambiguous for most speakers including Group I-II speakers. In this paper, for the sake of simplicity we just follow the standard (traditional) scope judgments on QP-QP interactions in Korean, as indicated in Ahn (1990) and Sohn (1995).

<sup>18</sup> Miyagawa (2001) proposes that scrambled object moves to Spec-T and the subject remains in-situ Spec-v. Subject movement to Spec-T is crucial in Ahn & Cho (2006c) to explain impossible bare subjects or Nom-deletion in Korean. See Ahn & Cho (2006c) for details.

reconstructed at LF.<sup>19</sup>

There arises, however, a new puzzle to be resolved. Scope rigidity is not observed in QP-fragments (unlike (9)).<sup>20</sup>

- (16) a. Motun kyoswutul-i elmana manhun haksayngtul-ul mannass-ni?  
every professors-Nom how many students-Acc met-Q  
'How many students did every professor meet?' (all>three, three>all)
- b. Sey myeng-uy haksayngtul-ul .  
three Cl-Gen students-Acc  
'Three students' (all>three, three>all)

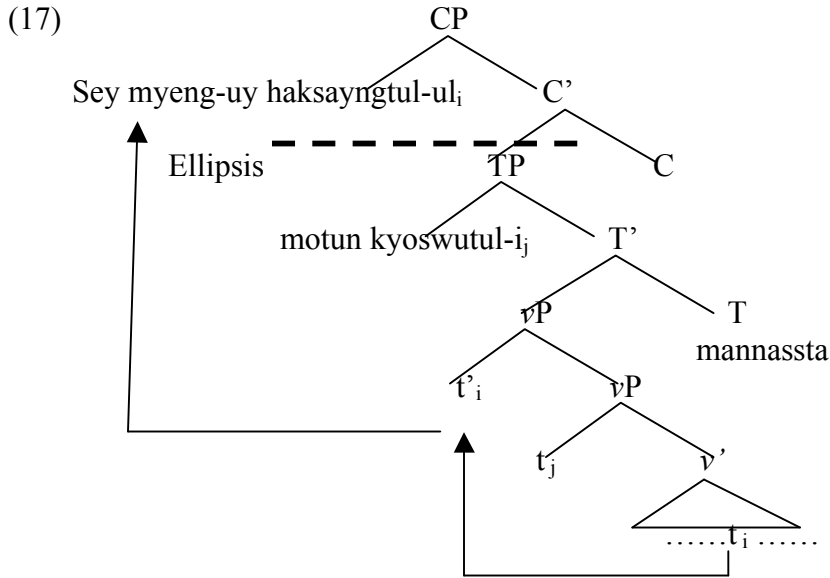
Why is the fact mentioned above a puzzle? On the face of it, it doesn't seem to be a puzzle at all since the question is ambiguous, and so is the (fragment) answer. Recall, in particular, that the non-elliptical correlate of (16b) is also ambiguous, as seen in (14). Note, however, that unlike (14) the narrow scope reading of the fronted QP in (16b) cannot be induced by scrambling configuration, namely, TP adjoined structure. As noted earlier, scrambling option is not available for the QP fragment since the target of elliptical clause cannot be a "segment" TP. Thus, the fragment QP must always undergo (focus) movement to Spec-C to be stranded by clausal ellipsis. If this is the case for the QP fragment structure, scope rigidity (i.e., only three>all reading) is expected to be obtained in (16b), contrary to fact.

We propose the following derivation for (16b):

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<sup>19</sup> Note that the collective (three>all) reading in (14) results from the focus movement of *sey myeng-uy haksayngtul* 'three students'. Hence, (14) is ambiguous depending on the choice of movement operations: i.e., scrambling or focus-movement.

<sup>20</sup> As shown in (16a), unlike the object QP as discussed in (13), the object WH can scope over the subject QP in Korean. It is unclear how we can get wide scope reading of WH in (16a), given rigidity of scope relations in Korean. One possibility is that WH in Korean has a peculiar semantic property for (optionally) taking a "widest" scope as discussed in Kim (2003). Thus, the object WH in (16a) can take canonical narrow scope based on its syntactic position, whereas its peculiar semantics optionally induces wide scope reading. In this paper, we put aside the exact nature of the peculiar semantic property of WH in Korean.



