

A Constituency-based Explanation of Syntactic Restrictions on Korean Predicates*

Daeho Chung
(Hanyang University)

Chung, Daeho. 2011. A Constituency-based Explanation of Syntactic Restrictions on Korean Predicates. *Linguistic Research* 28(1), 199-221. This paper attempts to provide a unified explanation of two observations made in Chung (2007, 2008a, 2009) regarding syntactic restrictions on (embedded) predicates: Predicates are immobile and non-elidable. Given that a verb stem and its inflectional endings project independently at syntax and become merged only at PF (J. H.-S. Yoon 1993, 1994, 1997, Park 1994, J.-M. Yoon 1996), the verbal complex does not form a constituent in syntax. This non-constituency is argued to be responsible for the immobility and non-elidability of the predicate. In contrast, Ahn and Cho (2008a, b, 2009, 2010) propose a heterogeneous approach to the phenomena. Ahn and Cho (2008a, b) attribute the immobility to Fox and Pesetsky's (2004) Cyclic Linearization and Principle of Order Preservation, while Ahn and Cho (2009, 2010) attribute the non-elidability to scrambling of the surviving embedded element followed by an illicit CP ellipsis. It will be shown, however, that an inflected predicate is invisible to syntax anyhow and that the invisibility is well taken care of by a constituency-based account. (Hanyang University)

Key Words inflected predicate, immobility, non-elidability, constituency, cyclic linearization, licensing

1. Introduction

This paper is concerned with the two observations in (1):¹

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¹ By a 'predicate' I mean a verb stem augmented by prefinal and final endings: V-Aff_{prefinal}-Aff_{final}. See Yang (1972) and Sohn (1999, 354) among others for the list of prefinal affixes and final affixes.

- (1) a. Embedded ‘predicates’ (or embedded predicates plus some proper subset of their dependents) in Korean are immobile. (Chung 2007, 2008a)
- b. Embedded ‘predicates’ (or embedded predicates plus some proper subset of their dependents) in Korean are non-elidable. (Chung 2009)

(1a), which is observed in Chung (2007, 2008a), says that inflected predicates in Korean do not move, when other dependent elements stay *in situ*. The observation in (1b), which is made in Chung (2009), is that embedded ‘predicates’ in Korean do not get deleted either.²

There have been some explanations of the former observation proposed in the literature. Chung (2007, 2008a) proposes a constituency account under the assumption that a verb stem and its inflectional endings merge at PF (J. H.-S. Yoon 1993, 1994, 1997, Park 1994, J.-M. Yoon 1996). In contrast, Ahn and Cho (2008a, b) attribute the immobility of the embedded predicate to Fox and Pesetsky’s (2004) Cyclic Linearization (CL) and Principle of Order Preservation (POP). (See Chung 2009, for some other possible accounts that are ultimately discarded.)

² Chung (2009, 2011) argues that all Korean ‘predicates’, whether embedded or matrix and whether in an elliptical or non-elliptical context, are not syntactic constituents and invisible to syntax (immobile, undeletable, and unduplicable), as in Table II, although they sometimes appear to behave as constituents at the surface, as in the shaded areas in Table I. These apparently exceptional behaviors are argued to follow independently.

(i) Table I: Mobility/Deletability/Duplicability of Predicates and Non-Predicates (to be modified)

	Matrix		Embedded	
	Argument	Predicate	Argument	Predicate
Mobility	O	O	O	X
Deletability	O	O	O	X
Duplicability	O	O	O	O

(ii) Table II: Mobility/Deletability/Duplicability of Predicates and non-Predicates (final)

	Matrix		Embedded	
	Argument	Predicate	Argument	Predicate
Mobility	O	X	O	X
Deletability	O	X	O	X
Duplicability	O	X	O	X

As for the non-elidability of the embedded predicate, Chung (2009) claims that the same constituency requirement is responsible. In contrast, Ahn and Cho (2009, 2010) provide a 'no illicit CP ellipsis' account based on Lobeck (1995) and Merchant (2004), according to whom only a functional category licenses ellipsis. Not being a complement of a functional category, CP cannot be deleted.³

This paper makes the following claims. First, Ahn and Cho's (2008a, b) CL+POP account faces some problems with respect to the immobility of the embedded predicate. Second, regarding the non-elidability of the embedded predicate, Ahn and Cho's (2009, 2010) 'no illicit CP ellipsis' claim and Chung's (2009) constituency account may be compatible, though I do not fully commit myself to the former. The statement that syntax does not target the embedded predicate will be shown to be a valid generalization which calls for an explanation. Third, the invisibility of the predicate to syntax comes from the morpho-syntactic properties of the inflectional endings.

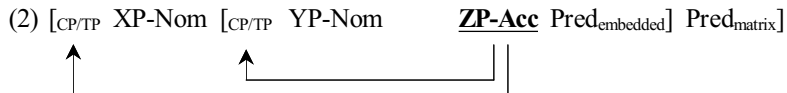
This paper is organized as follows. Section 2 takes some examples showing that embedded predicates are immobile and compares Chung's (2007, 2008a) account and Ahn and Cho's (2008a, 2008b). Section 3 concerns the non-elidability of the embedded predicate. Two competing accounts, Chung's (2009) constituency-based account and Ahn and Cho's (2009, 2010) 'no illicit CP ellipsis' account, are compared. Section 4 concludes the paper.

³ There have been some other interesting proposals made in the literature, though not extensively addressed in this work. Pointing out some problems with Ahn and Cho's (2009) account, Park (2009) proposes an account based on the isomorphic condition on ellipsis. Ahn and Cho (2010) responded to Park (2010) with a solution introducing *pro* instead of CP ellipsis in the problematic cases. Lee (2010) claims that all three accounts contain crucial problems with respect to the right node raising construction (RNR) and proposes another constituency account based on Kayne's (1994) universal SVO word order hypothesis. For his main argument to hold, however, he must stick to a deletion analysis of RNR constructions, despite various problems with the deletion analysis, and he has to assume some not fully motivated conditions on deletion.

