

Gapping in V+*ko* construction in Korean as dependent ellipsis *

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Choi, YoungSik. (2019). Gapping in V+*ko* construction in Korean as dependent ellipsis. *The Linguistic Association of Korea Journal*, 27(3), 75–97. It has been argued that Korean has two types of V+*ko* coordinate constructions: the tensed V+*ko* construction and the un-tensed V+*ko* construction. I claim only the former constitutes a genuine instance of coordination structure, diverging from the common view (Yoon 1993, 1994, 1997, Chung 2001, 2005, Kim and Cho 2012, Jung 2016, among others). I will show that gapping in Korean conforms to the cross-linguistic generalization that it elides the tensed verb in a conjunct coordinated with another clause containing the same verb. I propose dependent ellipsis for the analysis of gapping in Korean, an idea as originally proposed by Williams (1997), Ackema and Szendrői, (2002) and Hernández (2007), among others, for English gapping. The striking common aspects of gapping in English and Korean reflect a common mechanism of dependent ellipsis beyond the superficial difference in the directionality of gapping as attributed to the word order parameters of the universal grammar.

Key words: gapping, dependent, ellipsis, correlate, tense

1. Introduction

Gapping is a kind of ellipsis phenomenon in head initial languages as in English which elides the tensed verb in the second conjunct coordinated with another clause containing the same verb whereas in head final languages like Korean the tensed verb

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in the first conjunct is elided, as illustrated with the English and Korean examples respectively below in (1–2), with IND in (2) standing for indicative.

(1) John bought a book and Mary \emptyset a newspaper. (\emptyset =bought)

(2) John-un chayk-ul \emptyset , Mary-nun sinmwun-ul ilk-ess-ta.
John-TOP book-ACC Mary-TOP newspaper-ACC read-PAST-IND
'John read a book and Mary read a newspaper.'
(\emptyset = *ilk-ess-ko* 'read-and')

Ross (1970) dubs gapping in the second conjunct in English above in (1) forward gapping and gapping in the first conjunct in Korean above in (2) backward gapping. He further goes on to suggest that the two types of gapping are closely associated with the word order parameter across languages. Head-initial languages like English allow forward gapping only, whereas head-final languages like Korean allow backward gapping only (also see Koutsoudas 1972, and Hernández 2007, among others).¹⁾

In this paper, I will suggest that gapping in Korean also elides the tensed verb in a conjunct coordinated with another clause containing the same verb, with the non-trivial implication that Korean gapping also conforms to the cross-linguistic generalization on gapping. I will also suggest dependent ellipsis as a syntactic operation is what is responsible for gapping in Korean following Williams (1997), Ackema and Szendrői, (2002) and Hernández (2007), among others as proposed for the analysis of gapping in English. The common properties of gapping in Korean and English beyond the difference in the directionality of gapping simply follows given that the same mechanism of dependent ellipsis is at work in English and Korean, each representing head initial and head final languages. Throughout I will refer to the elided verb in a conjunct as the gap and the corresponding verb in the other conjunct as the correlate.

1) Note that gapping is different from pseudo-gapping, which involves discontinuous elements as shown below in (ib) (also see Lasnik 1999).

(i) a. Mary counted John a friend but John doesn't count Mary a friend
b. Mary counted John a friend but John doesn't ~~count~~ Mary ~~a~~friend
(Freidin 2012:239)

The organization of the present paper is as follows. In section 2, I briefly review past proposals for gapping to lay the ground work for the analysis of Korean gapping in subsequent sections. In section 3, I will critically review two *V+ko* constructions: tensed *V+ko* construction and un-tensed *V+ko* construction, both of which arguably constitute coordination structures in Korean. I argue only the former qualifies as a bona fide coordination structure, quite different from the widely held view (Yoon 1993, 1994, 1997, Chung 2001, 2005, Kim and Cho 2012, Jung 2016, among others). In section 4, I will argue for the dependent ellipsis as a syntactic operation for gapping in Korean *V+ko* construction as well adopting the original ideas by Williams (1997), Ackema and Szendrői (2002) and Hernández (2007), for English gapping. In section 5 I will present the common properties of gapping in English and Korean to support the present thesis. Section 6 is the conclusion and theoretical implications.

