On Scope Asymmetries in Fragments*

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Merchant (2004) analyzes fragmentary utterances as movement of remnant fragments followed by PF-deletion of the full-fledged sentential structures. Scoping asymmetries in Korean fragments seem to be problematic in this analysis. However, reinterpretation of interface conditions at PF provides an elegant account for the apparent puzzles. We claim that interface-strategies may rescue representational violations (Merchant 2001), and phase-edge movements that are purely triggered by EPP have unique property in that they do not allow reconstruction in contrast to movements for formal feature checking. We point out that like locative inversion in English, phase-edge movement to Spec-F in Korean is not feature checking movement such as Case or phi-feature valuation. Hence, scope freezing is also observed in Korean fragments, and the apparent scope asymmetries can be explained, retaining PF-deletion approach to Korean fragments.

Key Words: fragments, PF-deletion, interface conditions, phase-edge, EPP, reconstruction, locative inversion, scope, feature valuation

1. Introduction

A fragment answer is a short answer to a question such as that in (1b). The fragment which consists of non-sentential NP in (1b) conveys the same propositional content as a fully sentential answer like (1c).

(1) a. Who did she see?
   b. John.
   c. She saw John.

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One of the important issues related to fragments is how non-sentential DPs have the parallel propositional meaning that the full sentential counterparts have.

Merchant (2004) claims that a fragmentary utterance is derived through movement of remnant fragments followed by PF-deletion of the full-fledged sentential structures. Under the analysis, (1b) has the following derivational step.1

\[
\begin{array}{c}
\text{FP} \\
[\text{DP John}]_2 \\
\text{F'} \\
\text{Ellipsis} \\
\text{F} \\
\text{TP} \\
[\text{E}] \\
\text{she saw } t_2
\end{array}
\]

In (2), the pronounced fragment DP *John moves to the specifier position of FP. The E feature on F triggers non-pronunciation of TP. Under this analysis, quantifier scope is predicted to be similar in both fragments and their non-elliptical correlates. The following data confirm the prediction, which supports Merchant's silent clausal analysis of fragments (Merchant 2004:681).

(3) 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 (3B), *three can take scope over or under *every. Thus, at first blush, the PF-deletion analysis of fragment answers gains another support from scoping phenomena in English.

Then, let us look at QP fragments in Korean as shown in (4).

(4) a. nwu-ka manhun haksayngtul-ul mannass-ni?
   Who-Nom many students.Acc met-Q
   'Who met many students?'

b. myechmyech salamtul-i.
   several people-Nom
   'Several people.'

(∃>many)

c. myechmyech salamtul-i manhun haksayngtul-ul mannassta.
   several people-Nom many students.Acc met
   'Several people met many students.'

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1 It is not our direct concern here to determine the exact nature of FP. It can be either FocusP or ForceP (cf. Rizzi 1997). We speculate, however, that it would be more close to ForceP since unlike root contexts the movement seems to end up to Spec-T in certain embedded contexts. We return to this issue in section 3.
In (4b), the QP fragment *myechmyech salamtul-i* ‘several people’ takes scope over *manhun haksayngtul-ul* ‘many students’. This may be expected (parallel to English facts given in (3)) since the subject QP also takes scope over the object QP in its full sentential counterpart as in (4c). Thus, QP fragments and their non-elliptical correlates seem to exhibit parallel scoping possibilities.

However, interestingly, the object QP fragment in (5b) shows different scope-taking behavior, compared with the same QP inside its sentential counterpart (5c).

(5) a. *myechmyech salamtul-i nwukwu-lul manmass-ni?*  
> several people-Nom who-ACC met-Q  
> ‘Who did many people meet?’

b. *manhun haksayngtul-ul.*  
> many students-ACC  
> ‘Many students.’

c. *myechmyech salamtul-i manhun haksayngtul-ul mannassta.*  
> several people-Nom many students-ACC met  
> ‘Several people met many students.’