In (17), movement of *sey myeng-uy haksayngtul-ul* ‘three students’ to outer Spec- $v$  is syntactically and semantically well motivated: Syntactically, movement to outer Spec- $v$  is needed to overcome Relativized Minimality violation. In other words, the object trace and subject trace in edge- $v$  are equidistant to Spec-C, hence  $\langle \textit{sey myeng-uy haksayngtul-ul}_i, t'_i, t_i \rangle$  can be a licit chain if there exists an intermediate link in between. Semantically, movement of *sey myeng-uy haksayngtul-ul* ‘three students’ to outer Spec- $v$  may alter scoping possibilities. Hence, this movement is not semantically vacuous unlike one in (12). Recall that  $v$ P-internal QP-movement in (12) takes place under NegP, so it doesn’t alter scoping possibilities between Neg and QP. In the next section, further evidence of  $v$ P-internal movement is found in fragments in Korean in relation to Binding.

### 3 Binding Facts in Korean Fragments: Principle A and C

It is widely held that binding possibilities can be altered by movement (Mahajan 1990, Ahn et al. 1990).<sup>21</sup>

<sup>21</sup> It is unclear how we can capture binding alternation in (18) if (18b) is an instance of scrambling operations. As we noted earlier, scrambled phrases, i.e., adjoined elements, must obligatorily undergo reconstruction at LF, and hence (18b) is predicted to be ruled out as a principle A violation since the anaphor *selo* ‘each other’ is not bound at LF. Alternatively, if (18b) is an instance of a focus movement, *selo* can take an A-bar antecedent for Binding purposes. One

- (18) a. ?\*Selo-uy pwumo-ka John-kwa Mary-lul mannassta.  
 Each other-Gen parents-Nom John-and Mary-Acc met  
 ‘Each other’s parents met John and Mary.’
- b. John-kwa Mary-lul selo-uy pwumo-ka mannassta.  
 John-and Mary-Acc each other-Gen parents-Nom met  
 ‘John and Mary, Each other’s parents met.’

With the contrast in (18) in mind, consider the following:

- (19) a. Nwu-ka John-kwa Mary-lul mannas-ni?  
 Who-Nom John-and Mary-Acc met-Q  
 ‘Who met John and Mary?’
- b. Selo-uy pwumo-ka.  
 Each other-Gen parents-Nom  
 ‘Each other’s parents (met John and Mary) ’

On the face of it, the representational derivation for (19b) seems to be the following:

(20) Selo-uy pwumo-ka [~~John-kwa Mary-lul mannassta~~]

(20), then, is expected to be ruled out parallel to (18a), contrary to fact. Thus, (20) cannot be a representation for (19b).

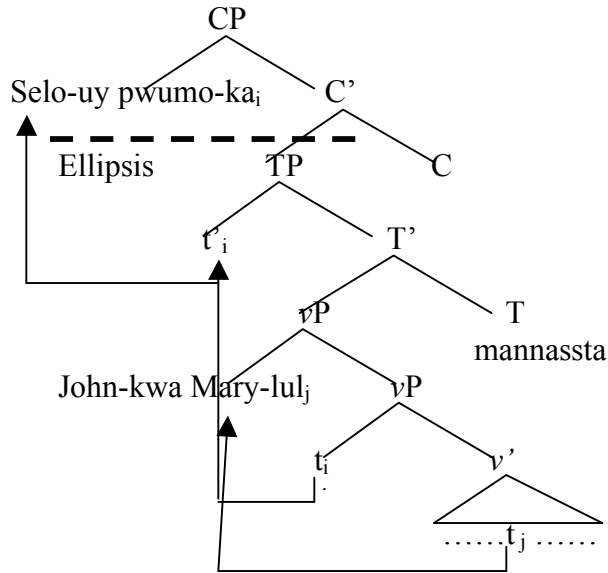
We suggest that (19b) can be derived in the following representation:<sup>22</sup>

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possibility is to treat focus movement as an A-movement for the purposes of Binding; a movement to an L-related position (see related discussion in Ahn *et al.* 1990). Alternative possibility is to separate Binding Principle A from scoping, as noted in Lasnik (1998: 96). Lasnik provides a possibility that satisfaction of Principle A may involve a formal feature, while determination of scope departs from Principle A in that it is a matter of interpretation as the interface. Thus, under this assumption, Principle A can be handled on-line (regardless of A/A’), as also indicated in Belletti & Rizzi (1988) and Saito (2003). We leave out the proper choice for future research.

<sup>22</sup> Our analysis of binding phenomenon is based on the following assumptions: (i) Binding Principle A can be satisfied at any point of derivation (Lebeaux 1994, Saito 2003), (ii) Binding Principle C is an LF condition.