2. Immobility of Embedded Predicates and Competing Accounts

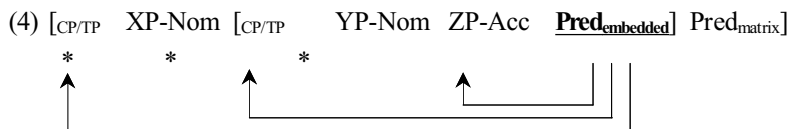
2.1 Immobility of Embedded Predicates

Non-predicates, that is, elements like arguments and adjuncts in the embedded clause, are free to undergo a short or long scrambling, as schematically represented in (2) and exemplified in (3).⁴



- (3) a. na-nun [John-i ecey **Mary-lul** manna-ess-ta-ko] I-Top
 J.-Nom yesterday M.-Dat meet-Pst-DE-C
 sayngkakha-n-ta.
 think-Pres-DE
 ‘I think that John met Mary yesterday.’
- b. na-nun [John-i **Mary-luli** ecey ei manna-ess-ta-ko] sangkakha-n-ta.
 c. na-nun [**Mary-luli** John-i ecey ei manna-ess-ta-ko] sangkakha-n-ta.
 d. **Mary-luli** na-nun [John-i ecey ei manna-ess-ta-ko] sangkakha-n-ta.

In contrast, inflected predicates cannot move at all, as schematically represented in (4) and exemplified in (5).

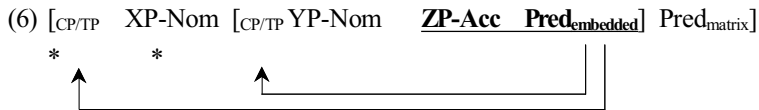


- (5) a. na-nun [John-i Mary-lul **salangha-n-ta-ko**] sayngkakha-n-ta.
 I-Top J.-Nom M.-Acc lovet-Pres-DE-C think-Pres-DE
 ‘I think that John loves Mary.’
- b. *na-nun [John-i **salangha-n-ta-koi** Mary-lul ei] sayngkakha-n-ta.

⁴ We are indifferent to the precise landing site of scrambled elements since it does not crucially affect the discussion.

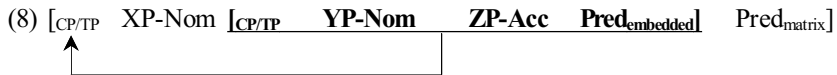
- c. *na-nun [**salangha-n-ta-koi** John-i Mary-lul ei] sayngkakha-n-ta.
- d. ***salangha-n-ta-koi** na-nun [John-i Mary-lul ei] sayngkakha-n-ta.

A predicate and a part (proper subset) of its dependents cannot move either, as represented in (6) and exemplified in (7).



- (7) a. na-nun [John-i **Mary-lul salangha-n-ta-ko**] sayngkakha-n-ta.
 I-Top J.-Nom M.-Acc lovet-Pres-DE-C think-Pres-DE
 ‘I think that **John** loves Mary.’
- b. *na-nun [[**Mary-lul salangha-n-ta-ko**]i John-i ei] sayngkakha-n-ta.
- c. ***[Mary-lul salangha-n-ta-ko]**i na-nun [John-i ei] sayngkakha-n-ta.

Of course, the whole embedded CP can move, as represented in (8) and exemplified in (9).

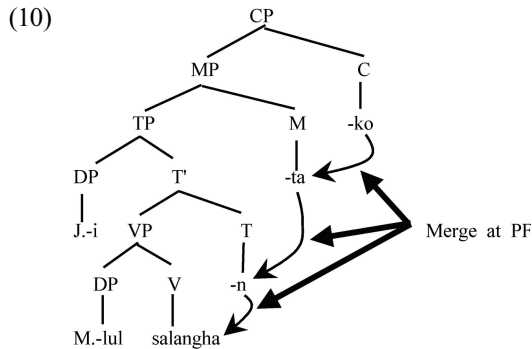


- (9) a. na-nun [**John-i Mary-lul salangha-n-ta-ko**] sayngkakha-n-ta.
 I-Top J.-Nom M.-Acc lovet-Pres-DE-C think-Pres-DE
 ‘I think that John loves Mary.’
- b. [**John-i Mary-lul salangha-n-ta-ko**]i na-nun ei sayngkakha-n-ta.

A natural question that arises is why a language like Korean displays such asymmetries. This question will be addressed in the remainder of this section. In the following subsections, I briefly summarize and evaluate Chung's (2007, 2008a) constituency-based account (Section 2.2.) and Ahn and Cho's (2008a, 2008b) CL+POP-based account (Section 2.3.), and then I point out some possible difficulties of the latter approach (Section 2.4.).

2.2 A Constituency Account (Chung 2007, 2008a)

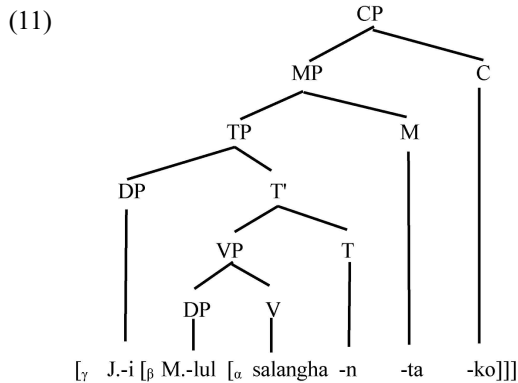
Chung (2007, 2008a) ascribes the ungrammaticality of sentences like (5b-d) and (7b-c) to the non-constituency of the moved elements based on the hypothesis that a verb stem and its inflectional endings project independently in syntax and merge at the level of PF. According to this PF-merge hypothesis (See H.-S. J. Yoon 1993, 1994, 1997, Park 1994, J.-M. Yoon 1996 among others), verbal endings in a language like Korean are independent heads at syntax that have their own projections and get merged to the last element of the preceding phrase at PF, as shown in (10) below.⁵



The embedded clause of the sentence in (5a), for example, will have the syntactic structure of (11):⁶

⁵ The PF-merge hypothesis has drawn its main argument from the scope interpretation of the verbal endings in the coordinate structure: Verbal endings that morphologically appear at the final conjunct are claimed to have scope over the entire coordinate structure. Chung (2005), however, shows that verbal endings, except for final endings, do not necessarily have scope over the non-final conjuncts. The syntactic behaviors of the predicate to be discussed in this work will compose a more substantive piece of evidence for the phrasal affix analysis of the verbal endings than the scope interpretation of the verbal endings in the coordinate structure.