Unlike the full sentence answer (5c), QP in the fragment answer shows scope ambiguity.²

Another full sentential counterpart of (5b) is available because scrambling occurs quite freely in Korean. A full clause answer with a scrambled QP in (6) can be compared with (5b).³

(6) *manhun haksayngtul-ul myechmyech salamtul-i mannassta.*  
> many students-ACC several people-Nom met  
> ‘Many students, several people met.’

In (6), the object QP must take scope over the subject QP. The fragment answer and its sentential counterpart still show scope discrepancy. Hence, it doesn’t seem that all the data including QP fragment support Merchant’s analysis.⁴

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² These judgments are somewhat idealized and vary among speakers. Some speakers may not get sharp contrasts as the judgment reported in the text, however, most speakers that we have consulted share our judgments.

³ There are two groups of judgments for scoping argument QPs. Group I: canonical configuration Subj QP-Obj QP like (5c) is judged unambiguous, while the scrambled Obj QP-Subj QP like (6) is interpreted as ambiguous (Hoji 1985, Saito 1985, Ahn 1990, Sohn 1995). Group II: Neither of them is ambiguous, but the preceding QP unambiguously takes wide scope (Suh 1990, Beck & Kim 1997). We appear to be more close to group II speakers. For those who get ambiguity in (6), wide scope reading of the scrambled QP is still preferred (Suh 2002). These speakers still judged (5b) fully ambiguous. We suspect that the group reading of QP in (6) may be a possible source for wide scope reading of the subject (Miyagawa 2004).

⁴ The scope ambiguity in (5b) is an interesting phenomenon in a couple of respects. Park (2003) claims that scope possibilities are parallel in antecedent and ellipsis clauses. However, given that an antecedent clause of
It is unexpected that the two QPs differ in scope taking behavior under the Move and Delete analysis. We might think about two possibilities to resolve scope difference between Korean fragments and their full sentential counterparts. The one is to claim that Merchant’s Move + Delete analysis cannot extend to Korean examples and propose a Korean-specific analysis of fragments. The other is to assume that the Move and Delete analysis of fragments is on the right track (Kim 1997, B. Park 2004), and scope asymmetries hinge on language particular properties independent of fragment operation. In this paper, we choose the second view and propose that scope difference results from a specific property of Korean syntax: namely, the presence of scrambling operation. We further show that movement to Spec-F has unique property not allowing reconstruction, and parallel movement analysis advanced in Chomsky (2005) may properly account for scope asymmetry found in Korean fragments.

2. Movement without Agree: EPP-only Movement

Our proposal is based on the assumption that XPs can undergo EPP-only movement, independent of Agree or uninterpretable feature valuation. According to Nevins & Anand (2003) and Nevins (2004), movement of on some stage in (7a) is different from that of some actress in (7b).

\[(7)\]

\begin{align*}
\text{a. On some stage} & \text{ stood every actress.} \quad (\exists > \forall) \\
\text{b. Some actress} & \text{ stood on every stage.} \quad (\exists > \forall, \forall > \exists)
\end{align*}

In (7b) uninterpretable feature valuation such as phi-feature or Case occurs between some actress and T. By contrast, no feature valuation occurs in the case of the locative PP movement in (7a). The PP undergoes movement in order to satisfy the EPP requirement on T.\(^5\)

Scope difference in (7) is due to EPP-only movement of on some stage in (7a) vs.

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fragment (5b) is either (5c) or (6), Park’s (2003) prediction is not borne out: The object QP in (5b) takes either scope (over or under the subject QP). However, the object QP in (5c) and that in (6) take only one scope; under and over the subject QP, respectively. According to K.Kim (2003), wh-phrase in (5a) has only wide scope interpretation. Nevertheless, the answer as shown in (5b) shows scope ambiguity.

