

## **Modifier-sharing constructions in Korean\***

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**Lee, Wooseung. 2015. Modifier-Sharing Constructions in Korean.** *Linguistic Research* 32(1), 195-223. This paper discusses modifier-sharing constructions, which exhibit two split antecedents sharing one modifier. We examine Korean modifier-sharing constructions where modifiers contain elements requiring plural antecedents. Specifically, we concern examples where plural antecedents are manifested as two split singular entities. The constructions are syntactically challenging due to the unusual dependency between the antecedent and the modifier. The major proposal is that the two split antecedents are originally coordinate DPs in Korean and that they are just an outcome resulting from subsequent movement of each conjunct out of the coordinate complex. Based on Zhang's (2010) proposal on English modifier-sharing constructions, we relax the coordinate structure constraint, allowing movement out of coordinate complex under certain conditions and present a derivation of the construction per se via sideward movement (Hornstein and Nunes 2002, among others). (Konkuk University)

**Keywords** modifier-sharing, split antecedents, the coordinate structure constraint, sideward movement, empty operator

### **1. Introduction**

This preliminary study attempts to offer an analysis of Modifier-Sharing Constructions (MSCs) in Korean. Representative examples of MSCs are presented in (1).

#### (1) Modifier Sharing Constructions (MSCs) in Korean

- a. [selo        talm-un ]    han    namca-ka    tuleo-ass-ko,  
    each.other resemble-rel    one    man-nom    come.in-pst-conj  
    han yeca-ka        naka-ss-ta.

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\* I am very grateful to anonymous reviewers for their valuable comments, questions and suggestions. All errors are my responsibility.

- one woman-nom leave-pst-decl  
 ‘A man came in and a woman left who resemble each other.’
- b. [yelsimhi-tul kongpwuhay-ss-te-n ]han haksayng-un hapkyekhay-ss-ko,  
 hard-PL study-past-ret-rel one student-top pass-pst-conj  
 han haksayng-un pwulhapkyekhay-ss-ta.  
 one student-top fail-pst-decl  
 ‘One student passed and the other failed who had studied hard.’
- c. [ kakkak chwulpalhay-ss-te-n ] han haksayng-un (imi) tochakhay-ss-ko,  
 respectivelyleave-pst-ret-rel one student-top alreadyarrive-pst-conj  
 han haksayng-un (acik) o-nun cwung-i-ta.  
 one student-top yet come-prog-cop-decl  
 ‘One student has already arrived and the other is still coming who left  
 respectively.’
- d. [kathun os-ul ip-un ] han namca-ka tuleo-ass-ko,  
 the.same clothes-acc wear-rel one man-nom come.in-pst-conj  
 han yeca-ka naka-ss-ta.  
 one woman-nom leave-pst-decl  
 ‘A man came in and a woman left who were wearing the same  
 clothes.’
- e. [(selo) talun kongyak-ul ke-n ] han hwupo-nun  
 each.other different pledge-acc offer-rel one candidate-top  
 tangsentoy-ss-ko, han hwupo-nun naksenhay-ss-ta.  
 win.the.election-pst-conjone candidate-top lose.the.election-pst-decl  
 ‘One candidate won and the other lost the election who offered  
 different pledges.’

These examples are syntactically challenging in that the bracketed relative clauses contain various elements that presuppose the presence of ‘plural antecedents’, which are realized as two split singular entities. Specifically, elements such as *selo* ‘each other’, *kakkak* ‘respectively’, *tul* ‘plural morpheme’, *kathun* ‘same’, *talun* ‘different’ occurring in the relative clause are required to be followed by a plural antecedent as shown in (2).<sup>1</sup> This contrasts with (1), where the relative clause appears to modify

<sup>1</sup> These particular cases of ‘same/different’ are concerned with ‘sentence-internal’ readings only even though ‘same/different’ (and their counterparts ‘*kathun/talun*’ in Korean) are well-known to have

just one singular NP on the surface.

(2) Coordinate Head RC Constructions (CHCs) in Korean:<sup>2</sup>

- a. [selo talm-un ] han namca-wa han yeca  
each.other resemble-rel one man-conj one woman  
'a man and a woman left who resemble each other.'
- b. [yelsimhi-tul kongpwuhay-ss-te-n ]han haksayng-kwa talun haksayng<sup>3</sup>  
hard-PL study-past-ret-rel one student-conj other student  
'one student and the other who had studied hard.'
- c. [kakkak chwulpalhay-ss-te-n] han haksayng-kwa talun haksayng  
respectively leave-pst-ret-rel one student-conj other student  
'one student and the other who left respectively'
- d. [kathun os-ul ip-un ] han namca-wa han yeca  
the.same clothes-acc wear-rel one man-conj one woman  
'a man and a woman who were wearing the same clothes.'
- e. [(selo) talun kongyak-ul ke-n ]  
each.other different pledge-acc offer-rel  
han hwupo-wa talun hwupo

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'sentence-external' readings as well (Carlson 1987, Author 2009, 2012, among others). For instance, consider example (i).

(i) John and Mary attend different classes.

Sentence (i) has two different meanings as specified in (a-b).

(a) sentence-internal reading:

John attends a different class than Mary attends.

(b) sentence-external reading:

John and Mary attend different classes than Sue attends.

Interpretation (a) is sentence-internal in the sense that the comparison is available due to the meaning of the sentence itself. Interpretation (b), on the other hand, is sentence-external since it is anaphoric to the discourse referent previously introduced. Korean 'kathun/talun' also exhibits the same pattern and is given the same account.

<sup>2</sup> This terminology is from Zhang's (2010) on English counterparts.

<sup>3</sup> Given the MSC in (1b), this originally should be 'han haksayng-kwa han haksayng'. This type of coordination, however, sounds slightly awkward in Korean, being replaced by an unmarked expression 'han haksayng-kwa talun haksayng'. The former denotes the same as meant by the latter coordinate complex. The same account applies to other examples as in (2c) and (2e).

one candidate-conj other candidate  
 ‘One candidate and the other who offered different pledges.’

Modifier-sharing constructions (involving relative clauses focused on in this paper) have not been given a lot of discussion in previous literatures in Korean, except in just a couple of works on related constructions (J-S Kim 2011, 2015, among others). This paper thus aims to introduce Korean MSCs and propose a derivation, based on Zhang’s (2010) English MSCs. Organization of this paper is as follows. Section 2 compares English MSCs with Korean counterparts. Specifically, we propose that MSCs in Korean involve CHCs at a certain point of derivation as in English. Section 3 proposes a sideward movement analysis of Korean MSCs and then shows sample derivations of two representative examples. Section 4 concludes.

