

# Mismatches in Korean Copula Constructions and Linearization Effects

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## Abstract

One main complexity of the copula constructions concerns a mismatch between morphology and syntactic constituency: the copula seems to form a morphological unit with the immediately preceding element, whereas in terms of syntax the copula appears to take this as its syntactic complement. In capturing such mismatches, we show that the copula is treated as an independent verb at the level of tectogrammatical structure (or syntax tree), whereas as a bound morpheme at the level of phenogrammatical structure (or domain tree), in terms of Dowty 1992 (or Reape 1994). This paper, adopting the notion of DOMAIN in HPSG, shows that copula constructions are a subtype of *compacting-constructions*. These constructions compact the domain value of the copula and that of its preceding element together into one domain unit, eventually making it inert to syntactic phenomena such as scrambling, deletion and pro-form substitution. This construction-based approach provides a clean analysis for the formation of the copula construction and related phenomena.

## 1 Some Basic Properties

The copula *i-ta* in Korean, semantically vacuous, behaves just like an adjective (or a stative verb) in that it inflects in the same ways as other adjectives do. For example, it does not host a present tense suffix (*n*)*un*, nor can it host a negative marker *mos* ‘not’:

- (1) a. alumtap-(*\*nun*)-ta  
beautiful-Pres-Decl  
b. *\*mos*-alumtap-ta  
Neg-beautiful-Decl
- (2) a. haksayng i-(*\*nun*)-ta  
student Cop-Pres-Decl  
b. *\*haksayng mos*-i-ta  
student NEG-Cop-Decl

One main complexity of the copula constructions concerns a mismatch between morphological and syntactic constituency: the copula seems to form a morphological unit with the preceding nominal element *haksayng* ‘student’ in (3), whereas in terms of syntax the copula appears to take as its syntactic complement this nominal and the preceding modifier *chakha-n* ‘honest’ in (3):

- (3) John-nun [chakha-n haksayng] i-ta.  
John-Top honest student Cop-Decl  
‘John is a honest student.’

## 1.1 Morphological Unity

Various strict positional and morphological constraints indicate that the copula forms a morphological unit with the preceding element. Though the copula appears to attach to various nominal hosts, it cannot co-occur with some post-nominal particles. Following Yang (1972) and Cho and Sells (1995), we could take (4) as a template for the nominal system with (5) as the membership of each slot.

(4) Noun-Root + Postposition + Conjunctive (X-LIM) + Delimiter (Z-LIM)

- (5) a. Postpositions: *ekey* ‘dative’, *ey* ‘locative’, *(u)lo* ‘instrument’, *kkaci* ‘goal’,...  
 b. Conjunctives: *hako* ‘conjunctive’, *pota* ‘comparator’, *pwuthe* ‘from’, *chelem* ‘like’,...  
 c. X-LIM: *man* ‘only’, *kkaci* ‘even’, *cohcha* ‘even’, *pakkey* ‘only’,...  
 d. Z-LIM: *(n)un* ‘topic’, *to* ‘also’, *(i)lato* ‘even’, *i/ka* ‘nominative’, *(l)ul* ‘accusative’,...

Given these, what we can observe is that the copula cannot appear after a Z-LIM suffix as shown in (6).<sup>1</sup>

- (6) a. \*Ne-nun chinkwu-**ka** i-ta.  
 you-Top friend-Nom Cop-Decl  
 ‘You are a friend.’  
 b. \*Ne-nun chinkwu-**lul** i-ta.  
 you-Top friend-Acc Cop-Decl  
 c. \*Ne-nun chinkwu-**uy** i-ta.  
 you-Top friend-Gen Cop-Decl  
 d. \*Ne-nun chinkwu-**nun** i-ta.  
 you-Top friend-Top/Cont Cop-Decl

Neither topic nor focus marker belonging to Z-limiters can be attached to its complement. But those markers except for a Z-lim can serve as the precopular element:

- (7) a. wuli ttang-un yekise-**pwute** i-ta  
 we land-Top here-from Cop-Decl  
 ‘Our land is from this point.’  
 b. i iyaki-nun ne-**hanthey-man** i-ta  
 this story-Top you-Dat-only Cop-Decl  
 ‘This story is only to you.’

