Cyclic Linearization Analysis of Predicate Fronting*

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This paper explores several issues regarding predicate fronting: (i) extraction difference between predicate fronting and argument fronting, (ii) relation between Case on subject and possibility of predicate fronting, and (iii) movement vs. prolepsis. After we critically review Chung's (2007) analysis based on non-constituency of predicate fronting and Yoon's (2007) analysis based on proper binding condition, we try to examine the three issues under the framework of cyclic linearization advanced in Fox & Pesetsky (2005) and resolve the problems that arise in their analyses.

Key words: predicate fronting, proper binding condition, cyclic linearization, prolepsis

1. Introduction

Regarding predicate fronting, a couple of non-trivial facts are observed. First, predicate fronting in Korean is restricted when compared with argument fronting as in (1c), as noted in Chung

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(2007).\textsuperscript{1}

(1) a. Chelswu-nun Yenghi-ka yeppu-ta-ko sayngkakha-n-ta.
   Chelswu-Top Yenghi-Nom pretty-Dec-C think-Pres-Dec
   'Chelswu thinks that Yenghi is pretty.'

      Pretty-Dec-C Chelswu-Top Yenghi-Nom think-Pres-Dec
      'Chelswu thinks that Yenghi is pretty.' (Chung 2007:2)

   c. Yenghi-ka Chelswu-nun yeppu-ta-ko sayngkakha-n-ta.
      Yenghi-Nom Chelswu-Top pretty-Dec-C think-Pres-Dec
      'Chelswu thinks that Yenghi is pretty.' (Chung 2007:7)

As shown in (1b), when the predicate in the embedded clause yeppu-ta-ko 'pretty' undergoes movement to the sentence-initial position, the sentence is degraded. However, when the argument in the embedded clause Yenghi-ka undergoes movement to the sentence-initial position, the sentence is grammatical, as shown in

\textsuperscript{1} Hong-Bin Im points out the possibility that the sentence-initial element Yenghi-ka 'Yenghi' in (1c) can be interpreted as subject of sayngkakha-n-ta 'think'. However, the possibility disappears when the embedded subject is inanimate, as shown in (i).

(i) a. Chelswu-nun Burger King hamburger-ka masiss-ta-ko
    Chelswu-Top Burger King hamburger-Nom tasty-Dec-C
    think-Pres-Dec
    'Chelswu thinks that Burger King hamburgers are tasty.'

   b. *Masiss-ta-ko Chelswu-nun Burger King hamburger-ka
      Tasty-Dec-C Chelswu-Top Burger King hamburger-Nom
      sayngkakha-n-ta.
      think-Pres-Dec
      'Chelswu thinks that Burger King hamburgers are tasty.'

   c. Burger King hamburger-ka Chelswu-nun masiss-ta-ko
      Burger King hamburger-Nom Chelswu-Top tasty-Dec-C
      sayngkakha-n-ta.
      think-Pres-Dec
      'Chelswu thinks that Burger King hamburgers are tasty.'
Second, Case marking on the embedded clause subject seems to have an influence on the possibility on predicate fronting, as shown in (2).

(2)?Yeppu-ta-ko Chelswu-nun Yenghi-lul sayngkakha-n-ta.
Pretty-Dec-C Chelswu-Top Yenghi-Acc think-Pres-Dec
'Chelswu thinks that Yenghi is pretty.'

Speakers seem to be sensitive to Case marking on the embedded clause subject. For some speakers, (2), where Yenghi is marked with accusative, is better than (1b), where Yenghi is marked with nominative.

This paper is organized as follows. Section 2 and 3 critically review Chung (2007) and Yoon (2007), respectively. Section 3 presents our cyclic linearization-based analysis of predicate fronting. Conclusive remarks are presented in Section 4.

2. Against Nonconstituent Movement Analysis of Predicate Fronting Restriction


(3) ....[CP [MP [TP Yenghi-ka [AP yeppu]-Φ-pres]-ta]-ko]

Chung further claims that not being syntactic constituents, the presumed predicates in (1b) is unable to undergo movement, as schematized in (4).
Unlike presumed predicate fronting, the subject of the embedded clause in (1c) is an independent syntactic unit and freely undergoes movement to a sentence-initial position.

Note, however, that the size of the element that undergoes movement in (1b) can be larger than the predicate itself. Suppose the subject Yenghi-ka first moves out of the embedded CP, say, to the Spec-\(v\) of the matrix clause via scrambling. Then, what really moves in (1b) is not necessarily the predicate itself but can be the whole embedded clause, as shown in (5).

\[(5) \quad [CP \text{tYenghi-ka Yeppu-ta-kol}, \text{Chelswu-num Yenghi-ka t}]_{i} \text{sayngkakha-n-ta}\]

Then, (5) can be ruled out as the Proper Binding Condition (PBC) violation since the remnant CP contains an unbound trace of Yenghi-ka (cf. Fiengo 1977). Chung (2007:9), however, indicates the possibility that the PBC effect is sensitive to the "types" of movement: that is, the PBC applies only to the cases where the movements involved are of the same type (cf. Fox 2000, Fukui 1997, Koizumi 1995, Mülller 1998, and others). To understand this proposal more clearly, let us look at (6) (cf. Hoji 2005).
The deviance of (6) can be explained by the PBC assuming the representation in (7) where the embedded CP moves to the sentence-initial position after *cwungkwuk–uylo* 'to china' undergoes A’-movement.