\(^5\) The EPP-only movement is supported by the following facts. First, although the PP moves to Spec of T, it is the post-verbal NP that has the Agree relation with T.

\begin{align*}
\text{i. a. In the garden stand*/stands} & \text{ two fountains.} \\
\text{b. Down through the hills and into the forest flows*/flow} & \text{ the little brook.} \quad \text{(Levine 1989)} \\
\text{c. Over my windowsills seems} & \text{ to have crawled an entire army of ants.} \quad \text{(Bresnan 1994)}
\end{align*}

Second, when the post-verbal NP is a pronoun, it is marked with Nominative Case.

\begin{align*}
\text{ii. a. Under the garden wall sat I*/me, waiting for my friends to appear.} \\
\text{b. In the garden is HE*/HIM.} \quad \text{(Green 1992)}
\end{align*}
feature-checking movement of *some actress* in (7b). They suggest the following generalization (see Lee (1994) and Sohn (1995) for related discussion):

(8) If the only feature-checking relation a probe and goal G stand in is EPP, then G cannot reconstruct.

In other words, the trace in (7a) is inactive (hence, $\exists \forall$ reading only) while the trace in (7b) is active for scope determination (hence, $\forall \exists$ reading possible). 6

Let us consider another case in which movement seems to occur without Agree, which is pointed out by Lasnik (2001). When the QP subject in embedded clause precedes the particle *out*, it must take scope over negation.

(9) a. I made out every Mersenne number not to be prime. ($\forall > \text{Neg, Neg} > \forall$)
   b. I made every Mersenne number out not to be prime. ($\forall > \text{Neg}$)

In (9b), movement of *every Mersenne number* is not driven for Case or phi-feature valuation. Hence, scope freezing effect of the QP in (9b) is predicted under the EPP-only movement analysis (see further examples in Fox & Nissenbaum 1999).

We propose that EPP in Korean is not parasitic on some other features such as structural Case or phi-feature (cf. R. Kim 2003). 7 This proposal is based on the fact that Korean lacks morphological agreement (cf. Miyagawa 2005). We also propose that like locative inversion, movement in Korean is EPP-only movement and that a copy/trace made as a result of EPP-only movement is not active for scope determination.

First, consider the following utterance for Neg/QP scoping interaction.

(10) Q: Mary-ka motwu ta an mannass-ni? ($\forall > \text{neg, neg} > \forall$)
    Mary-Nom all all not met-Q
    ‘Didn’t Mary meet all?’
A: Ung, motwu ta. ($\forall > \text{neg}$)
    Yes, all all
    ‘No, (she didn’t meet) all.’

Unlike the purported fully sentential source, its fragmental counterpart displays scope

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6 For our purposes the following Scope Principle is assumed (cf. Aoun and Li 1989, Hoji 1985, Huang 1982):

(i) QP1 may have scope over QP2 if QP1 c-commands QP2 or a trace of QP2.

7 We assume that the EPP is the requirement that the selecting feature [P] on a head H must be satisfied in a local configuration with a phonetically visible element, "local" meaning a sister of a [P]-bearing node: either H (resulting in head-adjunction) or H' (resulting in specifier merge). See Chomsky (2001) and Landau (2005) for further discussion.
disambiguation. Although the neg\(>\forall\) reading is available in a full sentence as in (10Q), it disappears in fragments as in (10A). We account for the scope discrepancy in (10) on a par with (9) under the assumption that the fragment motwu ta ‘all’ in (10A) undergoes EPP-only movement like locative inversion in English, which is independent of formal feature valuation. Then, the copy/trace made as a result of EPP-only movement to a phase-edge position doesn’t involve scope determination (cf. Williams 2003), hence, motwu ta ‘all’ as a fragment is predicted to take widest scope in (10A) but not in (10Q).8

Now let us look at (4), repeated here in (11).

(11) a. nwu-ka manhun haksayngtul-ul mannass-ni?
   who-Nom many students-Acc met-Q
   ‘Who met many students?’

b. myechmyech salamul-i.
   several people-Nom
   ‘Several people.’

c. myechmyech salamul-i manhun haksayngtul-ul mannassta. (∃>many)
   several people-Nom many students-Acc met
   ‘Several people met many students.’