Further, no element whatsoever can intervene between the precopular element and the copula:

- (8) a. Na-nun hyencey haksayng i-ta.  
 I-Top now student Cop-Decl  
 ‘I am a student.’  
 b. \*Na-nun haksayng **hyencey** i-ta.  
 I-Top student now Cop-Decl

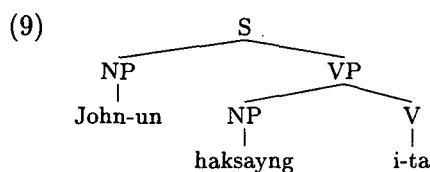
The observations we have made so far appear to indicate that the copula occupies the Z-Lim slot as a morphological positional constraint.<sup>2</sup>

<sup>1</sup>But see (37) for cases where this condition is violated.

<sup>2</sup>However, there exist cases violating this constraint. See section 3.3 and Sells 1997.

## 1.2 Syntactic Unity

Though the observations we have made so far indicate that the copula looks like a bound morpheme and forms a strong morphological unit with the preceding nominal element, the copula at the level of syntax appears to take this nominal as its syntactic complement, as represented in (9):



Support for this syntactic structure comes from various points. First, the complement of a copular sentence is usually a nominal, but it isn't difficult to find corpus where the complement is a PP, a conjunctive clause, an interrogative sentence, or even an adverb.

- (10) a. Kuke-n [poncilcekulo talun iyu-eyse] i-ta.  
 that-Top essentially different reason-at Cop-Decl  
 'That is essentially due to a different reason.'
- b. mwuncey-nun [cwuknunya hokun sanunya] i-ta  
 question-Top die or live Cop-Decl  
 'To live or die, that is the question.'
- c. Uymwun-un [conca-y-ka mwuess-ul uymiha-ko issnun-ka] i-ta.  
 question-Top existence-Nom what-Acc mean-Comp Prog-Int Cop-Decl  
 'The question is what 'existence' means.'
- d. Kutul-un [caki mestaylo] i-ta.  
 they-Top self willfully Cop-Decl  
 'They are selfishly willful.'

Moreover, modification data indicate that the copula is not attached to a word like *haksayng* 'student' in (11)a, but to a phrase like *kananhan haksayng* 'poor student' in (11)b:

- (11) a. Na-nun kananhan [<sub>V</sub>[<sub>N</sub>haksayng] i-ta].  
 I-Top poor student Cop-Decl  
 'I am a poor student.'
- b. Na-nun [<sub>VP</sub>[<sub>NP</sub>[ kananhan haksayng] i-ta].  
 I-Top poor student Cop-Decl

If we took the copula to be attached to the noun *haksayng* itself, there would be then no principled way of explaining why *haksayng* is modified by an adnominal phrase rather than by an adverbial phrase (Oh 1991, Chae 1995):

- (12) \*Na-nun kananhakey [<sub>V</sub> [<sub>N</sub> haksayng] i-ta].  
 I-Top poorly student Cop-Decl

Considering such complexities of Korean copula constructions, three main research issues arise:

- What is the grammatical status of the copula?
- What restrictions does the precopular element bear?
- How can we represent the mismatches between syntax and morphology?

The first issue is about the grammatical status of the copula *i-ta* itself: is it an affix (Yu-Cho and Sells 1995, Sells 1996), a clitic (Oh 1991, Chae 1995), or an independent word? The second issue is what restrictions does the host or complement of the copula bear: is the complement a N, N', NP, or XP (Cho and Sells 1995, Sells 1996, No and Chae 1998)? Regarding the second issue more concretely, we need to answer why case cannot be assigned to a nominal complement (cf. Sells 1996, Chae 1995) and why only a certain form of a verbal complement is allowed? The next question is how and at which level we can represent such mismatches. This paper explores answers to those questions within the framework of HPSG (Head-driven Phrase Structure Grammar) whose foundations rely on the interactions of constraints among various grammatical components.

## 2 On the Grammatical Status of the Copula

Zwicky and Pullum (1983) and Zwicky (1985) propose several diagnostics for distinctions between an affix and a clitic on one hand, and between a clitic and an independent word on the other. According to their criteria, a clitic combines with its host forming a phonological word whereas the combination is governed by syntactic principles. We adopt those criteria in order to elucidate the grammatical status of the copula *i-ta*.

### 2.1 Is it an Affix?

One argument for the treatment of the copula as an affix concerns the fact that, as argued in Cho and Sells (1995), there are morphologically-determined phonological interactions between the host and the copula *i-ta*. For example, the copula and the preceding element can undergo the palatalization rule that applies only in the morphological suffixation:

- (13) a. [path-i] → [pachi]  
           'field-Nom'
- b. [path-i-ta] → [pachida]  
           'field-Cop-Decl'

But this palatalization does not apply to a phrasal or a compounding element:

- (14) a. path ilku-ko → [pad ilgugo]/\*[pachilgugo]  
           field till-Conj  
           'till the field and'
- b. path ilang → [pad iran]/\*[pajiran]  
           field ridge  
           'the ridge of a field'

The application of the lexical palatalization seems to suggest that the copula stem *i-ta* attaches to the preceding nominal element as a kind of derivational nominal suffix. However, such lexical phonological interactions cannot be conclusive evidence for the affixhood of the copula because the interactions also apply to a combination of a clitic and its host, which can form a phonological word for the palatalization rule application.