(7) *[CP Chelswu–ka t, talchwulha–yess–ta–ko]* kyengcal–un
cwungkwuk–uylo t, kyellonnayli–ess–ta

The fronted CP that undergoes A’ movement then has an unbound A’-trace t, which results in the PBC violation. By contrast, since the offending trace t_Yenghi–ka in (1b) is an A–trace, while t_i is A–bar trace, no PBC effect is expected to show up in (5). Since (1b), nonetheless, is ungrammatical, Chung (2007) argues that the non–constituent movement analysis is needed to account for the ill–formedness of (1b).

However, Chung’s (2007) argument doesn’t seem to be solid because the PBC effect is observed irrespective of the types of movement, at least in Korean. The grammatical contrast in (8) shows that the PBC effects seem to occur between two different types of movement.

(8) a. *[VP manhi t, oki]–nun [pi–ka, ha–yess–ciman] ... a lot come–Contra rain–Nom HA–Past–although 'rain a lot although it did.....'

b. *[VP pap–ul manhi mekki]–nun Yenghi–ka meal–Acc a lot eat–Contra Yenghi–Nom
ha-yess-ciman
HA-Past-although
'have a meal a lot although Yenghi did....'

c. [\[vp ppalli twuki]\-nun Yenghi-ka ha-yess-ciman fast run-Contra Yenghi-Nom HA-Past-although
'run fast, although Yenghi did....' (Ahn 1991:87–89)

Note that the fronted VP in (8a) has a trace of the subject \(pi-\)ka, t. Although the unbound trace of the subject is an A–trace and the trace of VP fronting is an A’–trace, the PBC violation occurs, which makes (8c) ill-formed. By contrast, in the unergative construction such as (8c) and transitive construction such as (8b), the fronted VP doesn’t have a trace. Hence, no PBC violation occurs in (8b) and (8c). Thus, the PBC seems to hold irrespective of types of movements in Korean contrary to Chung’s (2007) claim. In sum, (1b) can be excluded as a PBC violation without recourse to nonconstituent movement put forward in Chung (2007).

3. Against PBC Analysis of Predicate Fronting Restriction

The analysis advanced by Yoon (2007) may account for the grammatical contrast related to Case marking on the embedded subject.

(9) a. *Yeppu-\(ta\)-ko Chelswu-nun Yenghi-\(ka\) sayngkakha-\(n\)-\(ta\).
    Pretty-Dec-C C.-Top Y.-Nom think-Pres-Dec
    ‘Chelswu thinks that Yenghi is pretty.’

b. ?Yeppu-\(ta\)-ko Chelswu-nun Yenghi-\(lul\) sayngkakha-\(n\)-\(ta\).
    Pretty-Dec-C C.-Top Y.-Acc think-Pres-Dec

Note that the movement of the head yeppu-\(ta\)-\(ko\) itself to nonhead positions should also be barred since \(X^0\) adjunction to YP violates Emond’s (1976) Structure Preservation Constraint.
'Chelswu thinks that Yenghi is pretty.'

Yoon (2007) suggests that there are two possible derivations for (9b). Subject-to-Object Raising (SOR) (10a) or Prolepsis (10b). Then, only the former parse yields the PBC violation.


b. [Pro Yeppu-ta-ko] Chelswu-nun Yenghi-lul ti sayngkakha-n-ta

To clarify our understanding of prolepsis, let us look at (11).


think
'I think Cheli is crazy.'

b. [Kunyesek-ì tolass-ta-ko] na-nun Cheli-eytayhay; tì that.guy-Nom crazy-Dec-C I-Top Cheli-regarding sayngkakhay.

think
'I think Cheli is crazy.'

The fronted clause in (11b) doesn’t have a trace subject to the PBC. Thus, no PBC effects are found here.

Yoon (2007) claims that although in some examples, a surface string that is identical to the one derived by subject-to-object raising contexts arises in prolepsis examples, there are sentences that could only have been derived by SOR. Whereas the ambiguous SOR/prolepsis contexts result in the ameliorated judgements, PBC effects surface in
(12) where only SOR is possible.\(^3\)

(12) a. Na-nun cinan cwu pwuthe-lul nalssi-ka  
I-Top last week from-Acc weather-Nom  
coha-cy-ess-ta-ko mit-nun-ta.  
become.better-Past-Dec-C believe-Pres-Dec  
'I believe that the weather started improving since last week.'

b. Na-nun yekise-pwuthe-lul nay ttang-i-la-ko  
I-Top here-from-Acc my land-Cop-C  
mit-nun-ta.  
believe-Pres-Dec  
'I believe that my land begins from here.'

c. Na-nun yelum-ul maykcwu-ka choyko-la-ko  
I-Top summer-Acc beer-Nom best-Cop-C  
sayngkakha-n-ta.  
think-Pres-Dec  
'I consider summer to be the best time for (a cold) beer.'