The subject QP fragment in (11b) has the following structure:9

8 Conflicting judgments have been observed in previous literature as discussed in Han (2005). Here too, there are two groups of speakers particularly concerning wide scope possibility of (short-form) Neg over QP (here we basically follow scope judgments of Neg-ObjQP ambiguities reported in K.Kim 2003 and Choe 2000). Chungmin Lee and Changguk Yim independently pointed out (by p.c.) that the appearance of overt Case marker in QP forces wide scope reading of QP as in (i) (see Ahn (1991: ch. 3) for further discussion). Otherwise, as they observed, Neg can be interpreted as taking scope over bare QPs. Thanks also to Upyong Hong and Sook-Whan Cho for helpful discussion.

(i) Q: Mary-ka motwu-lul ta an mannass-ni? (∧>neg only)
   Mary-Nom all-Acc all not met-Q
   ‘Didn’t Mary meet all?’

9 Chomsky (2005) recently attempts to exclude non-uniform chain like A’-A-A chain produced by movement of a wh-phrase from Spec-T to Spec-C, for example. He advances that licit chains are just argument A-chains and operator-argument/variable construction. Consider the representation (ib) that is derived from (ia).

(i) a. C [T [who [v* [see John]]]]
   b. who1 [C [who2 [T [who3 [v* [see John]]]]]]
   c. Who saw John?

Chomsky proposes that there is a direct relation between who1 and who2, and between who2 and who3, but none between who1 and who2. Thus, parallel operation of the edge-features of C and Agree-features inherited by T from C derives (ib) from (ia). By the same token, we assume without further discussion that the edge-features of F (or C) and Case-features of T (perhaps inherited by F or C) directly attract myechmyech salamul-i respectively. We hereby employ chain notation and trace convention for expository convenience only. The genuine entities are “copies” (pronounced or unpronounced) everywhere for movement sites.
In (12) *myechmyech salamtul-i* undergoes EPP-only movement to Spec-F and (Nom)Feature-valuation movement to Spec-T. The trace \( t' \) in Spec-T, however, cannot enter into scoping since TP is not a phase (Chomsky 2001, 2005). The trace \( t \) in Spec-\( v \), in contrast, may participate in scoping. However, since \( t \) is linked to EPP-only movement to Spec-F, it is inactive for scope determination. In other words, the FP internal chain \( <\text{myechmyech salamtul-i}, t> \) is visible for scope determination while the TP internal chain \( <\text{myechmyech salamtul-i}, t'> \) is not, since TP is not a phase (see further details on parallel movement approach in Chomsky 2005). Thus, *myechmyech salamtul-i* invariably takes scope over *manhun haksayngtul-ul* in (11b).\(^{10}\)

The structure of the full sentential counterpart (11c) is illustrated in (13).

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\(^{10}\) Suh (2002) antecedes the spirits of core judgments and central analysis of scope phenomena in this paper. She basically suggests that subject NPs with overt Nom marker or Top marker are related to Foc\( P \) so that it should remain at LF by Full Interpretation, and the subject copy left in Spec-\( v \) must be deleted at LF. Hence, the subject QP takes wider scope than the object QP. She further notes that scrambled QPs tend to induce wider scope reading due to the focused effect of scrambling. Ernst (1998) advances that head-government to Subject QP is crucial in preventing quantifier scope ambiguities in Korean. We will not evaluate his claim here due to space limitations.
In (13) $t'_1$ and $t_1$, the traces of *myechmyech salamtul-i* are inert for scope determination parallel to the accounts given for the derivation (12). Since *myechmyech salamtul-i* c-commands *manhun haksayngtul-ul*, but not vice versa, the former takes scope only over the latter. Note, in particular, that the subject QP in non-elliptical correlate sentences behaves on a par with the fragmental ones because the subject in Korean must raise up to FP in root clauses due to the EPP feature on F, which implies the topic-prominent nature of the language.

Now, consider the example showing scope discrepancy, as shown in (14).