(21)



(21) is, in fact, derived in the following three steps: step one is scrambling of *John-kwa Mary-lul* ‘John and Mary’ to edge-*v*; step two is focus-movement of *selo-uy pwumo-ka* ‘each other’s parents’ to edge-*C*; and finally step three is ellipsis of the TP. The first step in this derivation, namely, “*vP*-internal scrambling” of the object *John-kwa Mary-lul*, results in Principle A satisfaction because the object *John-kwa Mary-lul* binds the anaphor at the point of the derivation. Thus, the status of step one is equivalent to (18b) with respect to Binding. Note that *vP*-internal scrambling of *John-kwa Mary-lul* may be barred in non-elliptical sentences like (18a) for Economy reasons such as Fewest Steps or Shortest Derivation Requirement (Kitahara 1997).

(22) Shortest Derivation Requirement

Minimize the number of operations necessary for convergence.

Essentially, Fewest Steps or Shortest Derivation Requirement violations can be ameliorated by PF-deletion in (21), hence the contrast between (18a) and (19b) follows.<sup>23</sup>

<sup>23</sup> Under our analysis, both “Shortest Derivation Requirement (SDR)” and “Relativized Minimality (RM)” should be ameliorated by PF-movement. Given that only “representational” conditions are repairable by deletion, these conditions need to be restated

Some questions remain at this point: i) what motivates movement of *John-kwa Mary-lul* ‘John and Mary’ in (21)? It is obvious that this movement is not syntactically motivated. Semantically speaking, it yields Binding alternation, so some semantic effects occur. Now suppose *John-kwa Mary-lul* ‘John and Mary’ also (vacuously) moves in (18a) to meet Binding Principle A. This kind of movement to Spec-*v*, however, is not motivated by syntactic requirements, either, parallel to (21). Semantically speaking, it’s less clear: This kind of movement seems to be motivated by semantic requirements, namely, Principle A satisfaction. Note, however, that movement of *John-kwa Mary-lul* to the outer Spec-*v* may create an opaque domain for the subject-movement out of inner Spec-*v*: a semi-RM effect. If *John-kwa Mary-lul* moves further to the higher positions, and consequently vacates outer Spec-*v* position, it may weaken RM violation for movement from inner Spec-*v* (Note that this is, in fact, the case in (17)). The complications do not occur if the (syntactic) violations are ameliorated by PF deletion as in (21). Otherwise, syntactic violations, pending the exact nature, override semantic needs. Hence, this kind of vacuous movement is excluded in (18a) in contrast to (21).

Further, consider more surprising case of fragment binding, as observed in Ahn & Cho (2006b):

- (23) a. Nwu-ka John-kwa Mary-lul manness-ni?  
 Who-Nom John-and Mary-Acc met-Q  
 ‘Who met John and Mary?’  
 b. Selo-ka.  
 Each other-Nom  
 ‘Each other (met John and Mary).’

Note that without ellipsis, the sentence is hopeless since it violates both Principle A and C.

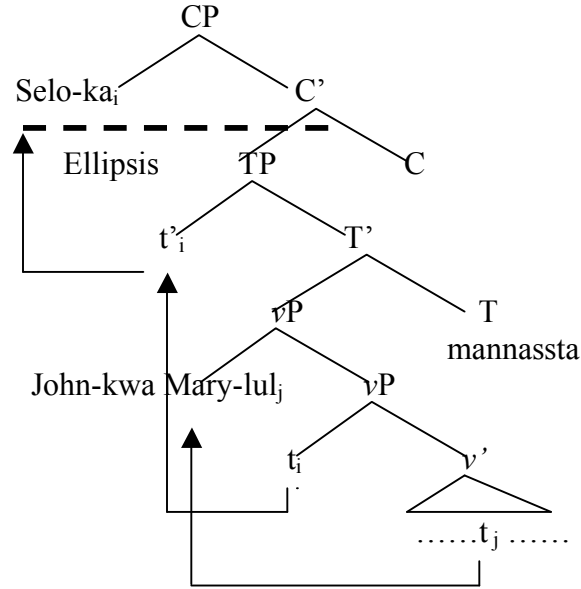
- (24) \* Selo-ka John-kwa Mary-lul mannassta.  
 Each other-Nom John-and Mary-Acc met  
 ‘Each other met John and Mary.’

We propose that (23b) can be derived in the following way:

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in representational terms. Also, these violations need to be PF-violations. An anonymous reviewer suggests that it should be technically implementable by putting a \* (which causes PF violations) on syntactic representations whenever SDR/RM is violated. We are grateful to the reviewer for this possibility.