According to Yoon (2007), the boldfaced elements in (12) are base-generated as major subjects in the embedded clause and undergo movement to the matrix clause, as shown in (13).

(13) a. Na-nun cinan cwu pwuthe-lul, \([CP \ t; \ nalssi-ka\)  
coha-cy-ess-ta-ko mit-nun-ta  
\]  
b. Na-nun yekise-pwuthe-lul, \([CP \ t; \ nay \ ttang-i-la-ko\)  
mit-nun-ta  
c. Na-nun yelum-ul, \([CP \ t; \ maykcwu-ka \ choyko-la-ko]\)

\(^3\) According to Yoon (2007: 647), the prolepsis parse is possible only when the proleptic argument is a DP (and animate, preferably). Thus, the proleptic parse isn't possible for (12).
When the whole CP undergoes movement, it contains an unbound trace and consequently the sentence is ungrammatical.

(14) a. \[\text{CP t} \left[\text{IP nalssi-ka coha-cy-ess-ta-ko}\right] \text{ na-nun cinan cwu puitive-lul_1 t_j mit-nun-ta}\]
    b. \[\text{CP t} \left[\text{IP nay ttang-i-la-ko}\right] \text{ na-nun yekise-puitive-lul_1 t_j mit-nun-ta}\]
    c. \[\text{CP t} \left[\text{IP maykcwu-ka choyko-la-ko}\right] \text{ na-nun yelum-ul_1 t_j sayngkakha-n-ta}\]

If Yoon (2007) is right in that the raised object is base-generated as the "major" subject of the embedded clause and raises to the matrix clause, as shown in (13), then we expect PBC violation when the whole embedded CP is fronted as shown in (14). Fronting IP, as shown in (15), perhaps is barred for independent reasons: either by restriction on nonconstituent movement or by confinement on IP movement.

(15) a. \[\text{IP nalssi-ka coha-cy-ess-ta-ko} \text{ na-nun cinan cwu puitive-lul_1 t_i t_j mit-nun-ta}\]
    b. \[\text{IP nay ttang-i-la-ko} \text{ na-nun yekise-puitive-lul_1 t_i t_j mit-nun-ta}\]
    c. \[\text{IP maykcwu-ka choyko-la-ko} \text{ na-nun yelum-ul_1 t_i t_j sayngkakha-n-ta}\]

Yoon (2007), however, encounters the following problem. In the case of prolepsis, Case marking on an argument has an effect on grammatical judgement of preposing complement clause. Compare (16b) with (17b).

(16) a. Na-nun Chelswu-eykey mikwuk-ey ka-la-ko
I-Top C.-Dat America-Loc go-Dec-C
kkosi-ess-ta.
entice-Past-Dec
'I enticed Chelswu to go to America.'
b. *?[pro mikwuk-ey ka-la-ko] Na-nun Chelswu-eykey
   America-Loc go-Dec-C I-Top C.-Dat
   kkosi-ess-ta.
   entice-Past-Dec
   'I enticed Chelswu to go America.'

(17) a. Na-nun Chelswu-lul mikwuk-ey ka-la-ko
   I-Top Chelswu-Acc America-Loc go-Dec-C
   kkosi-ess-ta.
   entice-Past-Dec
   'I enticed Chelswu to go America.'
b. [pro mikwuk-ey ka-la-ko] Na-nun Chelswu-lul
   America-Loc go-Dec-C I-Top C.-Acc
   kkosi-ess-ta.
   entice-Past-Dec
   'I enticed Chelswu to go America.'

On the view advanced by Yoon (2007), (16b) and (17b) have pro, which isn't subject to the PBC. Both the examples are expected to show the same grammatical judgement. Nevertheless, when the argument Chelswu is marked by a postposition -eykey, fronting of complement clause makes the sentence degraded, which is not predicted under Yoon's (2007) analysis.

4. Cyclic Linearization-based Analysis of Predicate Fronting
   Restriction

This section explores how the restriction on predicate fronting can be
accounted for under the framework of cyclic linearization. According to Fox & Pesetsky (2005), elements are free to move out of the ‘already spelled–out domain’ as long as it does not yield conflicting relative linear order. Given that vP, CP and DP are regarded as spell–out domains and that cyclic linearization takes place at each spell–out domain, let us look at (1b) repeated here as (18).

(18) *Yeppu-ta-ko Chelswu-nun Yenghi-ka sayngkakha-n-ta.
     Pretty-Dec-C Chelswu-Top Yenghi-Nom think-Pres-Dec
     'Chelswu thinks that Yenghi is pretty.'

Under the assumption that a stem augmented with endings is a (complex) head directly drawn from the lexicon (cf. Chomsky 1995) and that the endings are to be licensed by Agree in syntax, (18) can be derived by movement of yeppu-ta-ko as shown in (19).

(19) Yeppu-ta-ko t Chelswu-nun t Yenghi-ka sayngkakhanta

Cyclic linearization takes place at each phase, as shown in (20).5

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4 Two notes are in order. First, if yeppu-ta-ko adjoins to the embedded vP, it will end up with adjoining to its own projection, namely the projection headed by yeppu-ta-ko itself. This derivation, we believe, should be independently barred since a probe can search for a goal only in its "c-command" domain a la Chomsky (2000, 2001). Second, if yeppu-ta-ko adjoins to the embedded CP (a possibility that Chung 2008 raises), this derivation too should be excluded since it also results in adjunction to its own projection. Thus, adjoining the yeppu-ta-ko to the embedded vP or CP is always barred for theoretical reasons (see Ko 2005 for further discussion).