## 2. Modifier Sharing Constructions in English and Korean

### 2.1 MSCs in English (Zhang 2010, among others)

Even though not much has been said about MSCs relative to other constructions in English and Korean syntax, the initial discussion dates back to Ross and Perlmutter (1970), which introduces intriguing data as in (3).

- (3) Modifier-Sharing Constructions in English (Ross and Perlmutter 1970):
- a. Mary met a man<sub>i</sub> and John met a woman<sub>j</sub> [who<sub>i&j</sub> knew each other<sub>i&j</sub> well].
  - b. A man<sub>i</sub> came in and a woman<sub>j</sub> left [who<sub>i&j</sub> were quite similar].
  - c. The house has a room<sub>i</sub> and the shop has a cellar<sub>j</sub> [which<sub>i&j</sub> are joined by a small passageway].

Apparently, the bracketed relative clause seems to be interpreted either in the initial or the second conjunct. Close examination, however, reveals that with the potential antecedents split, positing the relative clause in either of the two conjuncts makes it difficult to explain the licensing of the elements requiring ‘semantically plural’ antecedents within the relative cause. These examples thus challenge either

deletion or movement analysis as schematically illustrated in (4).

(4) No extraposition/deletion analysis of MSCs

- a. \*Mary met a man<sub>i</sub> \_\_\_\_<sub>k</sub> and John met a woman<sub>j</sub> [who knew each other well]<sub>k</sub>.
- b. \*Mary met a man<sub>i</sub> [~~who knew each other well~~] and John met a woman<sub>j</sub> [who knew each other well].

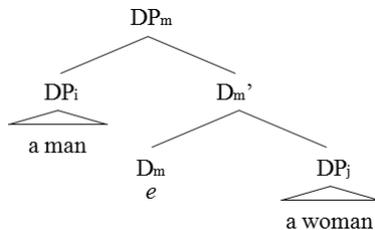
Despite the apparent similarity to MSCs, the examples in (5) do not pose the same problem since elements requiring plural antecedents are preceded by conjoined NPs.

(5) Coordinate Head RC Constructions (CHCs):

- a. a man<sub>i</sub> and a woman<sub>j</sub> [who<sub>i&j</sub> knew each other<sub>i&j</sub> well]
- b. a room<sub>i</sub> and a cellar<sub>j</sub> [which<sub>i&j</sub> are joined by a small underground passageway]
- c. the boy<sub>i</sub> and the girl<sub>j</sub> [who<sub>i&j</sub> were in love]
- d. the car<sub>i</sub> and the truck<sub>j</sub> Op<sub>i&j</sub> that collided

Recently, Zhang (2010) presented an array of common properties between MSCs and CHCs, which led her to propose that the derivation of an English MSC involves a step where the two split antecedents are two conjuncts of a coordinate structure as depicted in (6). This coordinate DP<sub>m</sub> is proposed to be the unique antecedent of the relative pronoun.

(6)



Her arguments are based on the following shared properties between MSCs and

CHCs. First, relative clauses (RCs) do not take bare proper names or pronouns as antecedents.

- (7) a. \*Pat {who/that} I like is a genius. (Sag 1997 (91))  
 b. The Pat {who/that} I like is a genius.  
 c. \*He {who/that} I know is a genius.  
 d. \*Mary met [him]<sub>i</sub> [who<sub>i</sub> knew her well].

This is observed in MSCs and CHCs as exemplified in (8a) and (8b) respectively. Specifically, (8a) is unacceptable since one of the presumable antecedents is a pronoun ‘him’. In a similar line, (8b) is ruled out due to the presence of the pronoun ‘he’ as a part of the antecedent. This property can be explained if MSCs and CHCs are proposed to be derived in a similar way.

- (8) a. \*Mary met [him]<sub>i</sub> and John met [a woman]<sub>j</sub> [who<sub>i&j</sub> knew each other well].  
 b. \*[He]<sub>i</sub> and [a woman]<sub>j</sub> [who<sub>i&j</sub> knew each other well] were allowed to enter the room.

Second, Both CHCs and MSCs behave the same with respect to D-features of the modified nominals. Specifically, the determiners of the Head nominals must be identical both in CHCs and MSCs (Vergnaud 1974 and Link 1984). That is, two DPs that do not match in terms of D-features are ruled out both in CHCs and MSCs as shown in (9).

- (9) a. \*a man and the woman who met last year (CHC)  
 b. \*the father of John and a woman who know each other well (CHC)  
 c. \*A man entered and the woman left who met last year. (MSC)  
 d. \*John saw the man and Mary saw a woman who met last year. (MSC)

Note that this restriction does not hold for simple coordination (10) as presented in Moltmann (1992a).

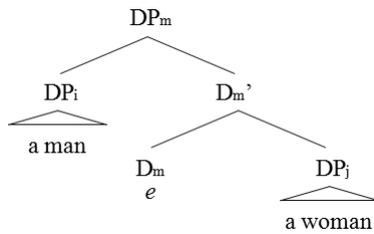
- (10) a. John met [a man] and [the woman he saw yesterday].  
 b. John met [that man] and [a woman].

Third, both CHCs and MSCs license reciprocals as in (11). Given that reciprocals need a plural antecedent, licensing of reciprocals in MSCs seems to indicate that the derivation of (11b) involves a representation like (11a) at a certain point of derivation.

- (11) a. a man and a woman [who knew *each other* well]  
 b. Mary met a man and John met a woman [who knew *each other* well].

Based on the above shared properties between CHCs and MSCs, Zhang (2010) claims that the antecedent of the relative pronoun in an MSC as in (12a) is a coordinate complex, and the head of this complex is realized by a null conjunction as in (12b).

- (12) a. Mary met a man<sub>i</sub> and John met a woman<sub>j</sub> [who<sub>i&j</sub> knew each other<sub>i&j</sub> well].  
 b.