The modification data discussed earlier and repeated here also tell us that the copula cannot be an affix.

- (15) Na-nun kananha-n/\*kanahakey haksayng i-ta.  
       I-Top poor-PNE/poorly student Cop-Decl

If the copula were an affix, it would be attached to a word like *haksayng* 'student', resulting in a verb. Then, the next question follows how the adjective *kananhan* 'poor', but not the adverb *kananha-key* 'poorly' can modify this resulting verbal element.

At first glance, some adverbs seem to be able to modify the combination of 'N+copula' as shown in (16)b:

- (16) a. Mary-ka (i kulwup-eyse) ywuilhan haksayng i-ta.  
 Mary-Nom this group-in unique student Cop-Decl  
 'Mary is the only student in this group.'
- b. Mary-ka (i kulwup-eyse) ywuilhakey haksayng i-ta.  
 Mary-Nom this group-in uniquely student Cop-Decl

However, the adverbial *ywuilhakey* 'uniquely' in (16)b is an adverb modifying the verbal combination of 'N+copula' or the whole sentence, while the adnominal *ywuilhan* 'unique' modifies the noun *haksayng* 'student'. This difference is shown in the scrambling possibilities in (17):<sup>3</sup>

- (17) a. \*Ywuilhan Mary-ka [(i kulwup-eyse) haksayng] i-ta.  
 unique Mary-Nom this group-in student Cop-Decl
- b. Ywuilhakey Mary-ka (i kulwup-eyse) haksayng i-ta.  
 uniquely Mary-Nom this group-in student Cop-Decl

As observed, scrambling is allowed only in (17)b, but not in (17)a.<sup>4</sup>

Also, in a similar manner, if the affixal copula attaches to a word and forms a unit, scrambling may be allowed among the adjuncts that modify the combination of the copula and its complement. However, as shown in (18), such scrambling is not allowed:

- (18) a. Mary-ka [ywuilhakey] [pwulacil-eyse o-n] [haksayng i-ta].  
 Mary-Nom uniquely Brazil-from come-Pne student Cop-Decl  
 'Mary is the only student who comes from Brazil.'
- b. \*Mary-ka [pwulacil-eyse o-n] [ywuilhakey] [haksayng i-ta].  
 Mary-Nom Brazil-from come-Pne uniquely student Cop-Decl

The lack of scrambling in (18)b suggests that the host (or complement) of the copula is a phrasal category. This would then generate the following as the structure of (17)a:

- (19) Mary-ka [ywuilhakey] [[[pwulacil-eyse o-n] haksayng] i-ta].  
 Mary-Nom uniquely Brazil-from come-Pne student Cop-Decl

According to Zwicky and Pullum (1983) and Zwicky (1985), an affix exhibits a high degree of selection with respect to its stem while a clitic exhibits a low degree of selection. As we have observed earlier, the host of the copula verb can be a nominal, postpositional, a sentence, or even an adverb. This suggests that the copula is not a suffix but a clitic or an independent word whose distribution is licensed by syntactic principles rather than by morphological principles.

There are also in the combination of copula and its host no arbitrary gaps (e.g., lack of a past participle of English verb *stride*), no morphophonological idiosyncrasies (e.g., *oxen*, *slept*, etc. in English), and no semantic idiosyncrasies (e.g., *late* vs. *last* in English superlative). According to Zwicky and Pullum 1983 and Zwicky 1985, this also suggests that the copula is not an affix.

<sup>3</sup>When the adverb functions as a sentential modifier, (17)b would have a reading such that it is a unique situation that Mary is a student in this group.

<sup>4</sup>Unlike the positive copula, the copula in negation (*ani-ta* 'is not') takes a full syntactic complement (cf. Sells 1996):

- (i) a. Ne-nun chinkwu-ka anita.  
 You-Top friend-Nom Neg.Cop  
 'You are not a friend.'
- b. John-un na-uy chinkwu-ka celtaylo ani-ta.  
 John-Top I-Gen friend-Nom absolutely Neg.Cop  
 '(I assert that) John is absolutely not my friend.'