2. Past Proposals for Gapping in Korean

Since Ross (1970)'s influential proposal that gapping involves deletion of the tensed verb in both head-initial languages as in English and head final languages as in Korean, there have been various proposals advanced for the analysis of gapping across languages (see Jackendorff 1971, Maling 1972, Hankamer 1979, Reinhart 1991, Abe and Hoshi 1995, Kim 1997, Lasnik 1999, Johnson 1994, 1996, 2006, Lee 2005, Hernández 2007, Culicover 2009, Freidin 2013, Jung 2016, among many others).

As for gapping in Korean type languages as above in (2), which belong to head final languages, Johnson (1994, 1996, 2000, 2006), for example, suggests that it involves right node raising of the tensed verb in an across the board fashion. Abe and Hoshi (1995) and Kim (1997) in the meantime argue that it is derived from focus movement of the NPs out of VP to TP adjoined position in both conjuncts followed by the deletion of the TP in the first conjunct. Of the two, Johnson's proposal is particularly influential, since the word order fact follows directly from his proposal. The proposal accounts for why gapping in Korean, which is a head final language has the tensed verb at the second conjunct of the coordinate construction. It also follows from his proposal that the structure feeding gapping is necessarily

coordinate structures, which is the fact across languages. Johnson's proposal is problematic, however, when it comes to the *V+ko* coordination structure above in (2), repeated below as (3).

- (3) John-un chayk-ul Ø, Mary-nun sinmwun-ul ilk-ess-ta.
 John-TOP book-ACC Mary-TOP newspaper-ACC read-PAST-IND
 'John read a book and Mary read a newspaper.'
 (Ø=*ilk-ess-ko* 'read-and')

Given the lack of morphological isomorphism between the two verbs in (3), it is hardly the case that gapping in Korean is right-node-raising.²⁾ Note that the verb in the first conjunct is *ilkess-ko* 'read-and' and the one in the second conjunct is *ilkesta* 'read,' thus hardly justifying the right node raising of the tensed verb in an across the board fashion.

In the meantime, the focus analysis of gapping in Korean (Abe and Hoshi 1995, and Kim 1997 inter alia) involves massive focus movement of NPs out of VP to TP adjoined position in both conjuncts along with the subsequent deletion of TP in the first conjunct, as schematically shown below in (4) for the gapping construction above in (3).

- (4) [_{TP} NP_i-TOP NP_j-ACC [_{TP} [_{VP} t_i t_j V]], and [_{TP} NP_k-TOP NP_l-ACC
 [_{TP} [_{VP} t_k t_l V]].

While a single focus movement is certainly possible, multiple focus movement is problematic, especially if the movement is to simply derive the gapping construction. Moreover, gapping in Korean is still possible with the manner adverbial which adjoins

2) One may suggest the following is certainly compatible with across the board movement of the tensed verb. However, note that it is still the case that deletion of the tensed verb is compatible with the construction, whereas the across the board movement approach cannot deal with the sentence above in (3).

(i) John-un chayk-ul Ø, kuliko Mary-nun sinmwun-ul ilk-ess-ta.
 John-TOP book-ACC and Mary-TOP newspaper-ACC read-PAST-IND
 'John read a book and Mary read a newspaper.'
 (Ø = *ilk-ess-ta* 'read')

to VP as shown below in (5).