Crucially, null D<sup>4</sup> is postulated in her proposed representation<sup>5</sup>. This null D is

<sup>4</sup> The postulated category ‘D’ in the expected conjunction position will be justified later in this section.  
<sup>5</sup> The structural asymmetry in the coordinate complex is justified on the following grounds (Dik 1968, among many others). First, there is an asymmetry between conjuncts in binding. Specifically, the first conjunct should be structurally higher than the second conjunct, but not vice versa as in (i).

different from the overt conjunction *and* in two respects. [1] It has its own categorial

- 
- (i) a. Every man<sub>i</sub> and his<sub>i</sub> dog left.  
 b. \*His<sub>i</sub> dog and every man<sub>i</sub> left.

The same account applies to Korean:

- (ii) a. motun namca<sub>i</sub>-wa ku(tul)<sub>i</sub>-uy anay-ka mwutohoycang-ey tuleo-ass-ta.  
 every man-conj heir-gen wife-nom ball.room-at enter-pst-decl  
 'Every man and his wife entered the ballroom.'  
 b. \*ku(tul)<sub>i</sub>-uy anay-wa motun namca<sub>i</sub>-ka mwutohoycang-ey tuleo-ass-ta.  
 their-gen wife-conj every man-nom ball.room-at enter-pst-decl  
 (Intended) 'Every man and his wife entered the ballroom.'

Also, the proform 'there' in the second conjunct is coreferential with the first conjunct as in (iiia). Similarly, the pronoun 'it' in the second conjunct pronominalizes the first conjunct in (iiib), i.e. two conjuncts in (iii) cannot be switched, hence, no flat structure as for (iii).

- (iii) a. [That Himmler appointed Heydrich] and [the implications thereof] frightened many observers. (Bayer 1996: 580)  
 b. Pat is [a Republican] and [proud of it]. (Sag et al. 1985: 117)

The same account applies to Korean:

- (iv) a. [John-i swukcey-lul makamsikan-kkaci ceychwulha-ci mos  
 John-nom assignment-acc deadline-by submit-Neg  
 hay-ss-ta-nun kes]-kwa [kuey ttalun pelcem]-i ku-lul  
 do-pst-decl-rel thing-conj therefrom penalty-nom him  
 kekcengsiki-ess-ta.  
 worry-pst-decl  
 '[That John failed to submit the assignment by the deadline] and [the penalty therefrom] worried him.'  
 b. kim kyoswu-nim-un [ Chomsky-uy citohaksayng-i]-ko  
 kim professor-hon-top Chomsky-gen advisee-cop-conj  
 [kukes-ul calangsulewueha-si-n-ta].  
 it-acc be.proud.of-hon-pres-decl  
 'Prof. Kim is [an advisee of Chomsky] and [proud of it].'

Second, a set of data in (v) shows that the conjunction 'and' and the second conjunct 'a bike' form a constituent (Ross 1967, Collins 1988, Munn 1993). Specifically, a series of words 'and a bike' move together to the end of the sentence in (b)-example of (v), suggesting that it is a constituent.

- (v) a. She gave me a book and a bike yesterday.  
 b. She gave me a book yesterday and a bike.

All these facts constitute the evidence that the structure of coordinate complexes is asymmetrical, i.e. the first conjunct is higher than the second one.

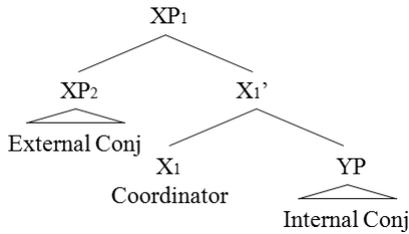
features, and thus it does not get categorial features from any conjunct. By contrast, note that the overt conjunction ‘and’ is proposed to have no intrinsic categorial features as we will see. [2] As a null element, the null D does not need any phonological host, which predicts that each conjunct may move. In other words, the CSC may be violated under certain conditions as stated below in (13).

(13) Zhang’s Assumption

The CSC may be violated in the postulation of the null coordinator as depicted above in (12).

Interestingly, this contrasts with her proposal of the coordinate structure with an overt conjunction ‘and’. More generalized and category-neutral structure follows in (14).<sup>6</sup>

(14)



In her proposed structure (14), the overt coordinator ‘and’ itself has categorial features unspecified and shares the category of the external conjunct and then projects XP.<sup>7</sup> Crucially, given that *and* may occur in coordinate complexes of any category, it is proposed to have no intrinsic categorial features. Accordingly, even though it is always *and* that occurs at the head position in (15), the head X<sub>1</sub> of the coordinate complex is D in (15a), P in (15b), A in (15c), and V in (15d). Now, the head projects whatever categorial feature it has and determines the category of the whole coordinate complex.

<sup>6</sup> This is similar to the adjunction structure proposed by Munn (1993).

<sup>7</sup> For an acategorial status of the conjunction ‘and’, refer to Biberauer et al. (2014) as well.

- (15) a. [[John] and [Mary]] are coming.  
 b. [[In London] and [in Berlin]], it is still cold.  
 c. the [[red] and [blue]] flag  
 d. Mary has [[left] and [gone to England]].

In the above structure, the projection headed by a coordinator is proposed to share the category with the external conjunct. The rationale behind this proposal can be justified by a set of empirical facts as in (16). As is well known, the prepositional verb ‘talk about’ selects DP, not CP as revealed by the unacceptability of (16b-c). The grammaticality of (16a), however, indicates that the c-selectional requirement of ‘talk about’ is somehow met in (16a), which suggests that the category label of the coordinate complex is DP. This is consistent with the proposal that the coordinator has no intrinsic features and is given the category of the external conjunct, i.e. the Spec of the complex.<sup>8</sup> Specifically, in (16a), the coordinator ‘and’ has no inherent features and is given the categorial feature of the external conjunct DP. This [+D] categorial feature now projects to the whole coordinate complex, satisfying the c-selectional requirements of the prepositional verb ‘talk about’.<sup>9</sup>

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<sup>8</sup> Examples (i-ii) constitute evidence for feature dependency of XP on the Spec of X:

- (i) a. Nobody’s car would I borrow. [NEG feature percolation]  
 b. No one’s mother had baked anything. [NEG feature percolation]  
 (ii) a. Whose book did you read? [WH feature percolation]  
 b. Which one would you like to try on? [WH feature percolation]

In (a-b) examples of (i), [+Neg] feature is proposed to percolate from Spec to the head, which now projects XP with [+Neg] feature, yielding [+Neg] DP. Specifically, the preposed element ‘nobody’s car’ carrying [+Neg] feature obtained from its Spec triggers Subj-Aux inversion in (ia). The same account can be offered to (ib), where the subject ‘no one’s mother’ with [+Neg] feature licenses the NPI ‘anything’, which is well known to be licensed only when c-commanded by an element with [+Neg] feature. Similarly, (a-b) examples of (ii) indicate that [wh] feature can percolate from Spec to the head. The [+wh] feature residing in the head is then proposed to percolate along the same extended projection roughly in the sense of Grimshaw (1991, 2001, 2005), making the whole DP carry [+wh] feature. This way we can account for the [wh] feature checking of C via Spec-Head agreement.