As observed here, the differences from the positive copula are that the precopular element can bear nominative case and that an adverbial element can intervene between the copula and its syntactic complement.

## 2.2 Is it an Independent Word?

Zwicky (1985) states that if an element is morphologically complex – has some affixal unit – it is more like a word rather than an affix or clitic. The copula *i-ta* is more like a word in this respect since inflectional verbal affixes such as tense and honorific can be attached to the copula as in (20):

- (20) ku pwun-un [silyekissnun sensayng-nim] [i-si-ess-ta].  
 he Hon-Top competent teacher-Hon Cop-Hon-Past-Decl  
 ‘He was a competent teacher.’

Although the copula has properties of a word as shown in (20), it does not have many other properties that a genuine word has. First of all, if the copula is an independent word, it may stand alone in an appropriate syntactic context. However, they never occur independently of its host or complement as shown in (21) and (22).

- (21) a. Mary-ka haksayng i-ki-n haksayng i-ta.  
 Mary-Nom student Cop-Nmlzr-Top student Cop-Decl  
 ‘What Mary is is a student. (Mary does not look/ behave like a student, but she is a student.)’  
 b. \*Mary-ka haksayng i-ki-n i-ta.  
 Mary-Nom student Cop-Nmlzr-Top Cop-Decl
- (22) a. Mary-nun haksayng i-ess-ko cikum-to haksayng i-ta.  
 Mary-Top student Cop-Past-and now-also student Cop-Decl  
 ‘Mary was a student, and still she is a student.’  
 b. \*Mary-nun haksayng i-ess-ko cikum-to i-ta.  
 Mary-Top student Cop-Past-and now-also Cop-Decl  
 ‘Mary was a student, and still she is.’

Second, the copula itself cannot be replaced with a proform as shown in (24). This contrasts with a canonical word as in (23).

- (23) Mary-nun alumtapta. Sue-to **kulehta**.  
 Mary-Top be-beautiful Sue-also be.so  
 ‘Mary is beautiful. Sue is so too.’
- (24) a. Mary-nun kananhan haksayng i-ta. John-to **kulehta**  
 Mary-Top poor student Cop-Decl. John-also be.so  
 ‘Mary is a poor student. John is so too.’  
 b. Mary-nun kananhan haksayng i-ta.  
 Mary-Top poor student Cop-Decl.  
 \*John-to kananhan haksayng **kulehta**.  
 John-also poor student be.so

Third, Zwicky (1985) points out that an affix or clitic has simpler combinatorial properties with its host than a word. As shown earlier, the principle of combination of ‘XP + copula’ seems to be much complicated: The copula does not assign case to its nominal complement, and only a certain group of fully inflected verbal forms is allowed as its complement:

- (25) a. ...\*chinkwu-lul po-a + i-ta. (\*root-Comp + Copula)  
 friend-Acc see-Comp + Cop-Decl  
 ‘see a friend’

- b. \*...chinkwu-lul po-key + i-ta. (\*root-Comp + Copula)  
friend-Acc see-Comp+ Cop-Decl
- c. ... chinkwu-lul po-ass-ta + i-ta. (root-Tense-Mood + Copula)  
friend-Acc see-Past-Decl + Cop-Decl
- d. ...chinkwu-lul po-ass-nunka + i-ta. (root-Tense-Mood + Copula)  
friend-Acc see-Past-Int + Cop-Decl

Such complicated restrictions imply that the copula may be an independent word. However, considering that the positive copula does not assign a nominative case or does not allow its complement to bear certain particles, the copula seems to have at least certain different properties from canonical verbs (including the negative copula *ani-ta*).

### 2.3 Summary

To sum up, the copula constructions have the following properties:

- (26) a. Application of the lexical phonological rules to the precopular element and the copula.
- b. No intervention is allowed between the two.
- c. The copula alone cannot be an independent word.
- d. The copula alone cannot be replaceable with a proform.
- e. The copula selects various phrasal categories.
- f. The copula has its own verbal suffixes.
- g. When the copula takes a nominal complement, the complement must not bear nominative case or Z-limiters. When the copula takes a verbal complement, only a limited set of inflected verbal forms is allowed.

Properties in (26)a–d show that the copula is more like a genuine clitic, while those in (26)e–g more like an independent word. In this paper, the copula is considered to be a word-like clitic, and our analysis focuses on how to account for these properties within the theory of HPSG.