- (5) John-un yelshimhi chayk-ul Ø, Mary-nun coyonghi sinmwun-ul
 John-TOP earnestly book-ACC Mary-TOP quietly newspaper-ACC
 ilk-ess-ta.
 read-PAST-IND
 ‘John read a book earnestly and Mary read a newspaper quietly.’
 (Ø = *ilk-ess-ko* ‘read-and’)

The grammaticality of the sentence above in (5) crucially undermines the focus movement approach, since the presence of the VP adjoined manner adverbial strongly suggests that gapping in (5) does not involve TP deletion following the massive focus movement of NPs out of VP in both conjuncts. Below in the subsequent section, I will critically review two types of *V+ko* constructions which arguably constitute coordination structure in Korean: tensed *V+ko* construction and un-tensed *V+ko* construction, whose precise status crucially matters for our analysis of gapping in Korean throughout.

3. Two Types of *V +ko* Constructions

It should be noted that gapping applies to the coordinate structures. Coordinate construction in Korean typically comprises clauses with the tensed verb in the first conjunct marked with *ko* ‘and’ that corresponds to *and* in English as illustrated below in (6).

- (6) John-un chayk-ul ilk-ess-ko, Mary-nun sinmwun-ul
 John-TOP book-ACC read-PAST-and Mary-TOP newspaper-ACC
 ilk-ess-ta.
 read-PAST-IND
 ‘John read a book and Mary read a newspaper.’

Still, there have been quite a lot of discussions regarding whether the construction below in (7) with the un-tensed *V+ko*, that is, with no past tense morpheme *ess*

‘did’ realized as part of the verbal morphology, constitutes a coordinate construction as well.

- (7) John-un chayk-ul ilk-Ø-ko, Mary-nun sinmwun-ul
 John-TOP book-ACC read-and Mary-TOP newspaper-ACC
 ilk-ess-ta.
 read-PAST-IND
 ‘John read a book and Mary read a newspaper.’

Despite the non-trivial difference in the tense of the verb in *V+ko* constructions in (6) and (7), the common assumption in the literature is that both constitute coordinate constructions (Yoon 1993, 1994, 1997, Chung 2001, 2005, Kim and Cho 2012, Jung 2016, among others), the reason being the symmetry in tense and mood interpretation in both conjuncts in the two constructions. The verb in the first conjunct in (7), although it does not have past tense morpheme on it, is construed as past tense symmetrically with the past tense verb in the second conjunct. Similarly, the verbs in the first conjunct both in (6–7), although they do not have their own mood marker, share the same mood respectively with the verb in the second conjunct to be construed as indicatives.

So, Yoon (1993, 1994, 1997), for example, assuming morphemes of the verb enter separately into the numeration set, suggests that the structure in (7) is an instance of VP coordination, and the one in (6) IP coordination, the difference being the level of coordination. According to Yoon (1993, 1994, 1997), the symmetric interpretation of the mood in (6) is achieved by the mood morpheme adjoining to IP such that it can have scope over both the two conjoined IPs. And the symmetric interpretation of tense and mood in (7) is attributed to tense and mood morphemes respectively adjoining to VP and IP such that both have scope over the first conjunct. Those tense and mood morphemes later on combine with the verb in the second conjunct via the process of phrasal affixation.

In the meantime, Chung (2001, 2005), assuming strong projectionist view of checking theory on verbal morphology, according to which the verb is introduced into the numeration set fully inflected with all the morphemes on the verb, suggests that both (6) and (7) are TP coordination structures. The symmetric interpretation of the mood in (6) is achieved under his system by the mood marker heading CP which

has scope over both TP conjuncts. For (7), he further suggests that the first conjunct has a null T which is construed symmetrically with the past tense of the second conjunct. As for mood in (6–7), the mood morpheme projects CP such that it can have scope over both conjuncts, yielding symmetric mood interpretation.