5 Since yeppu-ta-ko undergoes successive cyclic movement, it may also adjoin to the matrix vP on the way to the final landing site, as depicted in (19). Spell–out, applying at the matrix vP, however, yields no different linearized word order from the one applying at the matrix CP, as in (20b).
(20) a. Spell-out applies at the embedded CP
   \[\text{Yenghi-ka} \prec \text{yeppu-ta-ko}\]

b. Spell-out applies at the matrix CP
   \[\text{yeppu-ta-ko} \prec \text{Chelswu-nun} \prec \text{Yenghi-ka} \prec \text{sayngkakha-n-ta}\]

In (20) A \prec B means that A precedes B. When spell-out applies to the embedded CP, the subject \text{Yenghi-ka} 'Yenghi' precedes the predicate \text{yeppu-ta-ko} 'pretty'. When \text{yeppu-ta-ko} undergoes movement past \text{Yenghi}, the relative word order comes into conflict with the previous ones. Hence, predicate fronting is prohibited.\(^6\)

Let us look at why argument fronting is allowed. Consider (1c), repeated here as (21).

(21) \text{Yenghi-ka} \ Chelswu-nun \ yeppu-ta-ko \ sayngkakha-n-ta.
   \text{Yenghi-Nom} \ Chelswu-Top \ pretty-Dec-C think-Pres-Dec
   'Chelswu thinks that Yenghi is pretty.'

The surface word order can be derived through movement of \text{Yenghi-ka}, as shown in (22).

(22) \text{Yenghi-ka} \ Chelswu-nun..\{vP \ t_i \ [CP \ t_i \ yeppu-ta-ko]\} \ \text{sayngkakha-n-ta}

Cyclic linearization takes place at each phase, as shown in (23).\(^7\)

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\(^6\) Jong-Bok Kim points out the fact that predicate fronting is cross-linguistically banned. Under our analysis, what undergoes movement is not a predicate itself but a certain phrase containing the predicate. Thus, the fronted predicate in (19) is not an X\(^0\), but should be an XP, say vP or VP.

\(^7\) Again, \text{Yenghi-ka} undergoes successive cyclic movement, adjoining to the matrix vP on way to matrix CP. When Spell-out applies at the matrix vP, the
a. Spell-out applies at the embedded CP
   *Yenghi-ka < yeppu-ta-ko*

b. Spell-out applies at the matrix CP
   *Yenghi-ka < Chelswu-nun < yeppu-ta-ko < sayngkakha-n-ta*

When spell-out applies to the embedded CP, the subject *Yenghi-ka* precedes the predicate *yeppu-ta-ko*. When the further movement of *Yenghi-ka* occurs, the relative word order doesn't come into conflict with the previous ones. Hence, movement is allowed.

Now we discuss why the sentence containing predicate fronting improves when Case on the embedded subject is accusative. Consider (2), repeated here as (24).

(24) *Yeppu-ta-ko Chelswu-nun Yenghi-lul sayngkakha-n-ta.*
    Pretty-Dec-C Chelswu-Top Yenghi-Acc think-Pres-Dec
    'Chelswu thinks that Yenghi is pretty.'

We assume that (24) has the structure like (25).

(25) *Chelswu-nun Yenghi-lul [CP pro yepputako] sayngkakha-n-ta*

In (25), *pro* occupies the embedded subject position and *Yenghi-lul* is base-generated in the matrix clause. Predicate raising occurs in the following way.

(26) *[pro yeppu-ta-ko], Chelswu-nun [VP t; Yenghi-lul [t;]]
    sayngkakha-n-ta

linearized word order is the same as (23b).
Cyclic linearization takes place at each phase, as shown in (27).\(^8\)

(27) a. Spell-out applies at the embedded CP  
\[ yeppu-ta-ko \]

b. Spell-out applies at the matrix CP  
\[ yeppu-ta-ko < Chelswu-nun < Yenghi-lul < sayagkakha-n-ta \]

Note that \textit{Yenghi-lul} is not linearized when the embedded CP spells out. The movement of \textit{yeppu-ta-ko} doesn't yield in conflicting order. Hence, predicate fronting is allowed in this case.

The analysis advanced here can account for the examples that can be problematic under Yoon's (2007) account. Consider (16-17), repeated here as (28-29).

(28) a. Na-nun \textbf{Chelswu-eykey} mikwuk-ey ka-la-ko  
\[ I-Top \ Chelswu-Dat \ America-Loc \ go-Dec-C \]  
kkos-ess-ta.  
entice-Past-Dec  
'I enticed Chelswu to go to America.'

b. *?Mikwuk-ey ka-la-ko na-nun \textbf{Chelswu-eykey}  
\[ America-Loc \ go-Dec-C \ I-Top \ Chelswu-Dat \]  
kkos-ess-ta.  
entice-Past-Dec  
'I enticed Chelswu to go America.'