## 3 Analysis

### 3.1 Motivating Tecto and Pheno Grammatical Structures

There have been three analyses for the treatment of the copula *i-ta*. One is to take it as a clitic (Oh 1991). Within this analysis, the properties in (26)a–e follows naturally. However, this clitic analysis does not pay attention to the properties in (26)f,g: it is not clear how the clitic treatment is extended to account for these. In a similar manner, one could take it to be a phrasal affix (Yoon 1992) with the assumption that the copula has two subcategorization frames: the copula subcategorizes for a phrasal category (XP) in syntax while the other subcategorizes for a sublexical category ( $X^{-1}$  in morphology). This approach relatively well accounts for the selectional properties in (26)g, for example the lack of case in nominal complement. However, as Sells (1995) points out, a problem with this dual subcategorization approach is that the syntactic subcategorization part is totally redundant and does not play any significant role in grammar. Another approach is to take it as an affix (Sells 1995 and Sells 1996). Problems with this analysis are that it is hard to explain the syntactic unity we have seen earlier.

Various literature has proposed that as for the proper representation of constituency, prosodic constituency needs to be separated from the traditional syntactic constituency (Gee and Grosjean 1983, Penn 1999, Klein 2000, among others). For example, (27) shows that the prosodic constituents in the given sentence differ from the syntactic ones, i.e., at the level of syntax, *he brought out* cannot be a constituent in any phrase structure grammar theory.

(27) [By making his plan known,] [he brought out] [the objections of everyone]. (Klein 2000)

The separation of the superficial linear order or prosodic constituency from syntactic constituency has been proposed by Dowty (1992) with the distinction between tectogrammatical structure vs. phenogrammatical structure.<sup>5</sup>

- Tectogrammatical structure: It is a classical syntactic structure that guides the assemblage of meaning, describing the steps by which the interpretations of words and phrases combine to form the interpretation of a sentence.
- Phenogrammatical structure: This describes how the combinations in tectogrammatical structure are realized in a string. It is a kind of structure in which the role of word order in realizing or expressing syntactic organization is articulated, along with the role of inflectional morphology.

In HPSG, the phenogrammatical level can be represented with the introduction of the feature DOMAIN.<sup>6</sup> This feature determines the order in which the various phonological contributions of its daughters are realized.

(28) Constituent Ordering Principle

$$sign \rightarrow \left[ \begin{array}{l} \text{PHON } \phi_1 \oplus \dots \oplus \phi_n \\ \text{DOMAIN } \langle [\text{PHON } \phi_1], \dots, [\text{PHON } \phi_n] \rangle \end{array} \right]$$

Given this principle, linear precedence rules function by constraining the order of elements on the DOMAIN list.

### 3.2 Liberation and Compaction

Adopting this perspective of grammar, we assume that there are two kinds of construction in Korean: liberating and compacting. The constructions belonging to *liberating* have the following constructional constraint:

$$(29) \quad \text{liberating-cx} \rightarrow \left[ \begin{array}{l} \text{MOTHER } [\text{DOM } \boxed{a} \circ \boxed{b}] \\ \text{HD-DTR } [\text{DOM } \boxed{a}] \\ \text{NON-HD-DTRS } [\text{DOM } \boxed{b}] \end{array} \right]$$

What this constraint ensures is that the domain members of each daughter are sequence-unioned in the mother's domain: the members in a domain list can be interleaved with those in other lists as long as the order of each list is maintained and the independently motivated Korean linear precedence condition of head finalness is preserved. For example, one possible phenogrammatical structure for (30)a will be something like (30)b:

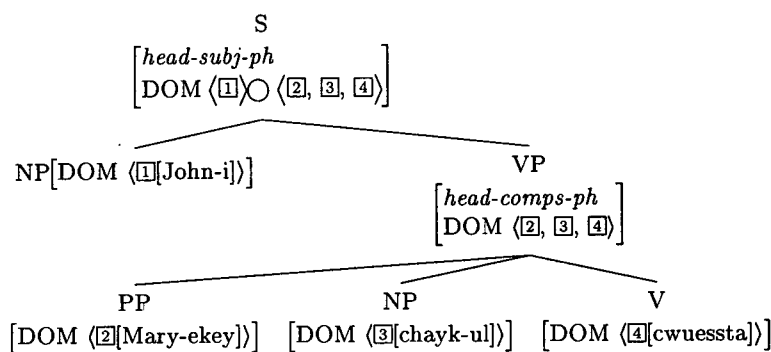
(30) a. John-i      Mary-eykey chayk-ul cwuessta.  
           John-Nom Mary-Dat    book-Acc gave  
           'John gave Mary a book.'

<sup>5</sup>A similar idea has been developed in Gazdar et al. 1985 and Pollard and Sag 1994 (immediate dominance rules vs. linear precedence rules); Reape 1994 (syntax tree vs. domain tree); Kathol 1995 (DOMAIN feature), among others. The analysis we adopt here is based on Kathol's DOMAIN theory.