Whichever is the detail of the two proposals, it should be noted that the operation gapping applies to the tensed verb in a conjunct coordinated with another clause containing the same verb across languages (Ross 1970, Hankamer 1979, and Hernández 2007, *inter alia*). Thus once one assumes (7) is a coordinate structure as well as (6), thus an input structure for the gapping construction above in (3), it necessarily violates the condition for gapping to apply in the former, since the first verb in (7) is not tensed, quite unlike the verb in (6).³⁾

Moreover, a growing body of research suggests that the un-tensed *V+ko* construction does not constitute a coordinate construction (Kim 1995, 2000, Choi 2014, among others). In fact, as will be demonstrated below, the un-tensed *V+ko* construction, quite unlike the tensed *V+ko* construction is not subject to the coordinate structure constraint, which in turn strongly suggests that the former, quite in contrast to the latter, does not constitute coordinate construction. It is a well-known fact that any movement in the coordinate construction is subject to the coordinate structure constraint given below in (8).

(8) Coordinate structure constraint

In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct.

(Ross, 1974, p. 181).

The following examples in (9–10) in English illustrate how coordinate structure constraint works to regulate movement in the coordinate construction:

3) One may wonder whether *ilk-ess-ko* ‘read-PAST-and’ and *ilk-ess-ta* ‘read-PAST-IND’ are identical. Note that it is the fact that in the well-formed coordination structure in Korean the verb in the first conjunct is necessarily introduced with the sentence conjoining morpheme *ko* ‘and,’ and the one in the second conjunct is introduced with the mood marker.

- (9) a. * Who_i did you see [t_i and Sandy]?
 b. * Who_i did you see [Sandy and t_i]?
- (10) a. * Who_i did you see [a picture of t_i and the latest movie]?
 b. * Who_i did you see [the latest movie and a picture of t_i]?
 (Culicover, 2009, p. 348)

Movement of the *wh*-word in the sentences above in (9–10) all violate coordinate structure constraint in one way or another as stated above in (8). When it comes to Korean, Choi (2014) crucially observes that the un-tensed *V+ko* does not show coordinate structure constraint. For this, consider first the following where an element contained in a conjunct undergoes movement:

- (11) a. John-i [son-ul ssi-ko] [pap-ul mek-ess-ta]
 John-NOM hand-ACC wash-and rice-ACC eat-PAST-IND
 'John washed his land and ate the meal.'
- b. Pap_i-ul, John-i [son-ul ssi-ko] [t_i mek-ess-ta]
 meal-ACC John-NOM hand-ACC wash-and eat-PAST-IND
 'John washed his land and ate the meal.'
 (Choi, 2014, p. 62)

The structure above in (11a) is an instance of VP coordination, according to Yoon (1993, 1994, 1997) as indicated. Or one may suggest it is TP coordination with the unpronounced *pro* serving as the subject of the second conjunct TP, following Chung (2001, 2005). Whatever is the precise structure, it is clear the object of the second conjunct is fronted to the sentence initial position as shown in (11b). If the structure in (11a) is a coordinate structure, (11b) should be ungrammatical on a par with (9) in English, where the element contained in a conjunct underwent movement. As one can see, however, (11b) is quite grammatical, which is quite unexpected if the un-tensed *V+ko* construction indeed constitutes a genuine coordinate construction. Next, consider the case where one of the conjuncts undergoes movement as shown below in (12b).⁴⁾

4) An anonymous reviewer alludes that given that (12b) is slightly deviant, it may not be

- (12) a. Mary-nun John-i [son-ul ssis-ko] [pap-ul
 Mary-TOP John-NOM hand-ACC wash-and meal-ACC
 mek-ess-ta-ko] sangkakhanta.
 eat-PAST-IND-COMP think
 'Mary thinks John washed his land and ate the meal.'
- b. ?[Son-ul ssis-ko]_i Mary-nun John-i t_i [pap-ul
 hand-ACC wash-and Mary-TOP John-NOM meal-ACC
 mek-ess-ta-ko] sayngkakhanta.
 eat-PAST-IND-COMP think
 'Mary thinks John washed his land and ate the meal.'

The sentence above in (12b) is acceptable, which is again quite unexpected if the un-tensed *V+ko* construction constitutes a bona fide coordination structure. Note that regardless of the level of coordination, i.e., VP or TP, it is clear the first adjunct moved out of the purported coordination structure above in (12b). In the meantime, note that quite interestingly, when one minimally changes the sentences above in (11–12) by replacing the verb in the first conjunct with a tensed one, a sharp difference in grammaticality results, as shown below in (13–14).