(14) a. *myechmyech salamtul-i nwukwu-lul manass-ni?*  
   several people-Nom who-Acc met-Q  
   ‘Who did many people meet?’

b. *manhun haksayngtul-ul.*  
   many students-Acc  
   ‘Many students.’

c. *manhun haksayngtul-ul myechmyech salamtul-i mannassta.*  
   many student-Acc several people-Nom met  
   ‘Many students, several people met.’

The full sentence answer in (14c) has the structure like (15).

(15)  

![Diagram](https://example.com/diagram)

Here too, the scrambled QP is expected to take widest scope on a par with (11b-c) since movement to F-Spec is driven only for EPP satisfaction in Korean, and the trace $t_2$ is not active for scope determination. Thus, *manhun haksayngtul-ul* takes scope over *myechmyech salamtul-i* or its trace $t_1$ because the former c-commands the latter.

By contrast, the object fragment answer in (14b) has the following structure.
In (16), the initial trace $t_2$ left by $vP$-edge scrambling of *manhun haksayntul-ul* may enter into scoping interactions since $vP$ is also a phase in Korean (Chomsky 2005) and the movement is not induced by EPP.\textsuperscript{11} Hence, $t_2$ is "active" for scope determination unlike the traces left behind FP-edge or EPP-only movements as in (15). Hence, ambiguity arises in (14b) contra (14c).\textsuperscript{12}

Note, however, that if (16) were a possible derivation for non-elliptical (14c), in other words, if vacuous $vP$-edge scrambling or tucking-in scrambling can take place in (14c), it should be ambiguous, too (contra Bak 1999).\textsuperscript{13} To resolve the problem, we claim that *manhun haksayntul-ul* cannot undergo "intermediate" movement to $vP$-edge since it will be counted as an unnecessary (move) step, and would violate some version of economy principles such as fewest steps and the shortest derivation condition.\textsuperscript{14} \textsuperscript{15} In fragments

\begin{itemize}
  \item \textsuperscript{11} We assume that this movement is an instance of clause-internal (vacuous) scrambling, an option permitted in Korean language. We speculate that not all instances of clause-edge scrambling are in fact pure scrambling operations. Some of them are rather scope-discourse induced EPP-only movements. We will, however, sidestep the exact nature of scrambling operation in Korean. Note in passing that Ko (2004)'s recent analysis of asymmetries in scrambling in Korean independently motivates the assumption that $vP$ is a phase in Korean.
  \item \textsuperscript{12} Alternatively, the fragment answer in (14b) may have the following structure.
  \item \textsuperscript{13} According to Chomsky (2001:34), optional operations can apply only if they have an output effect on outcome. However, no output effects are observed in the case of scrambling to $vP$-edge in (16). See also Hoji (1985) for discussion of ban on vacuous scrambling for scoping interactions.
  \item \textsuperscript{14} There are several cases where movement is exceptionally permitted due to the concomitant ellipsis. According to Lasnik (1995), pseudogapping is overt raising of XP to spec AgroP followed by VP ellipsis, as shown in (ia). In the full form, the same movement makes the sentence ill-formed, as shown in (1b).
  \item \textsuperscript{15} (i) a. I'll accept you if you will me.
\end{itemize}
context, however, we suggest that such violations can be nullified as a result of the ellipsis at PF. This kind of salvation strategy at PF is reminiscent of repairing island violations by ellipsis as widely discussed in Merchant (2001), Fox & Lasnik (2003) and many others. This might imply that like certain island conditions, fewest step is an instance of representational economy (i.e., interface conditions) that can be ameliorated by PF-deletion.

3. QP-NPI and QP-Wh Scope Interaction

In negative polarity item (NPI) fragments, scope-taking behavior is similar to QP fragments. When an NPI fragment is a subject, scope-taking behavior is parallel in the fragment and its full sentential counterpart (cf. Sohn 1995, Watanabe 2004).