<sup>6</sup>whose value contains PHON and SYNSEM.



b.



Given that the *head-subj-ph* and *head-comps-ph* are a subtype of *liberating-cx* by definition, the DOMAIN of the verb, that of the complements, and that of the subject are all merged into the domain of the sentence. Any ordering DOMAIN elements is permitted with the placement of the head in the final. This could partially account for the property of free scrambling in the language.

In addition to these liberating constructions, we assume that there are compacting constructions in Korean. Unlike liberating constructions, such constructions prevent us from liberating the daughters' DOMAIN elements. One such construction is *copula construction* whose constraint is given in (31):<sup>7</sup>

$$(31) \quad \text{compacting-cx} \rightarrow \left[ \begin{array}{l} \text{MOTHER} \left[ \text{DOM } \boxed{a} \oplus \langle [\text{DOM } \langle \boxed{1}, \boxed{2} \rangle] \rangle \right] \\ \text{HD-DTR} \left[ \text{DOM } \langle \boxed{2} \rangle \right] \\ \text{NON-HD-DTRS} \left[ \text{DOM } \boxed{a} \oplus \langle \boxed{1}[\text{CASE none}] \rangle \right] \end{array} \right]$$

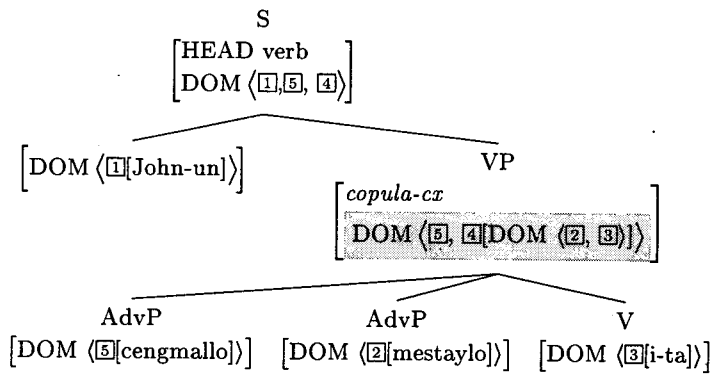
What this constructional constraint ensures is that the head element (copula) and the last element of the non-head daughters (precopular element) are compacted into one domain unit, eventually resulting in fixing the position of the head noun to be after the complement. Further the construction requires that this last element bear no case value (though it is possible to have other delimiters). Once such combinations are compacted, they form a single domain element that cannot be separated as larger phrases are constructed. This could explain why precopular adverbs cannot be scrambled whereas nonprecopular elements can freely occur in different positions:

- (32) a. John-un cengmallo mestaylo i-ta  
 John-Top really willfully Cop-Decl  
 'John is really acting willfully.'
- b. cengmallo John-un mestaylo i-ta
- c. \*mestalylo John-un cengmallo i-ta

The present analysis assigns the following structure to the sentence (32)a:

<sup>7</sup>This construction is a subtype of the type *compacting-cx* and hence inherits the minimal constraints such that the mother's synsem value is identical to its DOMAIN value. Cf. Donohue and Sag 1999.

(33)

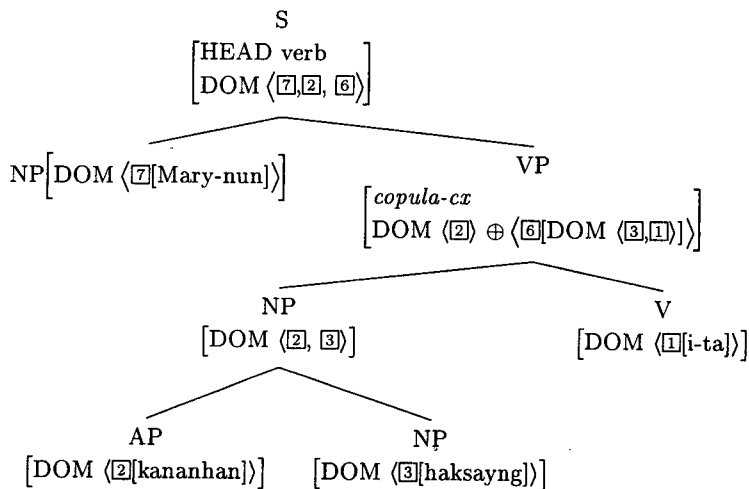


As marked by the shaded area, the *copula-cx* VP is a subtype of *compacting-cx*, and thus the copula and the immediately preceding adverb *mestaylo* ‘willfully’ are compacted together. This process links the two as a tight morphological unit.