(29) a. Na-nun \textbf{Chelswu-lul} mikwuk-ey ka-la-ko  
\[ I-Top \ Chelswu-Acc \ America-Loc \ go-Dec-C \]  
kkos-ess-ta.

\(^8\) \textit{Yenghi-lul} is base-generated in Spec of the matrix VP. \textit{Yeppu-ta-ko} adjoins to vP before going to Spec-C. When Spell-out applies at the matrix vP, the linearized order is identical with the one in (27b).
entice-Past-Dec
'I enticed Chelswu to go America.'
b. Mikwuk-ey ka-la-ko na-nun Chelswu-lul
America-Loc go-Dec-C I-Top Chelswu-Acc
kkosi-ess-ta.
entice-Past-Dec
'I enticed Chelswu to go America.'

For (28), we suggest that [Chelswu-ekey mikwuk-ey ka-l-a-ko] is a spell-out domain as shown in (30a), while for (29), [mikwuk-ey ka-l-a-ko] is a spell-out domain as shown in (30b). 9

(30) a. Na-nun [Chelswu-ekey mikwuk-ey ka-l-a-ko]
kkosi-ess-ta
→*[mikwuk-ey ka-l-a-ko] Na-nun Chelswu-ekey
kkosi-ess-ta
b. Na-nun Chelswu-lul [pro mikwuk-ey ka-l-a-ko]
kkosi-ess-ta
→[pro mikwuk-ey ka-l-a-ko] Na-nun Chelswu-lul
kkosi-ess-ta

Hence, [mikwuk-ey ka-l-a-ko] can be fronted in (30b), without yielding contradictory relative order but it cannot in (30a).

One might wonder why Chelswu-ekey in (30a) linearizes in the

9 Daeho Chung (by personal communication) raises the following question: Given that [Chelswu-ekey mikwuk-ey ka-l-a-ko] is a spell-out domain, why can’t Chelswu-ekey mikwuk-ey ka-l-a-ko pronounced by itself as an independent utterance? It is far from clear how to define the exact nature of "spell-out domain" for syntactic and semantic units. This domain, however, should be distinguished from "root clause" which can stand alone syntactically. The spell-out unit Chelswu-ekey mikwuk-ey ka-l-a-ko cannot stand alone simply because it is not a root clause, we believe, and this has nothing to with the licit status of phase or spell-out domains.
embedded CP, while Chelswu-lul in (30b) doesn’t. The discrepancy may hinge on the contrast in (31); namely, kkosi-ess-ta ‘enticed’ can select Chelswu-lul, whereas it cannot directly select Chelswu-eykey.

(31)  
       I-Top Chelswu-Acc entice-Past-Dec  
       I-Top Chelswu-Dat entice-Past-Dec

A similar account can be given to (32).10

10 The well-formedness of (iib) and (iiib) can also be explained under the cyclic linearization analysis.

(i)  
   a. Na-nun Chelswu-lul mikwuk-ey ka-la-ko seltukha-yess-ta  
       I-Top Chelswu-Acc America-Loc go-Dec-C persuaded-Past-Dec  
       ’I persuaded Chelswu to go to America.’  
   b. Mikwuk-ey ka-la-ko Na-nun Chelswu-lul seltukha-yess-ta  
       America-Loc go-Dec-C I-Top C.-Acc persuaded-Past-Dec  
       ’I persuaded Chelswu to go to America.’

(ii)  
   a. Na-nun Chelswu-eykey mikwuk-ey ka-la-ko seltukha-yess-ta  
       I-Top Chelswu-Dat America-Loc go-Dec-C persuaded-Past-Dec  
       ’I persuaded Chelswu to go to America.’  
   b. Mikwuk-ey ka-la-ko Na-nun Chelswu-eykey seltukha-yess-ta  
       America-Loc go-Dec-C I-Top Chelswu-Dat persuaded-Past-Dec  
       ’I persuaded Chelswu to go to America.’

For (i) and (ii), we propose that [mikwuk-ey ka-la-ko] is a spell-out domain as shown in (iia) and (iib), respectively.

(iii)  
       [pro mikwuk-ey ka-la-ko] Na-nun Chelswu-lul seltukha-yess-ta  
       ’I persuaded Chelswu-lul to go to America.’  
       [pro mikwuk-ey ka-la-ko] Na-nun Chelswu-eykey seltukha-yess-ta  
       ’I persuaded Chelswu-eykey to go to America.’

Hence, [mikwuk-ey ka-la-ko] can be fronted in (iib) and (iiib), without yielding contradictory relative order.

Our claim about the spell-out domain may hinge on the examples regarding selection in (iv): in other words, seltukha-yess-ta ‘persuaded’ can directly select Chelswu-lul and Chelswu-eykey.

(iv)  
       I-Top Chelswu-Acc persuaded-Past-Dec
(32) a. Na-nun Chelswu-eykey/Chelswu-lul mikwuk-ey ka-key
   I-Top Chelswu-Dat/Chelswu-Acc America-Loc go-C
   ha-yess-ta
do-Past-Dec
   'I had Chelswu go to America.'

  b. ?[Mikwuk-ey ka-key] Na-nun Chelswu-eykey
     America-Loc go-Dec-C I-Top Chelswu-Dat
     ha-yess-ta
do-Past-Dec
     'I had Chelswu go to America.'

  c. *[Mikwuk-ey ka-key] Na-nun Chelswu-lul
     America-Loc go-Dec-C I-Top Chelswu-Acc
     ha-yess-ta
do-Past-Dec
     'I had Chelswu go to America.'