<sup>9</sup> An anonymous reviewer pointed out that this so-called “proximity” effect is also observed in (a-b) example of (i).

- (i) a. There is a desk and two chairs in the room.  
 b. There are two chairs and a desk in the room.

- (16) a. We talked about [Mr. Golson's many qualifications] and [that he had worked at the White House].  
 b. \*We talked about [that he had worked at the White House].  
 c. \*We talked about [that he had worked at the White House] and [his many qualifications].

## 2.2 MSCs in Korean

Section 2.1 presented major assumptions of Zhang's (2010), which we adopt for the derivation of Korean MSCs. Before going to the analysis and derivation, let us revisit MSCs and related CHCs in Korean:

- (17) Modifier Sharing Constructions (MSCs) in Korean (= previous (1))
- a. [*selo*            *talm-un* ]    *han*    *namca-ka*    *tuleo-ass-ko*,  
 each.other    resemble-rel    one    man-nom    come.in-pst-conj  
*han yeca-ka*            *naka-ss-ta*.  
 one woman-nom    leave-pst-decl  
 'A man came in and a woman left who resemble each other.'
- b. [*yelsimhi-tul*    *kongpwuhay-ss-te-n* ]*han*    *haksayng-un*    *hapkyekhay-ss-ko*,  
 hard-PL            study-past-ret-rel    one student-top    pass-pst-conj  
*han haksayng-unpwulhapkyekhay-ss-ta*.  
 one student-top    fail-pst-decl  
 'One student passed and the other failed who had studied hard.'
- c. [ *kakkak*    *chwulpalhay-ss-te-n* ]*han*    *haksayng-un* (*imi*)    *tochakhay-ss-ko*,  
 respectively leave-pst-ret-rel    one student-top    already arrive-pst-conj  
*han haksayng-un(acik)*    *o-nun*    *cwung-i-ta*.  
 one student-top    yet    come-prog-cop-decl  
 'One student has already arrived and one student is still coming who left respectively.'
- d. [ *kathun*    *os-ul*            *ip-un* ]    *han*    *namca-ka*    *tuleo-ass-ko*,  
 the.same    clothes-acc    wear-rel    one man-nom    come.in-pst-conj  
*han yeca-ka*            *naka-ss-ta*.  
 one woman-nom    leave-pst-decl  
 'A man came in and a woman left who were wearing the same clothes.'

- e. [ (selo) *talun* kongyak-ul ke-n ] han hwupo-nun  
 each.other different pledge-acc offer-rel one candidate-top  
 tangsentoy-ss-ko, han hwupo-nun naksenhay-ss-ta.  
 win.the.election-pst-conj one candidate-top lose.the.election-pst-decl  
 ‘One candidate won and the other lost the election who offered  
 different pledges.’

(18) Coordinate Head RC Constructions (CHCs) in Korean:

- a. [ *selo* *talm-un* ] han namca-wa han yeca  
 each.other resemble-rel one man-conj one woman  
 ‘a man and a woman left who resemble each other.’
- b. [ *yelsimhi-tul* kongpwuhay-ss-te-n ] han haksayng-kwa talunhaksayng  
 hard-PL study-past-ret-rel one student-conj otherstudent  
 ‘one student and the other who had studied hard.’
- c. [ *kakkak* chwulpalhay-ss-te-n ] han haksayng-kwa talunhaksayng  
 respectivelyleave-pst-ret-rel one student-conj other student  
 ‘one student and the other who left respectively’
- d. [ *kathum* os-ul ip-un ] han namca-wa han yeca  
 the.same clothes-acc wear-rel one man-conj one woman  
 ‘a man and a woman who were wearing the same clothes.’
- e. [ (selo) *talun* kongyak-ul ke-n ] han hwupo-wa  
 each.other different pledge-acc offer-rel one candidate-conj  
 talun hwupo  
 other candidate  
 ‘One candidate and the other who offered different pledges.’

As for (18), given that Korean does not possess an overt relative pronoun in the relative clause, a non-overt operator co-indexed with the plural coordinate head is assumed to have moved to Spec position of the relative clause (CP) as illustrated below in (19).

- (19) a. [<sub>CP</sub> Op<sub>i&j</sub> selo *talm-un* ] han namca<sub>i</sub>-wa han yeca<sub>j</sub>  
 each.otherresemble-rel one man-conj one woman  
 ‘a man and a woman left who resemble each other.’
- b. [<sub>CP</sub> Op<sub>i&j</sub> *yelsimhi-tul* kongpwuhay-ss-te-n]

- hard-PL study-past-ret-rel  
 han haksayng<sub>i</sub>-kwa talun haksayng<sub>j</sub>  
 one student-conj other student  
 ‘one student and the other who had studied hard.’
- c. [<sub>CP</sub> Op<sub>i&j</sub> kakkak chwulpalhay-ss-te-n ]  
 respectively leave-pst-ret-rel  
 han haksayng<sub>i</sub>-kwa talunhaksayng<sub>j</sub>  
 one student-conj other student  
 ‘one student and the other who left respectively’
- d. [<sub>CP</sub> Op<sub>i&j</sub> kathun os-ul ip-un ] han namca<sub>i</sub>-wa han yeca<sub>j</sub>  
 the.same clothes-acc wear-rel one man-conj one woman  
 ‘a man and a woman who were wearing the same clothes.’
- e. [<sub>CP</sub> Op<sub>i&j</sub> (selo) talun kongyak-ul ke-n ]  
 each.other different pledge-acc offer-rel  
 han hwupo<sub>i</sub>-wa talun hwupo<sub>j</sub>  
 one candidate-conj other candidate  
 ‘One candidate and the other who offered different pledges.’

This assumption is based on the analysis of English ‘that’ relative clause. As is well known (Authier 1989, Jaeggli 1981), an empty operator is assumed to move to [Spec, CP] in the absence of an overt relative pronoun in English as schematically represented in (20).