⁶ Though ignored in this structure, the small *v* projection can be postulated. Also the subject can be placed under a predicate projection.



Given this syntactic structure, the so-called predicate in Korean is not a constituent. For example, in (11), the string *salangha-n-ta-ko* is not a constituent in syntax, though it may form a word at the morphological level. Not being a constituent, the string cannot undergo a syntactic operation including movement, accounting for the ungrammatical status of (5b-d). A similar comment can be made on the cases where the object + predicate string is fronted. The string *Mary-lul salangha-n-ta-ko* does not form a constituent, either, and it cannot move, accounting for the badness of (7b-c). In order for the so-called predicate, that is, the string *salangha-n-ta-ko*, to move at all, we have to pied-pipe all the dependents of the predicate, as in the example like (9b).

Some remarks are in order about the constituency-based account. First, not all constituents are able to move.⁷ For example, MP and TP in (11) are syntactic constituents, but they cannot move. I suspect that the unavailability of such movements is due to morphological restrictions that individual morphemes display. If, for example, MP moves, C *-ko* is stranded. However, it cannot stand alone as a bound morpheme. Similarly, if TP moves, then the string *-ta-ko* is stranded. However, the string morphologically requires a verbal host.⁸ Moreover, the string *salangha-n* is illegitimate as a morphological word. In other words, these illegitimate

⁷ I thank Jae-Woong Choe (p.c.) for raising this question. The same comment applies to the ellipsis data to be discussed in Section 3.

⁸ VP and TP (under the VP internal subject hypothesis) can in fact move, if Jo (2004) is right in claiming that the so-called *V-ki-V/ha* construction involves a clausal movement. Notice, however, that this construction satisfies all the morphological requirements. See Chung (2009, 2011).

strings are not listed in the 'vocabulary' in the sense of distributed morphology. A second remark to be made concerns the possibility that some element of the embedded CP has scrambled and subsequently the whole CP moves over the previously scrambled element, as illustrated in (12) below:

- (12) a. na-nun [CP **John-i Mary-lul salangha-n-ta-ko**] sayngkakha-n-ta.
 I-Top J.-Nom M.-Acc lovet-Pres-DE-C think-Pres-DE
 'I think that John loves Mary.'
- b. na-nun [**John-iji**] [CP **ei Mary-lul salangha-n-ta-ko**]
 sayngkakha-n-ta.
- c. *[CP **ei Mary-lul salangha-n-ta-ko**] na-nun [**John-iji**] ej
 sayngkakha-n-ta.

Since neither the first nor second operation involves any illegitimate movement, (12c) should be possible, contrary to fact. I would like to attribute the ungrammatical status of (12c) to an effect of a Proper Binding Condition (PBC, Fiengo 1977), whatever theory is responsible for PBC effects.⁹

2.3 A CL+POP Account (Ahn and Cho 2008a, b)

Ahn and Cho (2008a, b) provide an alternative solution to the immobility of a predicate. They crucially resort to Fox and Petssetsky's (2004) CL and POP. The gist of the two principles is that linearization applies phase-by-phase and the linear order fixed at a phase cannot be altered at a later phase. With this in mind, let us consider the relevant examples in (5) and (7), repeated as (13) and (14) with phases indicated.

- (13) a. [_{CP2} na-nun [_{CP1} John-i Mary-lul **salangha-n-ta-ko**] sayngkakha-n-ta]
 I-Top J.-Nom M.-Acc lovet-Pres-DE-C think-Pres-DE
 'I think that John loves Mary.'
- b. * [_{CP2} na-nun [_{CP1} John-i **salangha-n-ta-ko**_i Mary-lul **e**_i] sayngkakha-n-ta]
- c. * [_{CP2} na-nun [_{CP1} **salangha-n-ta-ko**_i John-i Mary-lul **e**_i] sayngkakha-n-ta]
- d. * [_{CP2} **salangha-n-ta-ko**_i na-nun [_{CP1} John-i Mary-lul **e**_i] sayngkakha-n-ta]

⁹ In the previous work (Chung 2007, 2009), I pointed out some weaknesses in the PBC account coupled with the VP internal subject hypothesis, but I did not deny the existence of PBC effects.

- (14) a. $[_{CP2}$ na-nun $[_{CP1}$ John-i **Mary-lul salangha-n-ta-ko**] sayngkakha-n-ta]
 I-Top J.-Nom M.-Acc lovet-Pres-DE-C think-Pres-DE
 ‘I think that **John** loves Mary.’
 b. * $[_{CP2}$ na-nun $[_{CP1}$ [**Mary-lul salangha-n-ta-ko**]_i John-i e_i] sayngkakha-n-ta]
 c. * $[_{CP2}$ [**Mary-lul salangha-n-ta-ko**]_i na-nun $[_{CP1}$ John-i e_i] sayngkakha-n-ta]

According to the CL+POP account, sentences like (13d) are ungrammatical because the word order established in the embedded CP phase is not preserved in the matrix CP phase, as illustrated in (15) below. In the embedded CP phase, the CL fixes the linear order: *John-i* precedes *Mary-lul*, which precedes *salangha-n-ta-ko*. In the matrix CP phase, however, the linear order has been changed such that the embedded predicate *salanghan-ta-ko* precedes the embedded subject *John-i* and embedded object *Mary-lul*, violating the POP. The ungrammatical status of (14c) can be similarly explained, since the linear order established in the embedded CP phase is altered in the matrix CP phase, as shown in (16) below.

- (15) e.g. (13d): *POP
 Linear Order in phase CP1: **John-Nom**>>**Mary-Acc**>>**Pred**_{embedded}
 Linear Order in phase CP2: **Pred**_{embedded}>>**I-Topic**>>**John-Nom**>>
Mary-Acc>>**Pred**_{matrix}
- (16) e.g. (14c): *POP
 Linear Order in phase CP1: **John-Nom**>>**Mary-Acc**>>**Pred**_{embedded}
 Linear Order in phase CP2: **Mary-Acc**>>**Pred**_{embedded}>>**I-Topic**>>
John-Nom>>**Pred**_{matrix}

2.4 Problems with the CL+POP Account

Ahn and Cho’s (2008) system seems to work fine. However, a question that may arise is what prevents the linear order from being changed in the embedded CP phase. Notice that rearranging the word order within in a phase is allowed in other instances of cyclic movement, for example, wh-movement out of an embedded clause, as in (17).