That is, [mikwuk-ey ka-key] is a spell-out domain in (33a), while [Chelswu-lul mikwuk-ey ka-key] is a spell-out domain in (33b).

(33) a. Na-nun Chelswu-eykey [pro mikwuk-ey ka-key]
   ha-yess-ta
   →[pro mikwuk-ey ka-key] na-nun Chelswu-eykey
   ha-yess-ta
b. Na-nun [Chelswu-lul mikwuk-ey ka-key] ha-yess-ta
   →*[mikwuk-ey ka-key] na-nun Chelswu-lul ha-yess-ta

Hence, [mikwuk-ey ka-key] can be fronted only in (33a), but not in

   I-Top Chelswu-Dat persuade-Past-Dec
For those people who do not accept (ivb), they also rule (iiib) out. Thus, fronting possibility of the predicate phrase is closely tied to the selectional requirement that is the source of the phase, spell-out domain for linearization.
(33b). Note the following contrast that might be the source of the discrepancy in (34).\footnote{For the same reason predicate frontings are ruled out in examples below:}

(34)  
\begin{enumerate}  
\item a. ?Na-nun \textbf{Chelswu-eykey} ha-yess-ta.  
\hspace{1cm} I-Top Chelswu-Dat do-Past-Dec  
\item b. *Na-nun \textbf{Chelswu-lul} ha-yess-ta.  
\hspace{1cm} I-Top Chelswu-Acc do-Past-Dec  
\end{enumerate}

Further note that the contrast between (35) and (36) can also be

\begin{enumerate}  
\item a. Na-nun Chelswu-\textit{eykey/}Chelswu-\textit{lul} ton-ul pel-key  
\hspace{1cm} I-Top Chelswu-Dat/Chelswu-Acc money-Acc make-C  
\hspace{1cm} mantul-ess-ta.  
\hspace{1cm} make-Past-Dec  
\hspace{1cm} 'I made Chelswu make money.'  
\item b. *?\{Ton-ul pel-key\} na-nun \textbf{Chelswu-eykey} mantul-ess-ta.  
\hspace{1cm} money-Acc make-C I-Top Chelswu-Dat make-Past-Dec  
\hspace{1cm} 'I made Chelswu make money.'  
\item c. *?\{Ton-ul pel-key\} na-nun \textbf{Chelswu-lul} mantul-ess-ta.  
\hspace{1cm} money-Acc make-C I-Top Chelswu-Acc make-Past-Dec  
\hspace{1cm} 'I made Chelswu make money.'  
\end{enumerate}

In (ib-c), where \textit{Chelswu} occurs with a postposition \textit{eykey}, and where \textit{Chelswu} is marked accusative Case, complement clause frontings are both excluded. Based on the following source of the discrepancy,

\begin{enumerate}  
\item a. *?Na-nun Chelswu-\textit{eykey} mantul-ess-ta.  
\hspace{1cm} I-Top Chelswu-Dat make-Past-Dec  
\item b. *?Na-nun Chelswu-\textit{lul} mantul-ess-ta.  
\hspace{1cm} I-Top Chelswu-Acc make-Past-Dec  
\end{enumerate}

We suggest that \{Chelswu-\textit{eykey ton-ul pel-key}\} and \{Chelswu-\textit{lul ton-ul pel-key}\} are spell-out domains, as shown in (iii).

\begin{enumerate}  
\item a. Na-nun \textit{[Chelswu-eykey ton-ul pel-key]} mantul-ess-ta  
\rightarrow *?\{ton-ul pel-key\} na-nun Chelswu-\textit{eykey} mantul-ess-ta  
\item b. Na-nun \textit{[Chelswu-lul ton-ul pel-key]} mantul-ess-ta  
\rightarrow *?\{ton-ul pel-key\} na-nun Chelswu-\textit{lul} mantul-ess-ta  
\end{enumerate}

Hence, fronting \{ton-ul pel-key\} is predicted to give rise to contradictory relative order in (iii). However, for those who accept (iib) may also rule in (ic), and vice versa. Thus, it strengthens the fact the selection requirement correlates tightly with the possibility of predicate fronting.
accounted for under our cyclic linearization-based analysis.

(35) a. Na-nun cinan cwu pworthe-lul nalssi-ka
   I-Top last week from-Acc weather-Nom
   coha-cy-ess-ta-ko mit-nun-ta.
   become.better-Past-Dec-C believe-Pres-Dec
   'I believe that the weather started improving since last
   week.'

b. Na-nun yekise-pwuthe-lul nay ttang-i-la-ko
   I-Top here-from-Acc my land-Cop-C
   mit-nun-ta.
   believe-Pres-Dec
   'I believe that my land begins from here.'

c. Na-nun i-pen yelum-pwuthe-lul maykcwu-ka
   I-Top this-time summer-from-Acc beer-Nom
   choyko-la-ko mit-nun-ta.
   best-Cop-C believe-Pres-Dec
   'I believe that cold beer becomes the best since this
   summer.'