- (13) a. John-i [son-ul ssis-ess-ko] [pap-ul mek-ess-ta].
 John-NOM hand-ACC wash-PAST-and rice-ACC eat-PAST-IND
 'John washed his land and ate the meal.'
- b. *Pap_i-ul, John-i [son-ul ssis-ess-ko] [t_i mek-ess-ta]
 meal-ACC John-NOM hand-ACC wash-PAST-and eat-PAST-IND
 'John washed his land and ate the meal.'
- (14) a. Mary-nun John-i [son-ul ssis-ess-ko] [pap-ul
 Mary-TOP John-NOM hand-ACC wash-PAST-and meal-ACC
 mek-ess-ta-ko] sayngkakhanta.
 eat-PAST-IND-COMP think

taken as an argument for the present proposal that only tensed *V+ko* clause constitutes a genuine coordinate construction. Note that the deviant status rather has to do with scrambling across more than one clause boundaries *per se*, hence not damaging the present proposal.

‘Mary thinks John washed his land and ate the meal.’

- b. **[Son-ul ssis-ess-ko]_i Mary-nun John-i t_i [pap-ul hand-ACC wash-PAST-and Mary-TOP John-NOM meal-ACC mek-ess-ta-ko] sayngkakhanta.*
 eat-PAST-IND-CCOMP think
 ‘Mary thinks John washed his land and ate the meal.’

The state of affairs in grammaticality in the paradigm above in (11–14) strongly suggests that tensed *V+ko* and the un-tensed *V+ko* are categorically different in that only the former constitutes a coordinate construction. As a matter of fact, Choi (2014) specifically suggests that the un-tensed *V+ko* is an adjunct clause headed by *ko* ‘and’ that in turn projects CP.⁵⁾ To make his case, he illustrates the following in (15b) where an element moves out of the first conjunct:^{6, 7)}

- (15) a. *John-i [son-ul ssis-ko] [pap-ul mek-ess-ta].*
 John-NOM hand-ACC wash-and rice-ACC eat-PAST-IND
 ‘John washed his land and ate the meal.’
 b. **Son_i-ul John-i [t_i ssis-ko] [pap-ul mek-ess-ta].*
 hand-ACC John-NOM wash-and rice-ACC eat-PAST-IND
 ‘John washed his land and ate the meal.’
 (Choi, 2014, p. 65)

5) Choi (2014) in fact suggests that *ko* ‘and’ in the un-tensed *V+ko* construction is a complementizer that heads the adjunct CP.

6) An anonymous reviewer wonders whether it is appropriate to use the inalienable body part *son* ‘hand,’ which may potentially affect the grammaticality judgment of the sentences in (12) for example.

7) An anonymous reviewer observes that (15b) is rather acceptable. I am sympathetic with the reviewer since it may have to do with the possibility of parsing the sequence *John-i son-ul ssis-ko* ‘John washed his hand-and’ as a clause with the null *pro* serving as the subject of *pap-ul mekessta* ‘ate the meal.’ If so, the preposed *son-ul* ‘hand’ is not actually outside the adjunct clause, meaning no adjunct island violation is involved. However, note that once we insert a pause right after the subject *John* such that the overt subject *John* is construed as the subject of *pap-ul mekessta* ‘ate the meal.’ (15b) is quite ungrammatical.

According to him, the ungrammaticality of (15b) is attributed to the violation of the adjunct clause condition (Huang 1982, among others), not violation of coordination structure constraint. I will thus conclude the un-tensed *V+ko* construction above in (7) does not constitute a coordinate structure but an adjunct CP quite unlike the tensed *V+ko* construction in (6), which constitutes a bona fide coordination structure, repeated respectively below as (16) and (17).⁸⁾

- (16) John-un chayk-ul ilk-ess-ko, Mary-nun sinmwun-ul
 John-TOP book-ACC read-PAST-and Mary-TOP newspaper-ACC
 ilk-ess-ta.
 read-PAST-IND
 'John read the book and Mary read the newspaper.'