The same strategy applies to more complex examples like (34)a and the present analysis generates (34)b as its phenogrammatical structure:<sup>8</sup>

- (34) a. Mary-nun kananhan haksayng i-ta.  
 Mary-Top poor student Cop-Decl  
 ‘Mary is a poor student.’

b.



In terms of tectogrammatical structure, the copula selects an NP complement modified by the adjective *poor*. But since the copula construction is a *compacting* construction, the DOMAIN of this complex NP is compacted into the mother together with that of the copula verb.

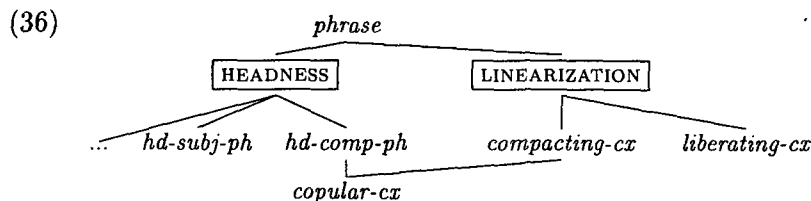
One thing we notice in the copula construction is the constraint specifying that its CASE value is *none*. Unlike previous analyses that have attributed this no case value to the lexical property of the copula itself, our approach hints that this may be due to the property of copula constructions whose constituents need to be compacted together. This allows us to simplify the lexical entry for the copula *i-ta* as the one given in (35):

<sup>8</sup>The combination of an adnominal and its modified noun (e.g. *kananhan* ‘poor’ and *haksayng* ‘student’ in (34)b) is considered as another instance of *compacting-cx*, which prevents the adnominal from being scrambled with other syntactic elements. We leave out a detailed account of this issue here.

$$(35) \left[ \begin{array}{l} \text{HEAD} \left[ \begin{array}{l} \textit{verb} \\ \text{STATIVE +} \end{array} \right] \\ \text{ARG-ST} \left\langle \begin{array}{l} \text{INP, XP} \left[ \begin{array}{l} \text{SYN} \left[ \begin{array}{l} \text{PRD +} \\ \text{SUBJ} \langle \text{I} \rangle \end{array} \right] \\ \text{SEM}[\text{INDEX } \text{2}] \end{array} \right] \end{array} \right\rangle \\ \text{SEM}[\text{INDEX } \text{2}] \end{array} \right]$$

The lexical structure of the copula is similar to that of *be* in English except that it is stative. The copula selects a subject (the first element in the ARG-ST) and a XP complement whose unexpressed subject is the subject of this copula itself. The semantic index of the copula is just the index of its predicative complement – the copula contributes nothing to the semantics of the sentences; it is just a syntactic placeholder.

We have shown so far that we could organize the construction types of Korean as in (36). This hierarchy allows us to factor out all relevant generalizations about compacting and liberating constructions in Korean (cf. See Donohue and Sag 1999 for a similar hierarchy for Warlpiri).



### 3.3 Explaining the Basic Properties

The properties listed in (26) are further accounted for in our approach as follows.

The application of the lexical phonological rules to the combination of the copula and the preceding element (e.g., (13)) is accounted for by the compaction. When the two domain members are compacted together, they form a phonological word to which a rule like palatalization can apply.

The fact of no intervention into the combination of XP + *i-ta* ((8)) is also predicted from the compaction operation: the members of a compacted domain must be phonologically continuous.

The copula cannot be replaceable with a proform (e.g., (24))b due to the compaction again. Part(s) of the compacted domain members cannot be replaced with a proform because the compacted members are one phonological unit which is inert to syntax. In contrast, nothing blocks us from replacing the compacted members as a whole with a proform.

The copula has its own verbal suffixes because it is considered as a subtype of a verb (as in (35)) to which verbal suffixes attach, forming a syntactic word unit.

The present analysis also accounts for why the nominal complement lacks case. One of the constraints in the *copula-cx* as a subtype of *compacting-cx* is that the complement daughter bears no case value. As argued by Sells (1996), we may assume that copula is one of the elements that occupies the Z-Lim slot to which case (nominative, accusative, and genitive) including the topic/focus markers and other morphemes such as *to* ‘also’ and *(i)lato* ‘even’ belong. In this approach, the copula and case cannot cooccur since they compete for the same slot. However this approach wrongly predicts an example like (37) to be unacceptable, where a Z-Lim morpheme *to* ‘also’ occurs with the copula.<sup>9</sup>

- (37) I iyaki-nun Mary-eykey-to i-ta.  
 this story-Top Mary-to-also Cop-Decl  
 ‘This story is also for Mary.’