(36) a. *[Nalssi-ka coha-cy-ess-ta-ko] na-nun
    weather-Nom become.better-Past-Dec-C I-Top
    cinan cwu pworthe-lul t] mit-nun-ta.
    last week from-Acc believe-Pres-Dec
    'I believe that the weather started improving since last
    week.'

b. *[Nay ttang-i-la-ko] na-nun yekise-pwuthe-lul t]
    my land-Cop-C I-Top here-from-Acc
    mit-nun-ta.
    believe-Pres-Dec
    'I believe that my land begins from here.'

c. *[Maykcwu-ka choyko-la-ko] na-nun i-pen
beer-Nom best-Cop-C I-Top this-time
yelumpwute-lul tji mit-nun-ta.
summer-from-Acc believe-Pres-Dec
‘I believe that cold beer becomes the best since this summer.’

In (35a), for example, we can assume that \[cinan\ cwu\ pwuthe-lul\ nalssi-ka\ coha-cy-ess-ta-ko\] is a domain for linearization, so the linear order \[cinan\ cwu\ pwuthe-lul\ nalssi-ka\ coha-cy-ess-ta-ko\] must be maintained throughout the derivations. However, in (36a), where \[nalssi-ka\ coha-cy-ess-ta-ko\] is fronted, this linearization requirement is violated, so the sentence is bad. The ill-formedness of (36b) and (36c) are explained in the similar way. We can assume that \[yekise-pwuthe-lul\ nay\ ttang-i-la-ko\] and \[i-pen\ yelum-pwuthe-lul\ maykcwu-ka\ choyko-la-ko\] are linearized in (36b) and (36c), respectively. Fronting of \[nay\ ttang-i-la-ko\] and \[maykcwu-ka\ choyko-la-ko\] yields contradictory relative order. The following examples regarding selection show why \[cinan\ cwu\ pwuthe-lul,\ yekise-pwuthe-lul,\] and \[i-pen\ yelum-pwuthe-lul\] are linearized within the embedded clause.

I-Top last week from-Acc believe-dec
I-Top here-from-Acc believe-Pres-Dec
I-Top this-time summer-from-Acc believe-Pres-Dec

When the main predicate is replaced by sayngkakha-‘think’ and the so-called major subject is an NP, a similar contrast is observed.

(38) a. Na-nun \textbf{cinan cwu-lul} nalssi-ka
I-Top last week-Acc weather-Nom
coha-cy-ess-ta-ko sayngkakha-n-ta.
become.better-Past-Dec-C think-Pres-Dec
'I think that the weather started improving last week.'

I-Top here-Acc my land-Cop-C think-Pres-Dec
'I think that here is my land.'

c. Na-nun i-pen yelum-ul maykcwu-ka
I-Top this-time summer-Acc beer-Nom
choyko-la-ko sayngkakha-n-ta.
best-Cop-C think-Pres-Dec
'I think that summer is the best time for (a cold) beer.'

(39) a. *[Nalssi-ka coha-cy-ess-ta-ko]* na-nun
weather-Nom become.better-Past-Dec-C I-Top
cinan cwu-lul t\_j sayngkakha-n-ta.
last week-Acc think-Pres-Dec
'I think that the weather started improving last
week.'

b. *[Nay ttang-i-la-ko]* na-nun yekei-lul t\_j
my land-Cop-C I-Top here-Acc
sayngkakha-n-ta.
think-Pres-Dec
'I think that here is my land.'

c. *[Maykcwu-ka choyko-la-ko]* na-nun yelum-ul
beer-Nom best-Cop-C I-Top summer-Acc
t\_j sayngkakha-n-ta.
think-Pres-Dec
'I think that cold beer becomes the best since this
summer.'

We can assume that *[cinan cwu-lul nalssi-ka coha-cy-ess-ta-ko]*,
[yeki-lul nay ttang-i-la-ko] and [yelum-ul maykwu-ka choyko-la-ko] are domains for linearization in (38a), (38b) and (38c), respectively, so the linear order [cinan cwu-lul nalssi-ka coha-cy-ess-ta-ko], [yeki-lul nay ttang-i-la-ko] and [yelum-ul maykwu-ka choyko-la-ko] must be maintained throughout the derivations. Thus, fronting of nalssi-ka coha-cy-ess-ta-ko, nay ttang-i-la-ko and maykwu-ka choyko-la-ko yields contradictory relative order, as shown in (39). The following examples regarding selection show why cinan cwu-lul, yeki-lul and yelum-ul must be linearized within the embedded clause.

   I-Top last week-Acc think-dec
b. *Na-nun yeki-lul sayngkakha-n-ta.
   I-Top here-Acc think-Pres-Dec
c. Na-nun yelum-ul sayngkakha-n-ta.
   I-Top summer-Acc think-Pres-Dec

It seems that yelum-ul sayngkakhay is possible. However, note that if yelum-ul isn’t linearized within the embedded clause, we should assume the following proleptic structure.