(25)



Three points to be noted here concerning the derivational representation (25). First, Principle A can be satisfied by  $vP$ -internal scrambling of *John-kwa Mary-lul*, an account parallel to (21). Secondly, there seems to be a Principle C violation in (25): i.e., the copy  $t'_i$  left by *selo-ka* seems to bind the R-expression *John-kwa Mary-lul* prior to ellipsis. Then, another question arises as to how (25) avoids violating Principle C. The amelioration of Principle C in fragments seems to be attributed to the so-called “vehicle change” effects in elliptical contexts. Merchant (2004: 682) advances the analysis of vehicle change effects in ellipsis to fragment answers in English.<sup>24</sup>

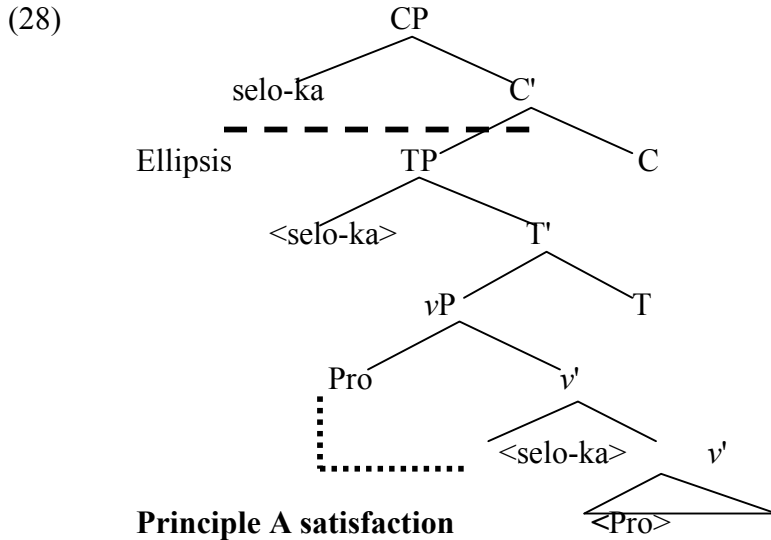
- (26) a. Who did you tell  $t$  about Bill<sub>1</sub>'s raise?  
b. Him<sub>1</sub>.  
c. \*I told him<sub>1</sub> about Bill<sub>1</sub>'s raise.

The semantic structure of elided TP in (26b) is like (27) where the correlate possessive “name” is interpreted as a “pronoun.” Hence, no Condition C violation occurs.

<sup>24</sup> Merchant (2001, 2004), in fact, attempts to derive vehicle change effects from the semantic identity condition on ellipsis licensing.

(27) I told him<sub>1</sub> about his<sub>1</sub> raise.

Similarly, we claim that the elided clause contains a [+pronominal] empty category, *Pro*, that corresponds to the R-expression *John-kwa Mary-lul* in the antecedent clause, as shown in (28).<sup>25</sup>



In (28), Binding Principle A is satisfied because *Pro* binds the copy <*selo-ka*> in Spec-*v*. Principle C violation doesn't occur because there is no R-expression in the elided site. Note that these (Binding-theoretic) alternations are not available in non-elliptical contexts like (24), and hence, the ellipsis/non-ellipsis contrast of (23b) and (24) follows.

So far, we have argued that *v*P-internal scrambling operation prior to ellipsis may alternate binding possibility for Principle A, and further vehicle change effects (or something equivalents as in Merchant 2001) in ellipsis contexts may invalidate Principle C violation in Korean (anaphoric) fragments.

#### 4 Conclusion

In this paper, we have explored scope asymmetry facts that are observed in fragmentary utterances in Korean. Scope rigidity involving negation and universal quantifier is accounted for under the assumption that landing sites of movement are closely connected to presence/absence of reconstruction. We claim that

<sup>25</sup> Huang (1989, 1991) also puts forward that the *PRO/pro* distinction is unnecessary, and he postulates only one pure pronominal empty category *Pro*, the notation of which we employ in the text.

movement to edge-C, namely, Spec-C, traps moved element in a derived position, and hence reconstruction does not take place. By contrast, movement to edge-v, which can only be invoked by syntactic motivation and justified by output semantic effects, may reconstruct for scope purposes. We have also shown that PF deletion can ameliorate certain violations of representational economy such as Shortest Derivation Requirement. Under our analysis, movement type is also crucial in accounting for scope facts. We adopt and confirm the proposal that scrambling, a semantically vacuous movement, is an adjunction operation that undergoes obligatory reconstruction. We have further observed novel binding facts in fragmentary utterances in Korean, which show that movement to edge-v may alter binding possibilities along with vehicle change effects. Consequently, our analysis of fragments in Korean lends another strong support to the move-and-delete approach to fragments advanced in Merchant (2004).

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