(17) a. nwu-ka manhun haksayngtul-ul mitci anh ass-ni?  
    who-Nom many students-Acc believe not Past-Q  
    'Who didn't believe many students?'

b. amwuto (not>many)  
   anybody
   'Nobody. (Lit. Anybody)'

c. Amwuto/Nwukwuto manhun haksayngtul-ul mitci  anh ass-ta  
   anybody many students-Nom believe not Past-Dec  
   'Nobody believed many students. (Lit. Anybody didn't believe many students.)'

When an NPI fragment is an object, scope discrepancy is observed between the fragment

b.*You will me accept.

A similar case is observed in attributive comparatives.

(i) a.*Abby wrote a more interesting novel than Ben wrote a play.
   b. Abby wrote a more interesting novel than Ben did a play.

Again pseudogapping involves movement permitted due to VP ellipsis.

15 The shortest derivation condition can be defined as follows:

(i) The Shortest Derivation Condition (Kitahara 1997:26)
   Minimize the number of elementary operations necessary for convergence.

16 We do not claim that ellipsis happens "because" there is economy violation in the structure and that additional movement happens "because" it can be deleted. We advance that as a result of ellipsis, economy violation which causes PF crash can be nullified. Hence, no look-ahead problems arise under the analysis advanced here. Regarding this issue, see Fox and Lasnik (2003), Merchant (2001), and M.Park (2004).

17 According to Lasnik (2001:86), certain locality asymmetries on movement are related to the difference between elliptical and non-elliptical form. He claims that consideration of these problems should help the issue of derivation vs. representation into sharper focus. The locality effects in elliptical constructions seem to demand a hybrid account that is crucially derivational, measuring length of each successive step of movement, but is partly representational as well, inspecting the LF and PF representation for violation markers.

18 NPI amwuto may inherently bear the Neg feature (Kim 2001, 2005, Watanabe 2004). Hence, it is not the Neg node that interacts with QP but the NPI (or Neg concord item) itself does this job in Korean (and Japanese).
and its full clause counterpart.\textsuperscript{19}

\begin{equation}
\begin{array}{l}
(18) \quad a. \text{Manhun haksayngtul-i nwukwu-lul/etten salam-ul mitci anh ass-ni?}
\text{many student-Nom who-Acc/which person-Acc believe not Past-Q}
\text{’Who/Which person didn’t many student believe?’}
\quad \text{b. amwuto (many->not, not->many)}
\text{anybody}
\text{’Nobody. (Lit. Anybody).’}
\text{c. Manhun haksayngtul-i amwuto/nwukwuto mitci anh ass-ta}
\text{many students-Nom anybody believe not Past-Dec}
\text{’Many people didn’t believe anybody.’}
\end{array}
\end{equation}

The subject NPI fragment in (17b) can be derived as follows.

\begin{equation}
\begin{array}{l}
\text{(i) a. Manhun haksayngtul-i nwukwu-lul/etten salam-ul mitci anh ass-ni?}
\text{many student-Nom who-Acc/which person-Acc believe not Past-Q}
\text{’Who/Which person didn’t many student believe?’}
\quad \text{b. amwuto/?*Yenghi-pakkey}
\text{anybody/Yenghi-except}
\text{’Nobody/’Nobody except Yenghi.’}
\quad \text{c. amwuto/?*Yenghi-pakkey manhun haksayngtul-i mitci anh ass-ta}
\text{anybody/Yenghi-except many students-Nom believe not Past-Dec}
\text{’Many people didn’t believe anybody/anybody except Yenghi.’}
\end{array}
\end{equation}

For this dialect, fragmental answers of NPI seem to be generally barred contra Japanese (Watanabe 2004). Interestingly, however, even in this dialect the judgments of NPI fragments pattern with those of non-elliptical “dislocated” counterparts. Note that non-dislocated (i.e., in-situ) NPI counterparts below are judged perfect even in this dialect.

\begin{equation}
\begin{array}{l}
\text{(ii) manhun haksayngtul-i amwuto/Yenghi-pakkey mitci anh ass-ta}
\text{many students-Nom anybody/Yenghi-except believe not Past-Dec}
\text{’Many people didn’t believe anybody/anybody except Yenghi.’}
\end{array}
\end{equation}