- (20) a. This is the letter<sub>i</sub> [<sub>CP</sub> Op<sub>i</sub> that [<sub>IP</sub> t<sub>i</sub> upset John]].  
 b. There parked the car<sub>i</sub> and the truck<sub>j</sub> [<sub>CP</sub> Op<sub>i&j</sub> that [<sub>IP</sub> t<sub>i&j</sub> had collided]].

The postulation of a null operator can answer the questions raised as for the occurrence of various elements resorting to plural antecedents. For instance, as for CHCs introduced in (18), an immediate question arises how Binding Principle A is met in (18a) since the plural antecedent ‘han namca-wa han yeca’ does not seem to be structurally higher than the anaphor ‘selo’. Apparently, the anaphor ‘selo’ in (18a) does not seem to be bound, i.e. it apparently has no c-commanding antecedent.<sup>10</sup> However, as illustrated in (19a), which is a schematic syntactic representation of

(18a), a covert operator co-indexed with the plural antecedent ‘han namca-wa han yeca’ is assumed to exist in the bracketed CP in (18a). This way the licensing of an anaphor is well accounted for. Similar questions can be raised as for the remaining examples (18b-e). Examples (18b-c) contain elements such as ‘tul’ and ‘kakkak’ that require plural entities. This requirement is met, given a syntactic representation (19b-c), where a null operator is posited in the relative clause. This null operator, being co-indexed with the plural antecedents, licenses ‘tul’ and ‘kakkak’. The sentence internal readings of examples (18d-e) are given a similar account. To be specific, they involve ‘kathun/talun’, which allow sentence-internal reading as long as they can find plural entities within a sentence.<sup>11</sup> Sentence-internal readings are predicted by schematic representation (19d-e), which postulates a null plural operator in the relative clause. This potentially yields sentence-internal reading.

Although we have got around the licensing of plural-denoting elements in MSCs, we still have difficulty analyzing the constructions. As is the case in English, neither movement nor deletion works for the account of the constructions as in (21).

(21) No movement/deletion analysis

- a. \* [selo-lul cal a-nun ]<sub>k</sub> han namca-ka tuleo-ass-ko,  
 \_\_\_\_\_<sub>k</sub> han yeca-ka naka-ss-ta.  
 ‘A man came in and a woman left who knew each other well.’
- a'.\* [ selo-lul cal a-nun ] han namca-ka tuleo-ass-ko,  
 [-selo-lul—cal—a-nun—] han yeca-ka naka-ss-ta.  
 ‘A man came in and a woman left who knew each other well.’
- b. \* [ kathunchayk-ul ilk-un ]<sub>k</sub> han haksayng-un hapkyekhay-ss-ko,  
 \_\_\_\_\_<sub>k</sub> han haksayng-un pwulhapkyekhay-ss-ta.  
 ‘One student passed and the other failed who had read the same book.’  
 (Under sentence-internal reading only)

<sup>10</sup> This apparent problem arises in Korean since the relative pronoun co-indexed with the head noun is not observed in Korean relative clauses. This contrasts with English, where the overt relative pronoun co-indexed with the head noun is present as exemplified in (i).

(i) the man<sub>i</sub> and the woman<sub>j</sub> who<sub>i&j</sub> love each other<sub>i&j</sub>

In this case, the anaphor ‘each other’ is bound by the trace of relative pronoun ‘who’ in its binding domain and successfully licensed.

<sup>11</sup> Refer to footnote 1 for sentence-internal reading.

b'.\* [ kathun chayk-ul ilk-un ] han haksayng-un hapkyekhay-ss-ko,  
 [~~kathun~~—~~chayk-ul ilk-un~~] han haksayng-un pwulhapkyekhay-ss-ta.  
 ‘One student passed and the other failed who had read the same book.’  
 (Under sentence-internal reading only)

In addition, the constructions are subject to the restriction that modifiers should occur sentence-initially for modifier-sharing interpretation as revealed by (22).<sup>12</sup> With the shared-modifiers non-initial, these two sentences fail to yield the intended modifier-sharing interpretations. Note that the underlined modifier is intended to be shared by the subsequent two NPs ‘cellar’ and ‘kitchen’ in (22a) and two NPs ‘man’ and ‘woman’ in (22b). This contrasts with (22a’-b’), where with the shared-modifier sentence-initial, those two sentences successfully yield the intended modifier-sharing interpretations.<sup>13</sup>

- (22) a. ku pa-nun copun thonglo-lo yenkyeltoy-n changko-lul kac-koiss-ko,  
 the bar-top narrow path-thru be.connected-rel cellar-acc possess-pres-conj  
 ku leysthorang-un \_\_\_\_\_ pwuekh-ul kaci-ko iss-ta.  
 the restaurant-top kitchen-acc possess-pres-decl  
 (Intended context) \*The cellar is linked to the kitchen through a narrow path.  
 (Allowed context) The bar is linked to the cellar through a narrow path.
- a’. copun thonglo-lo yenkyeltoy-n ku pa-nun changko-lul kac-ko iss-ko,  
 narrow path-thru be.connected-rel the bar-top cellar-acc possess-pres-conj  
 \_\_\_\_\_ ku leysthorang-un pwuekh-ul kaci-ko iss-ta.  
 the restaurant-top kitchen-acc possess-pres-decl  
 (Intended and allowed context) The bar is linked to the restaurant  
 through a narrow path.
- b. na-nun (selo) cal a-nun han namca-lul manna-ss-ko,

<sup>12</sup> One of the reviewers mentioned that a list of examples in (20) allow both sentence-internal and sentence-external readings as is observed in the case of *kathun/talun*. Noteworthy is that our proposed derivation applies to the sentence-internal readings only; a coordinate DP complex is postulated at the initial stage of the derivation *only under the shared-modifier reading*.

<sup>13</sup> One of the reviewers pointed out that the degree of acceptability depends on the pragmatic context and that sentence (22b’) is at best marginally acceptable to him/her and their informants. The degradedness or marginality, if any, is conjectured to be due to the markedness of the construction *per se*. Still, some pause after the relative clause improves the acceptability of the sentence, which is yet to be verified via phonetic experiments.