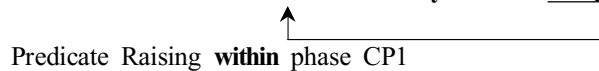
(17) Who_i do you think e_i that John loves e_i ?



Without the rearrangement of the linear order within the embedded CP phase, the linear order established in the embedded CP phase would be necessarily altered in the matrix CP phase, violating the POP. Thus cyclic movement is necessarily assumed for wh-movement. Now let us go back to the sentences like (13d). Just as in wh-movement in (17), what if we first rearrange the linear order within in the embedded CP phase, placing the embedded predicate before the embedded subject and object, as shown in (18)?

(18) e.g. (13d)

a. Order in the Base Structure: **John-Nom**>> **Mary-Acc** >> **Pred_{embedded}**



Predicate Raising **within** phase CP1

b. Linear Order in phase CP1: **Pred_{embedded}** >> **John-Nom**>>**Mary-Acc**

c. Linear Order in phase CP2: **Pred_{embedded}**>>**I-Topic**>>**John-Nom**>>

Mary-Acc>>**Pred_{matrix}**

Given that an embedded predicate moves cyclically, as in (18a), the derivation for (13d) satisfies the POP. For the CL+POP account to work, therefore, it is necessary to provide a reason for the lack of the predicate raising from the beginning. Ahn and Cho (2008a, b) suspect that some sort of anti-locality is responsible. The predicate fronting is banned because the raising in (18a) is too local.¹⁰ Notice, however, that embedded arguments can undergo a short scrambling. Besides, the non-head movement, as in (14b-c), has to be explained somehow. If an

¹⁰ There seems to be some internal inconsistency in Ahn and Cho's (2008a,b) account as to the lack of predicate movement. On the one hand, Ahn and Cho (2008b, 66) assume 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." If I understand correctly, this means that an inflected verb can be inserted under V in syntax. On the other hand, Ahn and Cho (2008b, 66-67, fn 3) claim that the inflected predicate cannot be adjoined to the embedded small v or to the embedded CP since an adjunction of an element to its own projection is banned. It may be said such an adjunction operation is barred since heads in a head-final language cannot undergo a leftward movement, as they (2008b, 62, fn 1) note. Notice, however, if an inflected verb is lexically inserted under V, it should be able to move leftward when its complement moves along, which is not borne out, as in (14b, c).

inflected verb is lexically inserted under V, there is no reason not to move it (along with some internal argument) to a higher projection (v or C) and rearrange the word order in the embedded clause. Given the possibility of the word order rearrangement in the first phase, however, the embedded predicate should be able to precede other elements that depend on the predicate, contrary to fact.

A second problem with the CL+POP account is that it makes an incorrect prediction with respect to rightward movement. It should be possible for an embedded predicate to move rightward across a matrix element without violating the POP. This rightward movement is disallowed, however, as illustrated in (19) and (20) below. Notice that the rightward movement satisfies the POP since the word order in the embedded CP has not been altered in the matrix CP, as shown in (21).

(19) *Subj_{Matrix} ... [CP Subj_{embedded} ... e_i] ... Pred_{Matrix} [Pred_{embedded}]_i

(20) *_{[CP₂ na-nun} [_{CP₁ John-i} Mary-lul e_i] sayngkakha-n-ta]
 I-Top J.-Nom M.-Acc think-Pres-DE
[salangha-n-ta-ko]_i
 love-Pres-DE-C
 ‘I think that John loves Mary.’

(21) Linear Order in phase CP1: **John-Nom**>>**Mary-Acc**>>**LOVE_{embedded}**
 Linear Order in phase CP2: I-Topic>>**John-Nom**>>**Mary-Acc**>>
 THINK_{matrix}>>**LOVE_{embedded}**

In sum, Ahn and Cho's (2008a, 2008b) CL+POP account explains the immobility of an embedded predicate under the POP coupled with the anti-locality condition. Under the assumption that an inflected verb is lexically inserted under V, however, the predicate movement (possibly along with some internal argument) does not violate the anti-locality condition. (See also footnote 10). Furthermore, the CL+POP account makes an incorrect predication with respect to rightward movement.

3. Non-ellipsis of Embedded Predicates and Competing Accounts

This section addresses the non-ellipsis of the embedded predicate with respect to two competing analyses. We will first see how the embedded predicate is restricted with respect to ellipsis (Section 3.1), and then discuss Chung's (2009) constituency-based account (Section 3.2.) and Ahn and Cho's (2009, 2010) account in terms of the licensing condition on ellipsis (Section 3.3.). Finally, we will argue that the non-ellipsis of inflected predicates calls for an explanation nevertheless (Section 3.4.).

3.1 Non-ellipsis of Embedded Predicates

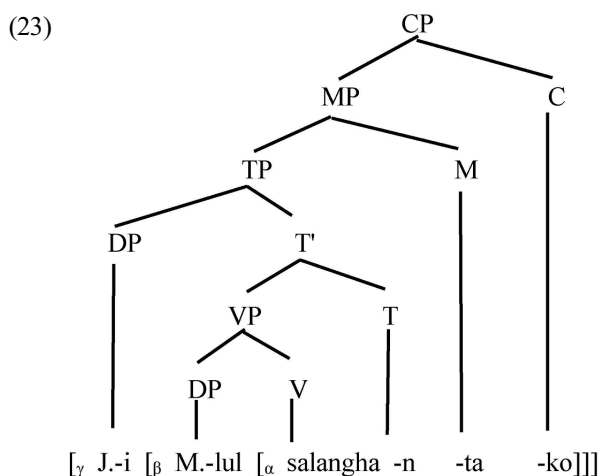
Consider the discourse in (22), to see the non-ellipsis of inflected predicates:

- (22) A: na-nun [John-i Mary-lul salangha-n-ta-ko] mit-nun-ta.
 I-Top J.-Nom M.-Acc love-Pres-DE-C believe-Pres-DE
 'I believe John loves Mary.'
- B: *haciman na-nun [John-i Sue-lul **salangh-n-ta-ko**] mit-nun-ta.
 but I-Top J.-Nom S.-Acc love-Pres-DE-C believe-Pres-DE
 (intended) 'But I believe that John loves Sue.'
- B': *haciman na-nun [Tom-i **Mary-lul salangh-n-ta-ko**] mit-nun-ta.
 but I-Top T.-Nom M.-Acc love-Pres-DE-C believe-Pres-DE
 (Intended) 'But I believe that Tom loves Mary.'
- B'': na-to [~~John-i~~ ~~Mary-lul salangh-n-ta-ko~~] mit-nun-ta.
 I-too J.-Nom M.-Acc love-Pres-DE-C believe-Pres-DE
 'I believe that John loves Mary, too.'