- (17) John-un chayk-ul ilk-ko, Mary-nun sinmwun-ul
 John-TOP book-ACC read- \emptyset -and Mary-TOP newspaper-ACC
 ilk-ess-ta.
 read-PAST-IND
 'John read a book and Mary read a newspaper.'

If the present proposal for the status of the two types of *V+ko* constructions is on the right track, it follows that only the tensed *V+ko* construction as above in (16) is the input structure for the gapping construction above in (3), repeated below as (18).

- (18) John-un chayk-ul \emptyset , Mary-nun sinmwun-ul ilk-ess-ta.
 John-TOP book-ACC Mary-TOP newspaper-ACC read-PAST-IND
 'John read a book and Mary read a newspaper.'
 (\emptyset = *ilk-ess-ko* 'read-and')

If that is the case, one can conclude that gapping in Korean, which is a head final language, also conforms to the cross-linguistic generalization that it elides the

8) It should be noted that the status of the sentence with the un-tensed *V+ko* as a coordinate structure was independently challenged by several researchers. (see Yi, 1994; Kim, 1995; and Cho, 1995 among others)

tensed verb in a conjunct coordinated with another clause containing the same verb. As one can see, gapping in English above in (1) repeated below as (19), which is a head-initial language also deletes the tensed verb ‘bought’ in a conjunct coordinated with another clause containing the same verb.

(19) John bought a book and Mary \emptyset a newspaper. (\emptyset =bought)

Moreover, the following shows that the verbs should be identical in tense in gapping constructions in Korean as illustrated below in (20).

(20) *John-un chayk-ul \emptyset , Mary-nun sinmwun-ul ilk-ess-ta.
 John-TOP book-ACC Mary-TOP newspaper-ACC read-PAST-IND
 ‘John read a book and Mary read a newspaper.’
 (\emptyset = *ilk-ess-ess-ko* ‘had read’)

The sentence is ungrammatical under the construal where the tense of the verb in the first conjunct is past perfect whereas the verb in the other conjunct bears simple past tense. This state of affairs strongly suggests that there holds the requirement for the same tense of the two verbs in Korean gapping. Note that the requirement for the same tense of the verbs for gapping is not a language particular requirement but it holds across languages. English, a head initial language, for example also has the requirement for the same tense of the verbs as shown by the ungrammaticality of the sentence below in (21).

(21) *John took Ling 520 this semester and Mary \emptyset Ling 530 last semester.
 (\emptyset = had taken)

As one can see, the two verbs in the gapping construction in English above in (21) have different tense, thus leading to ungrammaticality.⁹⁾

9) The gap and the correlate can have different agreement features as illustrated below in (i), with \emptyset in (ia) corresponding to *ilku-si-ess-ko*, and \emptyset in (ib) *ilk-ess-ko*.

(i) a. Sensayng-nim-un chayk-ul \emptyset , John-un sinmwun-ul ilk-ess-ta.
 teacher-HON-TOP book-ACC John-TOP newspaper-ACC read-PAST-IND
 ‘The teacher read a book, and John read a newspaper.’

4. Gapping as Dependent Ellipsis

With the requirement for the same tense of the verbs in gapping construction in Korean as well, Korean gapping construction, as the present research shows, has a non-trivial implication of conforming to the well-observed cross-linguistic generalization: gapping elides the tensed verb in a conjunct coordinated with another clause containing the same verb. I will assume the strong projectionist view in the minimalist program of checking theory on the verbal morphology (Pollock 1989, and Chomsky 1995), according to which the verb is introduced into the numeration set fully inflected. This means the fully inflected verb checks its relevant features including \emptyset -features against T with the matching features in the computation. With this much as a background, consider the Korean *V+ko* coordination structure above in (18) repeated below as (22).