- (23) a. [selo-lul cal a-nun ] han namca-ka tuleo-ass-ko,  
 each.other-acc well know-rel one man-nom come.in-pst-conj  
 han yeca-ka naka-ss-ta.  
 one woman-nom leave-pst-decl  
 ‘A man came in and a woman left who knew each other well.’
- b. [kathun chayk-ul ilk-un ] han haysayng-un hapkyekhay-ss-ko,  
 the.same book-acc read-rel one student-top pass-conj  
 han haksayng-un pwulhapkyekhay-ss-ta.  
 one student-top fail-pst-decl  
 ‘One student passed and the other failed who had read the same book.’  
 (Considered under the sentence-internal reading only)

Since the derivation crucially resorts to Hornstein and Nunes’s (2002) sideward movement, we offer some justification for sideward movement.

### 3.1 Some justification for Sideward Movement

Let us consider two major properties of sideward movement that are incompatible with general assumptions in traditional GB syntax. In general, the movement of  $\alpha$  lands in a position that c-commands the launching site. Sideward movement, however, involves movement from one tree into another as depicted in [2] of Section 3.2. Given that the landing site is in a different tree than that of the launching site, it neither c-commands nor is c-commanded by the launching site.

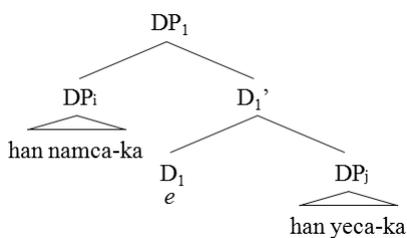
Second, the element that undergoes sideward movement may originate from a theta position and then land in another theta position in a new tree. This operation is allowed since the element undergoing sideward movement can be re-selected by a verb in the new working site. Although this non-standard movement appears to be in conflict with assumptions of the pre-minimalism era and is taken as the last resort operation, it does not add any new conditions to our current computational system (Bobaljik and Brown 1997, Nunes 2001, Hornstein 2001, and Nunes and Uriagereka 2000). Rather, it removes the stipulation that movement must target the same tree. Hornstein and Nunes (2002), among others, claim that such a stipulation is a residue of D-structure, which is eliminated in the Minimalist Program.

### 3.2 A sample derivation

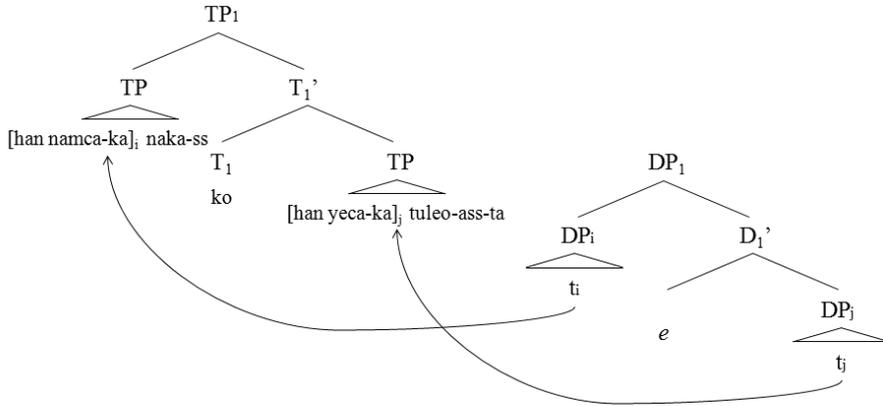
This section presents derivations of two representative examples of MSCs in Korean. In particular, we adopt sideward movement approach aided with relaxation of CSC in the sense of Zhang (2010). Let us see how MSCs (24-25) are derived under the proposed approach. Below [1-4] are step by step derivations of (24).

- (24) [selo-lul            cal    a-nun ]    han namca-ka    naka-ss-ko,  
       each.other-acc    well    know-rel    one man-nom    leave-pst-conj  
       han yeca-ka            tuleo-ass-ta.  
       one woman-nom        come.in-pst-decl.  
       ‘A man left and a woman came in who knew each other well.’

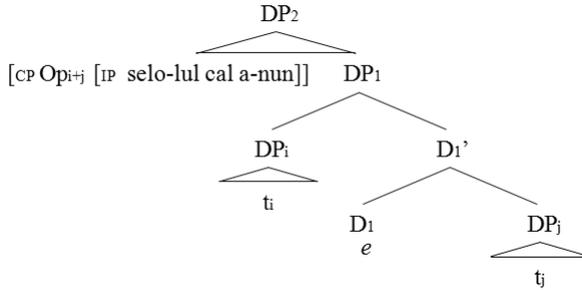
[1]  $DP_i$  and  $DP_j$  form a coordinate complex headed by a null  $D_1$  in their base-positions;



[2] Both  $DP_i$  and  $DP_j$  move out of the coordinate complex  $DP_1$  and then are remerged with the verbs via separate sideward movements;

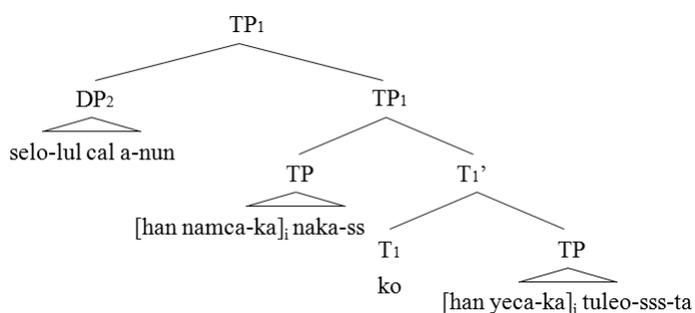


[3] The modifier or the relative clause merges with DP<sub>1</sub>, forming DP<sub>2</sub> in accordance with late merge of adjuncts (Lebeaux 1990, Chomsky 1993, among others).



[4] DP<sub>2</sub>, which hosts the relative clause and the trace of the DP<sub>1</sub> after the conjunct movement, adjoins to the left of TP<sub>1</sub>. Now, the MSC is obtained.<sup>15</sup>

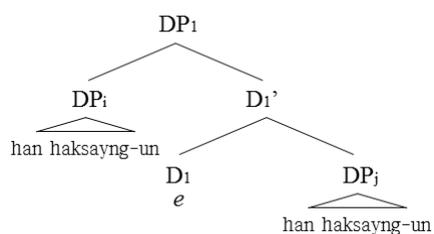
<sup>15</sup> As a reviewer pointed out, placing *-ko* under T is dubious, given that Korean is a head-final language. The syntactic status of *-ko* certainly needs an in-depth reexamination. At this juncture, however, since the position of *-ko* would not crucially affect our proposed analysis, it will be left for our future research.