As shown in the example in (22B), an embedded predicate does not undergo ellipsis despite the presence of a potential antecedent in the discourse. Ellipsis cannot target the combination of an embedded predicate and its internal argument, excluding the embedded subject, either, as shown in (22B'). As shown in (22B''), the embedded predicate can undergo ellipsis only when all the dependents also undergo ellipsis. (See below for some qualification.)

3.2 Chung's (2007, 2009) Constituency Account

The constituency-based account can easily accommodate the deletion fact, provided that ellipsis (like other syntactic operations) only applies to constituents.¹¹ First, consider the structure for the embedded clause in (23), repeated from (11).



The strings α and β in (23) do not form a constituent and therefore do not undergo any syntactic operation including ellipsis, explaining the ungrammatical status of (22B and B'). γ is a constituent in syntax and is deletable as in (22B").¹²

¹¹ Mukai (2003) and Ahn and Cho (2006) claim that ellipsis can target a non-constituent string. See Chung (2008b), however, for some potential problems with the string deletion approach.

¹² One of the reviewers wonders whether the same constituency account can handle the fact that embedded predicates even in a language like English are severely constrained as to syntactic operations such as movement and deletion, as in (i) and (ii) below:

- (i) a. *Loves I think John ___ Mary. cf. (5d)
 b. *[loves Mary] I think John _____. cf. (7c)
- (ii) a. *But I believe Tom loves ~~Mary~~. cf. (22B')
 b. *John, I believe ___ loves ~~Mary~~. cf. (25b)
 c. *I believe John ~~gave a book~~ to Sue. cf. (29B)

First of all, we need a theory on how inflected verbs (verbs augmented by inflection) are formed in English: lexically, syntactically, or morphologically. If they are formed morphologically, i.e., at a post-syntactic level, just as in Korean, (ia) will be accounted for. (In fact (ia) also violates the so-called head movement constraint, even when *loves* is a lexically introduced or syntactically

3.3 Ahn and Cho's (2009, 2010) 'No CP Ellipsis' Approach

Ahn and Cho (2009, 2010) claim, following Lobeck (1995) Merchant (2001, 2004), that only a functional category licenses ellipsis. Therefore, CP cannot be deleted because it is not a complement of a functional category.¹³ According to them, (22B, B') are ungrammatical because their structures involve an illicit CP ellipsis preceded by a scrambling of the overt elements to the matrix clause, as illustrated in (22)'.

- (22)' B: *haciman na-nun John-i_i Sue-lul_j [~~CP C_i C_j~~ **salangh-n-ta-ko**]
 but I-Top J.-Nom S.-Acc love-Pres-DE-C mit-nun-ta.
 believe-Pres-DE
 (intended) 'But I believe that John loves Sue.'

derived head.) (ib) and (iia,b) are ungrammatical, since an intermediate projection (I' in these sentences) is invisible to syntax. The ungrammatical status of (iic) can follow since the elided string of words does not form a constituent. Suppose now that inflected verbs are syntactically formed by head movement. (ia) and (iic) will be still bad due to the head movement constraint, and due to the non-constituency, respectively. The rest of the sentences will be ungrammatical again due to the invisibility of an intermediate projection. Finally, what if inflected verbs are lexically formed and stay under V? (1a) and (iic) will be excluded for the afore mentioned reasons. (iib,c) can be said to be ungrammatical since VP deletion in English is licensed by an overt head in I. (ib) will remain as a problem. It is noteworthy, however, that the current work claims that syntactic operations target a constituent and not that every constituent undergoes a syntactic operation, as mentioned in Section 2.2. Further research seems to be required to decide whether the restriction on the embedded predicates is universally constrained or not.

¹³ Ahn and Cho's (2009b) claim (based on Merchant 2004) that ellipsis targets the complement of a functional category and that CP cannot be an ellipsis target as complement of a lexical category (matrix verb) leads to an interesting implication as to the decomposition of movement into a combination of multiple syntactic operations, i.e., Copy + Merge + Ellipsis (Chomsky 1993, Nunes 1995, 2004, Bošković 2001, Bošković and Nunes 2004, Hornstein 2009, among others). CP can be displaced in English and Korean. Thus, either the decomposition of movement into multiple operations including ellipsis or the ellipsis target story itself has to be modified. (Movement may be an instance of multi-dominance, as argued in Johnson 2010.) The non-elidable property of CP also affects the theory of the RNR. CP can be RNRed, as exemplified below:

- (i) The scientist claimed but did not prove that the earth is round.

If Ahn and Cho's (2009, 2010) claim is correct, then RNR cannot be an instance of ellipsis. This argues against the PF deletion analysis of the RNR, one of the main stream analyses entertained in the literature (Bošković 1997, Kim 1997, Hartmann 2000, 2003, Merchant 2001, Sohn 2001, Mukai 2003, An 2007, Ahn and Cho 2006, Ha 2006, 2008a, b, 2009, etc.).

B': **haciman na-nun Tom-i [~~CP-C_i Mary-lul salangha-n-ta-ko~~]*
 but I-Top T.-Nom M.-Acc love-Pres-DE-C
mit-nun-ta.
 believe-Pres-DE
 (Intended) 'But I believe that Tom loves Mary.'

As for the grammatical status of (22B''), they argue that it does not involve an illicit CP ellipsis. Instead, verb *mit* 'to believe' takes a *pro* object, as in (22B'').

(22)' B'': na-to **pro** mit-nun-ta.
 I-too believe-Pres-DE 'I believe (it), too.'

A piece of evidence they provide is the fact that *mit* in (22B'') cannot be replaced by *sayngkakha* 'to think', a verb that cannot take *pro*, as shown in (24).