- (22) John-un chayk-ul \emptyset , Mary-nun sinmwun-ul ilk-ess-ta.
 John-TOP book-ACC Mary-TOP newspaper-ACC read-PAST-IND
 'John read a book and Mary read a newspaper.'
 (\emptyset = *ilk-ess-ko* 'read-and')

-
- b. John-un chayk-ul \emptyset , sensayng-nim-un sinmwun-ul ilku-si-ess-ta
 John-TOP book-ACC teacher-HON-TOP newspaper-ACC read-HON-PAST-IND
 'The teacher read a book, and John read a newspaper.'

Korean has honorific agreement according to which when the addressee is an honorable person, it is required to use an honorific morpheme *si* on the verb. As one can see above in (i) mismatch in agreement between the two verbs in the two conjuncts does not affect the grammaticality of the gapping construction, which in turn means agreement is not a factor in gapping. In fact, Kim and Cho (2012) also observe that agreement is not a factor in Korean gapping, either. Incidentally note that the same holds in other languages as well as illustrated with the English example below in (ii) where the gap and the correlate have different agreement features.

- (ii) John has eaten the bread and the kids \emptyset drunk the soda. (\emptyset =have)

Suppose one deletes the tensed verb along with T, given that gapping is deletion of the tensed verb, which, however, is an instance of a non-constituent deletion as schematically shown below in (23).

$$(23) \text{ [}_{\text{TP}} \text{ NP-TOP [}_{\text{T}} \text{ [}_{\text{VP}} \text{ NP-ACC V]—T} \text{] [}_{\text{TP}} \text{ NP-TOP [}_{\text{T}} \text{ [}_{\text{VP}} \text{ NP-ACC V} \text{] T] }$$

So, one way to get around the problem of a non-constituent deletion above in (23) is to propose that what is going on is actually T deletion, which in turn licenses subsequent deletion of the verb, hence dependent ellipsis, an idea as originally proposed by Williams, (1997), Ackema and Szendrői, (2002) and Hernández (2007), among others for the analysis of English gapping construction as above in (19), repeated below as (24).

$$(24) \text{ John bought a book and Mary } \emptyset \text{ a newspaper. (} \emptyset \text{ =bought)}$$

The initial deletion of T licenses additional deletion of the verb, thus voiding the problem of an apparent non-constituent deletion as shown below in (25).¹⁰⁾

$$(25) \text{ [}_{\text{TP}} \text{ NP-NOM [}_{\text{T}} \text{ [}_{\text{VP}} \text{ V NP-ACC} \text{]]} \text{ and [}_{\text{TP}} \text{ NP-NOM [}_{\text{T}} \text{ T—[}_{\text{VP}} \text{ V NP-ACC} \text{]]} \text{]}$$

As one can see thus far, the dependent ellipsis for gapping applies under the identity of tense in T in the coordinate construction. I will also crucially assume the dependent ellipsis for gapping is a syntactic operation to apply before PF following Hernández (2007), among others. One motivation for this assumption is that the gap and the correlate shows syntactic dependency as illustrated with Korean and English examples later in section 5. One may put the idea of dependent ellipsis in the

10) The following gapping construction in English with an auxiliary verb is a good illustration of gapping operation deleting the non-constituent of T and V.

(i) John will invite Chomsky and Mary \emptyset Jean-Roger Vergnaud (\emptyset = will invite)

Note that gapping above in (i) deletes the sequence of *will invite*, which is certainly a non-constituent.

minimalist perspective (Chomsky 1995, 2001, among others). With the initial deletion of T, the structure ends up with null T with no features against which the verb will check its \emptyset feature including tense. Hence as a last resort the verb should also delete to save the structure to crash.¹¹⁾

The present proposal for the analysis of the gapping construction in Korean is in a way in agreement with Ross (1970) for gapping across languages, according to whom it involves deleting the tensed verb. Ross (1970) observes that what is behind gapping across languages is deletion of the tensed verb with directionality of deletion the only difference as stated below in (26).