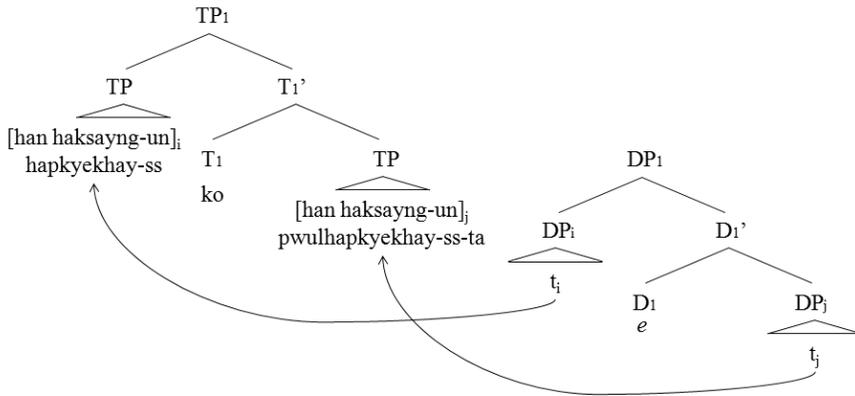
Let us see how the whole derivational processes work by considering another example of our concern:

- (25) [kathun chayk-ul ilk-un ] han haysayng-un hapkyekhay-ss-ko,  
 the.same book-acc read-rel one student-top pass-conj  
 han haksayng-un pwulhapkyekhay-ss-ta.  
 one student-top fail-pst-decl  
 ‘One student passed and the other failed who had read the same book.’  
 (Considered under the sentence-internal reading only)

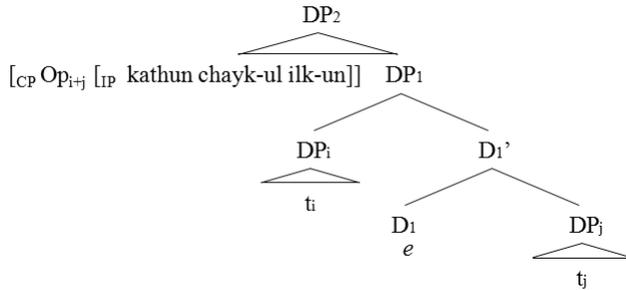
[1]  $\text{DP}_i$  and  $\text{DP}_j$  form a coordinate complex headed by a null  $\text{D}_1$  in their base-positions;



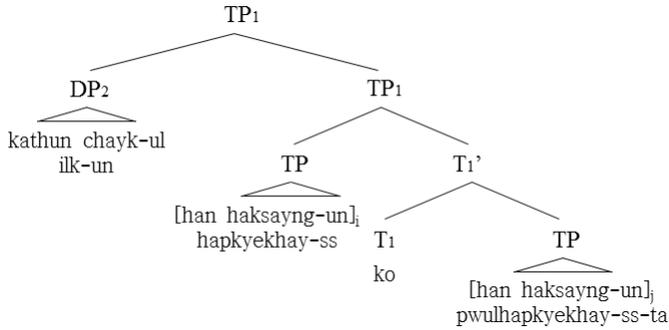
[2] Both  $\text{DP}_i$  and  $\text{DP}_j$  move out of the coordinate complex  $\text{DP}_1$  and then are remerged with the verbs via separate sideward movements;



[3] The modifier or the relative clause merges with DP<sub>1</sub>, forming DP<sub>2</sub> in accordance with late merge of adjuncts (Lebeaux 1990, Chomsky 1993, among others).



[4] DP<sub>2</sub>, which hosts the RC and the trace of the DP<sub>1</sub> after the conjunct movement, adjoins to the left of TP. Now, the MSC is obtained.

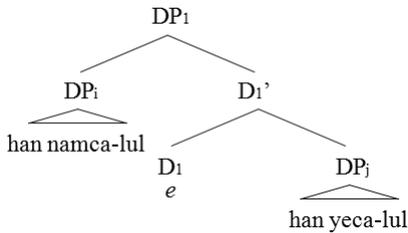


Crucially, as mentioned at the end of section 2.2, our proposed derivation never yields an unacceptable example like (26) (= previous (22b)).<sup>16</sup>

- (26) na-nun (selo) \_\_\_\_\_ cal a-nun han namca-lul manna-ss-ko,  
 I-top each.other well know-rel one man-acc meet-pst-conj  
 Mary-nun \_\_\_\_\_ han yeca-lul manna-ss-ta.  
 Mary-top one woman-acc meet-pst-decl  
 (Intended Context) \*A man and a woman know each other well.  
 (Allowed Context) The man and I know each other well.

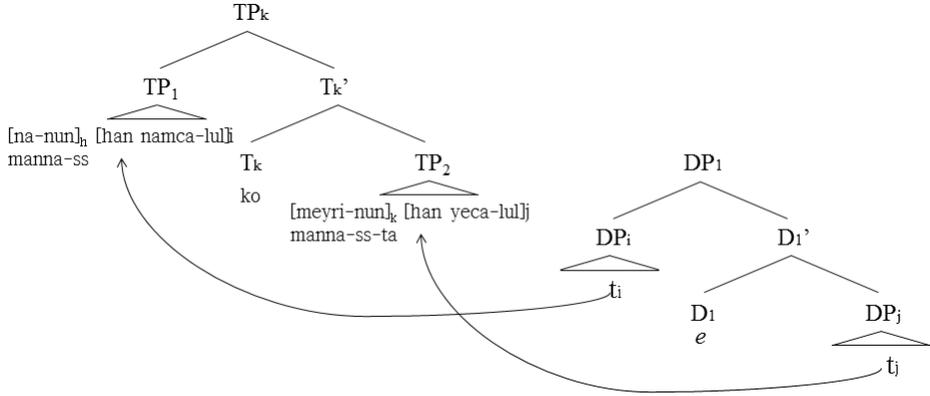
Let us take the following derivation into account in order to see how our proposed analysis rules out an example like (26) under the intended context.