(24) A: na-nun [John-i Mary-lul salangha-n-ta-ko] **sayngkakha-n-ta.**
 I-Top J.-Nom M.-Acc love-Pres-DE-C think-Pres-DE
 'I think John loves Mary.'
 B'': *na-to [~~John-i Mary-lul salangha-n-ta-ko~~] **sayngkakha-n-ta.**
 I-too J.-Nom M.-Acc love-Pres-DE-C think-Pres-DE
 'I think John loves Mary.'

(24B'') necessarily involves an instance of illicit CP ellipsis, accounting for its ungrammatical status.¹⁴

Another piece of evidence they provide for the 'no illicit CP ellipsis' account is with examples such as (25).

(25) a. na-nun [John-i Mary-lul salangha-n-ta-ko] mit-nun-ta.
 I-Top J.-Nom M.-Acc love-Pres-DE-C believe-Pres-DE
 'I believe John loves Mary.'
 b. ***John-ii** na-nun [~~C_i Mary-lul salangha-n-ta-ko~~] mit-nun-ta.
 J.-Nom I-Top M.-Acc love-Pres-DE-C believe-Pres-DE
 'I believe John loves Mary.'

¹⁴ See Park (2009, 900-901, fn2) for the claim that verbs like *sayngkakha* simply do not take a null anaphoric complement due to their idiosyncratic lexical properties.

- c. ***Mary-luli** na-nun [~~John-i e, salangha-n-ta-ko~~] mit-nun-ta.
 M.-Acc I-Top J.-Nom love-Pres-DE-C believe-Pres-DE
 'I believe John loves Mary.'
- d. ***John-ii Mary-lulj** na-nun [~~e, e, salangha-n-ta-ko~~] mit-nun-ta.
 J.-Nom M.-Acc I-Top love-Pres-DE-C believe-Pres-DE
 'I believe John loves Mary.'

In (25b-d), some of the embedded elements scrambled to the sentence initial position, while the embedded CP has been deleted. Although the verb *mit*, 'to believe', may take a *pro* object, *pro* cannot replace the elided CP in (25b-d) because of the full interpretation principle. The replacement will leave the bold-faced elements uninterpreted, as in (26).

- (26) a. na-nun [John-i Mary-lul salangha-n-ta-ko] mit-nun-ta.
 I-Top J.-Nom M.-Acc love-Pres-DE-C believe-Pres-DE
 'I believe John loves Mary.'
- b. ***John-ii** na-nun **pro** mit-nun-ta.
 J.-Nom I-Top believe-Pres-DE
 'I believe John loves Mary.'
- c. ***Mary-luli** na-nun **pro** mit-nun-ta.
 M.-Acc I-Top believe-Pres-DE
 'I believe John loves Mary.'
- d. ***John-ii Mary-lulj** na-nun **pro** mit-nun-ta.
 J.-Nom M.-Acc I-Top believe-Pres-DE
 'I believe John loves Mary.'

Thus, examples like (25b-d) appear to favor Ahn and Cho's (2009, 2010) 'no illicit CP ellipsis' account, but disfavor Chung's (2009) constituency-based account.

3.4 Non-elidability of an Embedded Predicate Still Asks for an Account

In this section, it will be argued that, whether CP ellipsis is banned or not, grammar should address the non-elidability of the predicate. Ahn and Cho (2009, 2010) attribute the ungrammatical status of (22B) and (22B') to an illicit CP ellipsis,

but their argument holds only under the assumption that the surviving embedded elements have undergone scrambling out of the embedded clause prior to the CP ellipsis. (See (22B)' and (22B)'' in the previous section.) What if these elements remain within the embedded CP? If scrambling is optional, which does seem to be the case, and the surviving embedded elements remain within the embedded CP, they have to address the problem of non-elidability of the embedded predicate. Thus, it is likely that both the ban on CP ellipsis and the ban on predicate ellipsis are required: the former for cases where the surviving embedded elements undergo scrambling; the latter for cases where no scrambling takes place.

The ungrammatical status of (25b-d) is also equivocal as to the two theories. Although these examples appear to indicate that Chung's (2007, 2009) constituency approach fails, the strings in these examples do not necessarily support Ahn and Cho's (2009, 2010) account, either. Notice there is an alternative analysis, which involves neither a CP ellipsis nor a *pro* object. As illustrated in (26)', these examples can result from deleting the embedded predicate (possibly along with some dependents) and then moving the whole embedded clause.

- (26)' b. ***[John-i Mary-lul — salangha-n-ta-ko]** ; na-nun e_j mit-nun-ta.
 J.-Nom M.-Acc love-Pres-DE-C I-Top believe-Pres-DE
 'I believe John loves Mary.'
- c. ***[Mary-lul_i [John-i e_j salangha-n-ta-ko]**]_j na-nun e_j mit-nun-ta.
 M.-Acc J.-Nom love-Pres-DE-C I-Top believe-Pres-DE
 'I believe John loves Mary.'
- d. ***[John-i Mary-lul salangha-n-ta-ko]**_j na-nun e_j mit-nun-ta.
 J.-Nom M.-Acc love-Pres-DE-C I-Top believe-Pres-DE

Since there is nothing wrong with the CP movement, the ungrammatical status of sentences such as (25b-d) should be attributed to the non-elidability of the embedded predicate (possibly along with a proper subset of its dependents). Therefore, grammar should somehow account for the non-elidability of an embedded predicate.

Ahn and Cho do seem to be aware of the non-elidability of an embedded predicate, but for a different reason. In a footnote, they state that non-predicate elements cannot remain within the embedded clause if a predicate is deleted, since gapping and stripping cannot be allowed in the embedded clause in general even in

a language like English, taking the examples in (27):

- (27) (=Ahn and Cho 2009c: 269, footnote 2, their (i))
- a. *Alfonse stole the emeralds, and I think Mugasy the pearls.
(Hankamer 1979: 19)
 - b. *The critics praised your book, and someone told me that the poem too.

Some comments are in order as to their account. First, it has to be explained why gapping or stripping is disallowed in the embedded clause. Second, English does seem to allow gapping in the embedded context, as exemplified in (28).