(41) Chelswu-nun yelum-ul, [CP pro] maykwu-ka choyko-la-ko sayngkakha-n-ta

Given that the prolepsis parse is possible only when the proleptic argument is animate as pointed out by Yoon (2007: 647), (39c) cannot be analyzed as proleptic construction like (41). Hence, yelum-ul should be linearized within the embedded clause.

Our analysis may extend to the following small clause (cf. Chung 2007):
(42) a. Seyang salamtul-un [cwungkwuk-ul hakmwun-uy Western people-Top China-Acc study-Gen taysang-ulo] sam-ass-ta. object-as adopt-past-Dec 'Western people adopted China as an object of study.'

b. *Hakmwun-uy taysang-ulo; seyang salamutl-un study-Gen object-as western people-Top cwungkwuk-ul ti sam-ass-ta. China-Acc adopt-past-Dec 'Western people adopted China as an object of study.'

For (42), we suggest that [cwungkwuk-ul hakmwun-uy taysang-ulo] is a spell-out domain due to the following selectional fact.

(43) *Seyang salamtul-un cwungkwuk-ul sam-ass-ta. Western people-Top China-Acc adopt-past-Dec 'Western people adopted China.'

Hence, the order cwungkwuk-ul < hakmwun-uy taysang-ulo should be preserved throughout the derivation. However, fronting of hakmwun-uy taysang-ulo yields conflicting linear order, which results in illicit predicate fronting in (42b).

The following small clause as discussed in Chung (2007) can be accounted for along the similar lines.

(44) a. Ku-nun [cengsin-ul hana-uy mwulcilcek silchey-lo] He-Top mind-Acc one-Gen materialistic reality-as yeki-ess-ta. consider-Past-Dec 'He considered mind as materialistic reality.'

b. *Hana-uy mwulcilcek silchey-lo; ku-nun cengsin-ul ti,
one-Gen materialistic reality-as he-Top mind-Acc yeki-ess-ta. consider-Past-Dec 'He considered mind as materialistic reality.'

On a par with (42)/(43), \([\text{cengsin-}\text{-ul hana-}\text{uy mwulcilcek silchey-}\text{lo}]\) can be treated as a spell-out domain in (44) because of the ill-formedness of (45).

(45) *Ku-nun cengsin-\text{-ul yeki-}\text{ess-ta.}  
he-Top mind-Acc consider-Past-Dec 'He considered mind.'

Hence, the order \(\text{cengsin-}\text{-ul < hana-}\text{uy mwulcilcek silchey-}\text{lo}\) should be preserved. However, as a result of fronting of \(\text{hana-}\text{uy mwulcilcek silchey-}\text{lo}\) conflicting linear order is invoked, so (44b) is starred.

Chung (2007:9) further points out that predicate fronting is allowed in elliptical contexts, as shown in (46).

(46) A: John-\text{-un [Mary-ka etteh-}\text{ta-ko] sayngkakha-}\text{ni?}  
John-Top Mary-Nom how-Dec-C think-Q 'What does John think of Mary?'

B: Yeppu-\text{ta-ko.}  
Pretty-DE-C 'John thinks that Mary is pretty.'

Chung (2007) argues that predicate fragments are permitted since what undergoes movement is a whole phrase and all the elements other than the predicate are suppressed within the fronted clause, probably into pronominal elements. Thus, in (46B) what really moves is not the predicate itself but the whole embedded clause including the
unpronounced pro subject, as shown in (47).  

(47) [pro yeppu-ta-ko], John-un t. sayngkakha-n-ta.

Our cyclic linearization analysis can also explain why predicate fronting is allowed in a fragmentary utterance. Following Merchant (2004), Park (2005), and Ahn & Cho (2005), we assume that fragmentary utterance is derived through movement of remnant fragments followed by PF-deletion and that before PF-deletion, the predicate fragment in (46B) has the same structure with its full sentence counterpart, as shown in (48).

(48) [yeppu-ta-ko], John-un Mary-ka t. sayngkakha-n-ta.

In (48), the relative word order between the embedded subject and the embedded predicate established by the first Spell-out loses its effect because the rest of the sentence is elided and is not linearized. This is in line with Fox & Pesetsky (2005) and Takahashi (2004): Deletion of contradictory ordering statement accounts for the phenomenon mentioned as PF-repair. Crucial in (48) is that a violation of cyclic linearization requirement can be ameliorated by ellipsis. This fact leads us to the suggestion that the restriction imposed on predicate fronting is a restriction related to PF, namely cyclic linearization requirement.

5. Concluding Remarks

In this paper, we have explored the three issues on predicate fronting: extraction difference between predicate fronting and argument fronting

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12 Note that the counterpart of the name Mary in the fragment utterance can be a pronoun under Merchant’s (2004) analysis. Since a pronoun can be an unpronounced pro in Korean, the structure of (40) is possible.
put forward in Chung (2007), and relation between Case on subject and possibility of predicate fronting in relation to subject–to–object raising vs. prolepsis constructions as discussed in depth by Yoon (2007). We have shown that predicate fronting can be handled more elegantly under cyclic linearization analysis to account for various restrictions on predicate fronting which are not possibly accommodated under either the PBC or non–constituent account.

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