Thus, this judgment parallelism lends another support to the claim that fragments are derived by the movement of remnants (here NPIs) to the Spec-F, followed by TP-deletion at PF.
Note that the representation resulted from local scrambling, if available, of manhun haksayngtul-ul 'many students' over the trace $t_1$ (left by movement of amwuto to Spect-T) would not induce many not reading, either, since the trace $t_1$ is also inert for scope determination because TP is not a phase and the A-chain $<t'_1, t_1>$ has no independent status with respect to the operator amwuto for scope taking relations: that is, $t_1$ is left by EPP-only $\lambda'$-movement of amwuto.\(^{20}\)

The derivation of the object NPI fragment in (18b) can be represented as follows.

The relevant chain-link relations for scope determination at LF are as follows: $<amwuto_2, t_1>$, $<t_1, t_2>$.\(^{21}\) Hence, scope ambiguity occurs (recall the Scope Principle given in footnote 6).

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\(^{20}\) Sohn (2005) discusses other scope freezing phenomena interacting with NPI and focused elements. Space limitations force us to sidestep this issue here.

\(^{21}\) Note that interpretation of scope determination takes place phase-by-phase. Hence, the first phase $vP$ interprets $<t_1, t_2>$ scope relation, and the second phase FP (or CP if F is C-related periphery) interprets $<amwuto_2, t_1>$ or
Our analysis has further implications. Miyagawa (2004) also claims that scrambling in Japanese is EPP-driven. His argument is based on the interpretation of universal *zen’in* ‘all’ relative to negation. He observes that *zen’in* in object position may scope under the scope of sentential negation, as in (21).

(21) Taro-ga *zen’in-no-syas-in-o* mi-nakat-ta. (not>all, all>not)
    Taro-Nom all-Gen-photo-Acc see-Neg-Past
    ‘Taro didn’t see everyone’s photos.’

However, as he observes, if *zen’in* is placed in the subject position, it scopes over negation.

(22) Zen’in-no-gakusei-ga san-satu-no hon-o yoma-nakat-ta. (all>not only)
    all-Gen-student-Nom three-Gen book-Acc read-Neg-Past
    ‘Every student did not read three book.’

Interestingly, however, he indicates that when the object is scrambled, a partial negation interpretation becomes possible.

(23) San-satu-no-hon-o, zen’in-no-gakusei-ga t, yoma-nakat-ta. (not>all, all>not)
    3-CL-book-Acc all-Gen-student-Nom read-Neg-Past
    ‘Three book, every student did not read.’

Miyagawa argues that (22) and (23), taken together, give evidence that the EPP on T exists in Japanese (see Kim 2004 for related discussion). We may reinterpret this contrast as follows. In (22) subject QP obligatorily moves up to Spec-F (like Korean), hence it takes widest scope. Subject QP cannot move to Spec-F in (23) since object QP already sits in Spec-F. Thus, subject QP can move only up to Spec-T in (23), and since it is not EPP-only movement (but perhaps EPP + feature-valuation movement), the trace left by subject QP movement may enter into scoping. Hence, ambiguity occurs in (23) like (21).

We observe similar scoping phenomena in Korean. Consider the following contrast:

(24) a. na-nun motwu-ka phathi-ey o-ci-anhass-ta-ko sayngkakhanta (∀>Neg only)
    I-Top all-Nom party-to come-Neg-Decl-Comp thinks
    ‘I think that all didn’t come to the party.’
There seem to be two types of embedded clauses in Korean. Embedded CPs like (24a) headed by -ko ‘that’ may contain ForceP, and the subject QP in this clause can (and, in fact, must) move to Spec-F as in (24a), hence widest scope reading only.23 By contrast, subordinate clauses like (24b) and noun-complement clauses like (24c) in Korean do not contain ForceP, hence the subject QP moves only up to TP (since there’s no Force projection available for a landing site). Thus, subject QP is predicted to scope under Neg in (24b-c).