- (28)
- a. My son, do not despise the LORD's discipline and do not resent his rebuke, because the LORD disciplines those he loves, as **a father [disciplines] the son he delights in.** (Proverbs 3: 11-12, NIV)
 - b. May I never boast except in the cross of our Lord Jesus Christ, through which the world has been crucified to me, and **I [haves been crucified] to the world.** (Galatians 6:14, NIV)
 - c. But if I do it, even though you do not believe me, believe the miracles, that you may know and understand that the Father is in me, and **I [am] in the Father.**" (John 10: 38, NIV)
 - d. It is true that some preach Christ out of envy and rivalry, but **others [preach] out of goodwill.** (Philippians 1:15, NIV)
 - e. For I know how many are your offenses and **how great are your sins.** (Amos 5:12, NIV)

Differences between sentences such as (27a) and (28) warrant further study,¹⁵ but it is clear that gapping in the embedded context is, at least sometimes, allowed in English, while predicate ellipsis in the embedded context is plainly disallowed in Korean.

¹⁵ Sung-Ho Ahn (p.c.) and Myung-Kwan Park (p.c.) point out to me that examples in (28) can be accounted for by Johnson's (1994) analysis of gapping: a predicate can move leftward out of a coordinate structure in an ATB fashion. This kind of movement is blocked in a structure like (27a) due to the presence of a complementizer.

A third remark I would like to make is that no embedded element can remain overt when the embedded predicate is missing, no matter how many elements remain undeleted:

- (29) A: [na-nun [John-i Mary-eykey chayk-ul cwu-ess-ta-ko]
 I-Top J.-Nom M.-Dat book-Acc give-Pst-DE-C
 mit-nun-ta.
 believe-Pres-DE
 ‘I believe that John gave Mary a book.’
 B: #[na-nun [John-i Sue-eykey ~~chayk-ul~~ ~~cwu-ess-ta-ko~~]
 I-Top J.-Nom S.-Dat book-Acc give-Pst-DE-C
 mit-nun-ta.
 believe-Pres-DE
 (Intended) ‘I believe that John gave Sue a book.’

Utterances like (29B) can be equated neither with gapping nor stripping: It is not a gapping construction since what is deleted is not a predicate alone; It is also not a stripping since what is left is more than one element in the embedded clause. Finally, it is yet to be confirmed whether the lack of predicate deletion in Korean can be equated with gapping or stripping in English. Notice that the verb in English does not necessarily appear at the right edge of a clause, while the predicate in Korean is fixed at the right edge at least in the embedded context (and, arguably, in the matrix context as well, if Chung 2009, 2011 is right).

4. Summary and Conclusion

Chung (2009) provides a unified explanation of the immobility and non-elidability of the embedded predicate. Under the assumption that a verb stem and its inflectional endings project independently at syntax and merge only at PF (J. H.-S. Yoon 1993, 1994, 1997, Park 1994, J.-M. Yoon 1996), the verbal complex does not form a constituent in syntax, and such a non-constituent element cannot be targeted by syntactic operations like movement and ellipsis. In contrast, Ahn and Cho (2008a, b, 2009, 2010) take a heterogeneous approach to the phenomena. Ahn

and Cho (2008a, b) attribute the immobility to Fox and Pesetsky's (2004) Cyclic Linearization (CL) and Principle of Order Preservation (POP). As for the non-elidability of the embedded predicate, Ahn and Cho (2009, 2010) provide a 'no illicit CP ellipsis' account: CPs cannot undergo ellipsis since they are not a complement of a functional category (Lobeck 1995, Merchant 2001, 2004).

Ahn and Cho's (2008a, 2008b) CL+POP account of the immobility of the embedded predicate crucially needs an anti-locality condition as an auxiliary requirement. We have seen, however, that, under their own assumption that an inflected verb is lexically inserted, there is no reason not to move the embedded verb (possibly along with internal arguments) within the embedded CP phase, without violating the anti-locality condition. (See also footnote 10). Given this possibility, their CL+POP account fails to capture the immobility of the embedded predicate. Furthermore, we have seen that the CL+POP account makes a wrong predication with respect to rightward movement.

Ahn and Cho (2009, 2010) account for the non-elidability of the embedded predicate in terms of a licensing condition on ellipsis. They reanalyze all the problematic cases with respect to the non-elidability of the embedded predicate as involving a derivational history in which surviving embedded elements have scrambled to the matrix clause and an illegitimate CP ellipsis takes place. Such a derivation is disallowed in their system since CP cannot be deleted as a complement of a lexical category (V). Notice, however, that, unless the scrambling in such a structure proves to be obligatory, the surviving embedded elements may remain in the imbedded clause; grammar should address the non-elidability of the embedded predicate.

In conclusion, the statement that inflected predicates in Korean are invisible to syntax is a correct generalization which has to be addressed by grammar. We have argued that Chung's (2007, 2008a, 2009) constituency account based on the PF merge of a verb stem and its inflectional endings deals well with the generalization. To block the illicit case of CP ellipsis, we may have to assume, with Lobeck (1995), Merchant (2001, 2004), and Ahn and Cho (2009, 2010), that only a functional category licenses ellipsis.

References

- Ahn H.-D. and S. Cho. 2008a. On predicate fronting, a paper presented at the winter conference of the Korean Linguistic Society, February 14-15, Choongang University.
- Ahn H.-D. and S. Cho. 2008b. Cyclic linearization analysis of predicate fronting. *Studies in Modern Grammar*, 54, 57-82.
- Ahn, H.-D. and S. Cho. 2009. On the absence of CP ellipsis in English and Korean. *Korean Journal of Linguistics*, 34, 267-281.
- Ahn, H.-D. and S. Cho. 2010. More on the absence of CP ellipsis: A reply to Park (2009). *Studies in Generative Grammar*, 20, 137-148.
- Ahn, H.-D. and Y. Cho. 2006. A dual analysis of verb-less coordination in Korean. *Language Research*, 42(1), 47-68.
- An D.-H. 2007. New arguments of right node raising as PF deletion. *Proceedings of the 34th Western Conference on Linguistics*, 9-21.
- Bošković, Ž. 1997. Two notes on right node raising. M. R. Mondonedo and E. Ticio (eds.), *University of Connecticut Working Papers in Linguistics*, 12, 13-24. Storrs, CT: Department of Linguistics, University of Connecticut.
- Bošković, Ž. 2001. *On the Nature of the Syntax-Phonology Interface: Cliticization and Related Phenomena*. Amsterdam: Elsevier Science.
- Bošković, Ž. and J. Nunes. 2004. The copy theory of movement: A view from PF. Ms. University of Connecticut, Storrs and Universidade de São Paulo.
- Chomsky, N. 1993. A minimalist program for linguistic inquiry. In K. Hale and S. J. Keyser (eds.), *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, 1-52. Cambridge, Mass.: The MIT Press.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge, Mass.: The MIT Press.
- Chung, D. 2005. What does bare *-ko* coordination say about post-verbal morphology in Korean? *Lingua*, 115, 549-568.
- Chung, D. 2007. On the discrepancy between fronted predicates vs. fragmented predicates. *Studies in Modern Grammar*, 50, 1-26.
- Chung, D. 2008a. On the syntax of right dislocation. a paper presented at the 2008 LSK Winter Conference, Feb. 14, 2008, Chooang Univ.
- Chung, D. 2008b. Some remarks on Ahn and Cho's (2006) dual analysis of Korean RNR. *Linguistic Research*, 25(3), 149-169.
- Chung, D. 2009. Do not target a predicate: it is not a constituent. a paper presented at The Sixth Workshop on Altaic Formal Linguistics, Nagoya, Japan.
- Chung, D. 2010. An elliptical coordination analysis of the right dislocated construction in Korean. *The Korean Journal of Linguistics*, 17(4), 1-23.
- Chung, D. 2011. Non-constituency of inflected predicates and some apparent