[1]  $DP_i$  and  $DP_j$  form a coordinate complex headed by a null  $D_1$  in their base-positions;

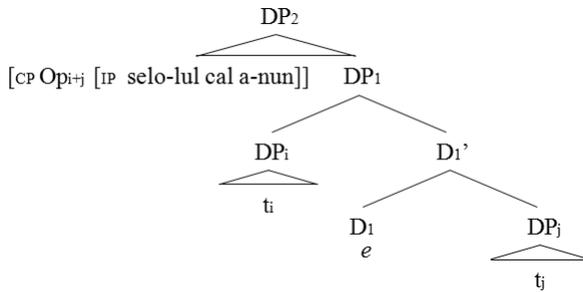


<sup>16</sup> This is unacceptable under the intended reading.

[2] Both  $DP_i$  and  $DP_j$  move out of the coordinate complex  $DP_1$  and then remerge with the verbs via separate sideward movements. Also, both  $DP_h$  and  $DP_k$  are selected from numeration and are merged with  $VP_1$  (within  $TP_1$ ) and  $VP_2$  (within  $TP_2$ ), respectively. Two TPs are now built up.



[3] The modifier or the relative clause (RC) merges with  $DP_1$ , forming  $DP_2$  in accordance with late merge of adjuncts (Lebeaux 1990, Chomsky 1993, among others).



[4]  $DP_2$ , which hosts the RC and the trace of the  $DP_1$  after the conjunct movement, tries to adjoin to the left of VP to obtain the intended word order.<sup>17</sup>

<sup>17</sup> At this point of derivation, an alternative proposal would be that  $DP_2$  merges with the conjoined VPs and then the subject in the Spec of the initial VP, as assumed under VP internal subject



(RDs) as in (27).<sup>19</sup>

- (27) a. han namca-ka tuleo-ass-ko,  
 one man-nom come.in-pst-conj  
 han yeca-ka naka-ss-ta [ selo-lul cal a-nun].  
 one woman-nom leave-pst-decl each.other-acc well know-rel  
 ‘A man came in and a woman left who knew each other well.’
- b. han haysayng-un hapkyekhay-ss-ko,  
 one student-top pass-conj  
 han haksayng-un pwulhapkyekhay-ss-ta [kathun chayk-ul ilk-un].  
 one student-top fail-pst-decl the.same book-acc read-rel  
 ‘One student passed and the other failed who had read the same book.’  
 (Considered under the sentence-internal reading only)

Despite many researches (Refer to Ko 2014, among others for extensive discussion on the topic), there is still no consensus on the debate whether RDs are mono- or bi-clausal, or whether they are base-generated as such or derived through movement. In particular, right-dislocated shared modifiers as in (27) are adding more complication and puzzle to the analysis of the constructions due to the unusual dependency between the modifier and the (split) antecedent. Still, as we can see, RDs come out in the course of our derivation of MSCs. To be specific, at the last stage of our proposed derivation, RDs as in (27) are derived once the DP<sub>2</sub> merges with or *right-adjoins* to TP<sub>1</sub>.<sup>20</sup> This derivation is non-accidental and crucial in that

<sup>19</sup> Though marginal, they are still acceptable.

<sup>20</sup> See Step 4 of the derivation of examples (24-25). The suggested right-adjunction is available in English as well, which, unlike in Korean, yields MSCs rather than RDs. For instance, the right-adjunction under our proposed analysis yields an MSC as in (i) while the left-adjunction merely results in unacceptability.

- (i) A man came in and a woman left [who were quite similar].  
 (ii) \*[Who were quite similar] a man came in and a woman left.

An outstanding question here is why shared relative clauses in English can undergo right-adjunction only, unlike those in Korean. Before answering this question, let us consider the following set of examples (iii-iv).

- (iii) Topicalization:  
 Those books we try not to read \_\_\_\_\_.

right-dislocated adnominal appendices with split targets are attested in Korean although adnominal appendices constitute major challenges for either movement or base-generation analysis (Ko 2014 and other references therein).<sup>21</sup> If our analysis is on the right track, it implies that the adnominal appendix does not form an independent clause, undermining the bi-clausal analysis of RDs (at least as for the adnominal appendices with split targets). This further implies that the sideward movement approach, though a last resort operation (Nunes 2012), saves a number of syntactic derivations that otherwise would crash. That is, this non-standard movement operation can account for a limited number of constructions that are not compatible with various traditional assumptions in syntactic theories.<sup>22</sup>

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\*Those books we try not to read *them*.

(iv) Left-Dislocation:

John, I think *he* is the criminal.

Bill, I cannot stand *the jerk*.

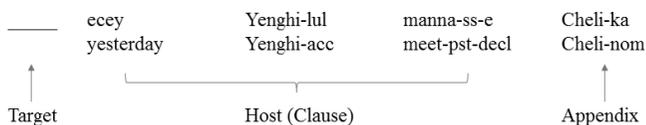
As exemplified above, the gap cannot be filled in under topicalization whereas it can under left-dislocation. Based on the above facts, a plausible line of thinking would be that example (ii) is similar to topicalization, not left-dislocation in that the gap assumed to follow either ‘a man’ or ‘a woman’ in (ii) cannot be filled in with other overt expressions. This property suggests that example (ii) is (intended to be) a type of topicalization, setting the unusual dependency aside. Why is the example (ii) ruled out then? Does the problem stem from the fact that “relative clauses” are never able to serve as a topic in English? In other words, is the problem something *semantic*? Our conjecture is that the problem has something to do with the fact that the relative clause in English, as a non-shared modifier, resists leftward separation from the head in other constructions as well, not merely as a shared modifier:

(v) a. A man came in [who were from New York]. (Rightward adjunction)

b. \* [Who were from New York] a man came in. (Leftward adjunction)

That is, the unacceptability of (ii) is not a construction-specific phenomenon and thus does not undermine our proposed analysis. Rather, it is a language-internal property specific to English, not Korean.

<sup>21</sup> Here is some terminology (Yoon and Lee 2009)



<sup>22</sup> A couple of recent works, e.g. Chung 2014 for delimiter scope expansion in Korean also resorted to this last resort operation for the derivation of the relevant construction.

#### 4. Concluding Remarks

Sideward movement, coupled with the relaxation of the coordinate structure constraint, paves the way for accounting for modifier-sharing constructions, which are in conflict with principles governing the syntactic relation between elements and their shared modifier. As a preliminary research on the relevant topic, we hope we shed light on the less studied area in Korean syntax, opening up the possibility for alternative analyses and subsequent researches on other related topics.

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