In contrast, (37) is allowed in our approach because *to* is not a case value and can cooccur with the copula. The constructional constraint in (31) imposes no case value on its complement,

<sup>9</sup>Sells (1996), recognizing this, invokes a pragmatic factor in accounting for such cases.

saying nothing about particle values. In this respect, our analysis is basically different from previous ones that attribute no case value on the copular complement to the idiosyncratic lexical properties of the copula. Our analysis tells that this is due to the constructional constraints on *compacting-cx*. What the present analysis hints at is that the compaction process makes two units a kind of strong morphological unit. Given the assumption that an element with a structural case is a fully independent syntactic element, not a morphological element, we would expect the host of the copula not to bear any structural case (including topic markers). In other words, we conjecture that a syntactic constituent with case is already a syntactically independent element and thus cannot undergo a compaction process.

Our analysis also predicts the fact that the copula takes a fully inflected verbal complement. It selects a complement at the level of syntax, whose head daughter includes a MOOD marker functioning a role of closing-off a verb and thus can be used as a syntactic formative in a syntactic context. However, the MOOD marker is not the sole one responsible for the copula construction. As shown in (38), the element with some subordinate markers (complementizers in terms of Cho and Sells 1995, Sells 1995, Kim 1998) such as *-se* ‘because’, *-myense* ‘while’, and *-taka* ‘while’ can also be a complement of the copula:

- (38) a. *Nay-ka ku il-ul ha-n iyu-nun ku chinkwu-lul*  
 I-Nom the work-Acc did-Adnom reason-Top the friend-Acc  
*poa-se i-ta.*  
 see-Comp-because Cop-Decl  
 ‘The reason why I did the work is that I saw the friend.’
- b. *Nay-ka ku il-ul ha-n kes-un ku chinkwu-lul*  
 I-Nom the work-Acc did-Adnom thing-Top the friend-Acc  
*po-myense i-ta.*  
 see-while Cop-Decl  
 ‘The time when I did the work is while I saw my friend.’

However, note that complementizers such as *-ci*, *-a/-e*, *-key*, *-ci* and *-ko* cannot cooccur with the copula as in (39):

- (39) a. *\*o-ci i-ta*  
 come-Comp Cop-Decl
- b. *\*po-a i-ta*  
 see-Comp Cop-Decl

A difference between (38) and (39) is that the complementizer forms in (38) are not decided or selected by the following verbs, whereas the forms in (39) are selected by the following verbs as shown in (40):

- (40) a. *me-ko/ \*mek-e/ \*mek-ci sipta*  
 eat-Comp eat-Comp/eat-Comp want  
 ‘want to eat’
- b. *\*mek-ko/mek-e/\*mek-ci pelita*  
 eat-Comp/eat-Comp/eat-Comp do.resolutely  
 ‘eat up’
- c. *\*mek-ko/\*mek-e/mek-ci malta*  
 eat-Comp/eat-Comp/eat-Comp do.not  
 ‘do not eat.’

Our analysis requires just a minor modification. As we argued, the copula and the preceding element forms a strong morphological unit. In forming this unit, one condition we have seen is that the precopular element bears no case value. What we assume here is that nouns with a case value as well as verbal elements with a complementizer form all carry a FORM value which is selected by a head verb in syntax. Since an element with a FORM value is a syntactically independent element, it cannot participate in the (partial) compaction process we assumed in (31).

#### 4 Conclusion

The mismatch between morphology and syntax in Korean copula constructions has brought a dilemma. In terms of morphology, the copula forms a cohesive unit with the precopular element. However, in syntax, the precopular element is independent from the copula and forms a unit with preceding elements (other than the subject). In capturing such mismatches, this paper has shown that the copula (an independent word or an clitic) is treated as an independent verb at the level of tectogrammatical structure (or syntax tree), whereas as a bound morpheme at the level of phenogrammatical structure (or domain tree), in terms of Dowty 1992 (or Reape 1994). Adopting this perspective of grammar, we have claimed that copula constructions are a subtype of *compacting-constructions*, which we can find in languages like German and Warlpiri (cf. Kathol 1995, Donohue and Sag 1999). Such constructions ensure the domain value of the copula and that of its preceding element are compacted into one domain unit, eventually making it inert to syntactic phenomena such as scrambling, deletion, and pro-form substitution. The paper has also shown that interactions between constructional constraints and lexical properties further play a key role in the formation of the copula constructions.

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