- counterexamples. ms. Hanyang University.
- Fiengo, R. On trace theory. *Linguistic Inquiry*, 8, 35-62.
- Fox, D. and D. Pesetsky, 2004. Cyclic linearization of syntactic structure. *Theoretical Linguistics*, 31(1-2), 1-46.
- Ha, S. 2006. Multiple dominance CAN'T, but ellipsis CAN account for right node raising. In *Proceedings from the 42nd Annual Meeting of the Chicago Linguistic Society - Main Session*, 17-31. Chicago: Chicago Linguistic Society.
- Ha, S. 2008a. On ellipsis features and right node raising. In S. Blaho, C. Constantinescu and E. Schoorlemmer (eds.), *Proceedings of ConSOLE XV*, 67-90. University of Leiden.
- Ha, S. 2008b. Ellipsis, right node raising, and across-the-board constructions. Ph.D. dissertation. Boston University.
- Ha, S. 2009. An ellipsis account of right node raising in Korean. In S. Tatevosov (ed.), *Investigations into Formal Altaic Linguistics: Proceedings of WAFL3*, 208-222. Moscow: MAKS Press.
- Hankamer, J. 1979. *Deletion in coordinate structures*. New York: Garland.
- Hartmann, K. 2000. *Right Node Raising and Gapping: Interface Conditions on Prosodic Deletion*. John Benjamins: Amsterdam.
- Hartmann, K. 2003. Background matching in right node raising constructions. K. Schwabe K. and S. Winkler (eds.), *The Interfaces: Deriving and Interpreting Omitted Structures*, 121-151. Amsterdam: John Benjamins Publishing Company.
- Hornstein, N. 2009. *A Theory of Syntax Minimal Operations and Universal Grammar*. Cambridge: Cambridge University Press.
- Jo, C.-M. 2004. Grammatical effects of topic and focus information. Ph.D. dissertation. University of Illinois at Urbana-Champaign.
- Johnson, K. 1994. Bridging the gap. Ms. University of Massachusetts, Amherst, MA.
- Johnson, K. 2010. The copy theory of movement. a talk given at the Seoul International Conference on Generative Grammar, August 17, 2010.
- Kim, J.-S. 1997. Syntactic focus movement and ellipsis: A minimalist approach. Ph.D. dissertation. University of Connecticut.
- Lee, J.-S. 2011. Kwuke nayphocel swule saynglyak pwucay hyunsang 'On the absence of embedded predicate ellipsis in Korean'. *The Linguistic Association of Korea Journal*, 18(4), 125-145.
- Lobeck, A. 1995. *Ellipsis: Functional Heads, Licensing, and Identification*. Oxford: Oxford University Press.
- Merchant, J. 2001. *The Syntax of Silence: Sluicing, Islands and the Theory of Ellipsis*. Oxford University Press.
- Merchant, J. 2004. Fragments and ellipsis. *Linguistics and Philosophy* 27.6, 661-738.
- Mukai, E. 2003. On verbless conjunction in Japanese. In M. Kadowaki and S. Kawahara (eds.), *Proceedings of the 33rd North East Linguistic Society*, 205-224. Amherst, MA:

GLSA, Umass.

- Nunes, J. 1995. The copy theory of movement and linearization of chains in the minimalist program. Ph.D. dissertation, University of Maryland.
- Park, M.-K. 1994. A morpho-syntactic study of Korean verbal inflection. Ph.D. dissertation, University of Connecticut.
- Park, M.-K. 2009. An (impossible) excursion into matrix [Spec, vP] out of an elided complement clause in Korean. *Korean Journal of Linguistics*, 34, 895-917.
- Sohn, H.-M. 1999. *The Korean Language*. Cambridge, England: Cambridge University Press.
- Sohn, K.-W. 2001. Deletion and right node raising in Korean and English. *Studies in Generative Grammar*, 11, 485-501.
- Yang, I.-S., 1972. *Korean Syntax: Case Markers, Delimiters, Complementation, and Relativization*. Seoul: Kwangmwunsa.
- Yoon, J. H.-S. 1993. Tense, coordination and clausal structure of English and Korean. *Harvard Studies in Korean Linguistics*, 5, 436-448.
- Yoon, J. H.-S. 1994. Korean verbal inflection and checking theory. In Harley. H. and C. Phillips (eds.), *MIT Working Papers in Linguistics: Morphology-Syntax Connection*, 22, 251-270. Cambridge, Mass.: MIT Press.
- Yoon, J. H.-S. 1997. Coordination (a)symmetries. S. Kuno et al. (eds.), *Harvard Studies in Korean Linguistics*, 7, 3-32. Seoul, Korea: Hanshinmwunhwasa.
- Yoon, J.-M. 1996. Verbal coordination in Korean and English and the checking approach to verbal morphology. *Korean Journal of Linguistics*, 21, 1105-1135.

Daeho Chung

Hanyang University
1271 Sa 3-dong, Sangnok-gu, Ansan-si
Gyeonggi-do 426-791, Korea
E-mail: cdaeho@hanyang.ac.kr

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