The analysis advanced here further has some implications for wh-QP interaction in English as shown in (21) (cf. K.Kim 2003, Son 2003 and others).

(25) a. Who does everyone love? (wh> ∀, ∀>wh)
   b. Who loves everyone? (w> ∀)

(25a) has the structure like (26).

(26) Who₂ does everyone₁ t’₂ t₁ love t₂?24

In (26) everyone or t₁ c-commands t₂ and it takes scope over wh-phrase. Wh-phrase also c-commands everyone or t₁ and it takes scope over everyone. Hence, scope ambiguity emerges. Suppose there are four possible derivations for (25b) which are given in (27).

(27) a. Who₀₁ loves everyone₂?
   b. Who₀₁ t₁ loves everyone₂?
   c. Who₀₁ loves everyone₂ t₁ t₂?
   d. Who₀ t’₁ loves everyone₂ t₁ t₂?

Note that ‘Someone loves everyone.’ is ambiguous in English, and the ∀>∃ reading can be explained by the assumption that the object everyone shifts over vP internal subject someone

23 Recall that the subject in Korean must raise all the way up to Spec-Force (the topmost node) in root clause due to the EPP feature on Force, which implies the topic-prominent nature of the language. This requirement may not be imposed on the so-called subject-prominent language like English. See, however, some extended notions of subjects discussed in Cardinaletti (2004) and Rizzi (2004).

24 K. Kim (2003) indicates that everyone can take scope over the wh-phrase because it c-commands t’₂. Under the analysis advanced here, t’₂ is inert for scope determination since wh-movement may be also an instance of EPP-only movements. The wide scope possibility arises because the trace t₁ of quantifier everyone c-commands t₂.
or its trace left behind the (Agreement or Case) feature-checking movement (Hornstein 1999). Thus, it seems that (27c-d) that involve object shift is more plausible candidates than (27a-b) that lack it. Vacuous wh-movement may or may not be excluded as in (27c) or (27d), respectively. Assuming traditional successive cyclic A′-A-A movements, wh-trace may enter into scope-taking relations in (27d), which would give rise to wh-only reading, contrary to fact. Therefore, only (27c) seems to be an optimal candidate that can account for only reading since wh-trace \( t_1 \) in (27c) is left by C-phase-edge movement, and cannot enter into scoping relations. However, assuming parallel movement put forward in Chomsky (2005), neither derivations of (27c-d) produce active wh-traces and invoke narrow scoping reading of who. Thus, the validity of vacuous wh-movement in English is still unsettled under our analysis.

4. Concluding remarks

Reinterpretation of representational economy as interface conditions provides an elegant account for the apparent scope puzzles in Korean that may otherwise be problematic for syntactic treatments, in particular, Move-and-Delete approach to fragments in Korean. Our proposal has some implications for future research: (i) Some economy conditions (say, fewest steps) are representational in that they can be repaired by interface strategies such as deletion at PF, (ii) Phase-edge movements (that are purely triggered by EPP and the like) have unique property that does not allow reconstruction in contrast to movements for formal feature checking, (iii) the so-called parallel movement approach put forward in (Chomsky 2005) gets some empirical supports from scope facts in Korean.

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\(^{25}\) Wh-fragments in Korean also induce wh-only reading only.

(i) A: Manhun salamtul-i nwukwunka-lul mannassta
\hspace{1em}many people-Nom someone-Acc met 'Many people met someone.'
B: Nwukwu-lul?
\hspace{1em}who-Acc 'Whom?'

(ii) A: Nwukwunka-ka manhun salam-ul mannassta
\hspace{1em}someone-Nom many people-Acc met 'Someone met many people.'
B: Nwu-ka?
\hspace{1em}Who-Nom 'Who?'

However, if K.Kim (2003) is correct, "wh-only" reading has nothing to do with the nature of fragments, but due to the fact that wh-phrases invariably take widest scope in Korean; hence, pair-list reading cannot be obtained regardless of the structural relations of wh-phrases and QPs. See Son (2003) for further related discussion.


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