- (26) The order in which Gapping operated depends on the order of elements at the time that the rule applies; if the identical elements are on left branches, Gapping operates forward; if they are on right branches, it operates backward. (Ross 1970, pp. 251)

Before closing the section, one may then wonder what mechanism is responsible for the deletion of the verb in the un-tensed *V+ko* construction below in (27).

- (27) John-un chayk-ul \emptyset , Mary-nun sinmwun-ul ilk-ess-ta.
 John-TOP book-ACC Mary-TOP newspaper-ACC read-PAST-IND
 'John read a book and Mary read a newspaper.'
 (\emptyset = *ilk-ko* 'read-and')

The sentence above in (27) is certainly grammatical under the construal where the gapped verb is un-tensed, *ilk-ko* 'read-and.' This, as one may suggest, serves as a counterexample to the present proposal, which is that the tensed *V+ko* construction, but not the un-tensed *V+ko* construction constitutes a bona fide coordination structure and thus serves as the input structure for the gapping operation to apply.

11) What if one assumes incorporation by Baker (1988) according to which each morpheme of the verbal morphology projects its own syntactic category such that the past tense morpheme projects T. Deleting T along with the past tense morpheme leaving the verb stem behind will cause the stem to be stranded, a violation of the extended affix filter condition (see Lasnik 1995, Hernandez 2007). It is thus the case that under the incorporation theory on verbal morphology as well, gapping involves deletion of T and V.

For this, I suggest that the construction above in (27), which gives every bit the impression of a gapping construction with the un-tensed verb elided, is in fact VP ellipsis construction.¹²⁾ Note that VP ellipsis, quite unlike gapping that applies only to the coordination construction to delete the sequence of T and V, applies to the adjunct clause as well, as shown below in (28) in English, for example.

- (28) a. John will leave tomorrow because Mary will leave the day after.
(VP ellipsis)
b. *John will leave tomorrow because Mary ~~will~~ leave the day after.
(Gapping)
(Freidin, 2013, p. 237)

The sentence above in (28a) with VP ellipsis in the adjunct clause is perfect whereas the one in (28b) with gapping is ungrammatical. So, it turns out that the sentence above in (27), quite against the impression on the surface, does not constitute an argument against the present proposal that only tensed $V+ko$ counts as a coordination structure to feed gapping in Korean.

I thus far suggested Korean gapping also has the mechanism of dependent ellipsis much like English gapping. If that is the case, it is no surprise to find common properties of gapping between the two languages, which is indeed the case as will be shown in the section below.

5. Common Properties beyond Directionality of Gapping

Recall that gapping in head initial languages as in English involves forward gapping whereas gapping in head final languages as in Korean involves backward gapping. Beyond the surface difference in the directionality of gapping, Korean and English gapping constructions exhibit remarkably common properties, which in turn

12) VP ellipsis above in (27), as widely known as PF phenomenon (Chomsky 1995, Freidin 2012, among others) accompanies preposing of the object NP out of VP, which should apply before the deletion of the VP.

lend additional support to the present proposal that Korean gapping is also dependent ellipsis.

5.1 Locality between the Gap and the Correlate

One well documented property of gapping in English is that the gap must have its correlate within its local domain, that is, no embedding constraint as dubbed by Hankamer (1979), according to which the gap and the correlate cannot be apart from each other by a clausal boundary (also see Rooryck 1985).

- (29) Alfonse stole the emeralds, and I think that Mugsy \emptyset the pearls.
 (\emptyset = stole)
 (Hankamer, 1979, p. 19)

As one can see above in (29), the gap does not have its correlate within its local domain, since there is an intervening clausal boundary between the two. Interestingly enough, one finds the same is true when it comes to gapping in Korean as below in (30).

- (30) *John-un chayk-ul \emptyset Mary-nun [_{CP} John-i sinmwun-ul
 John-TOP book-ACC Mary-TOP John-NOM newspaper-ACC
 ilk-ess-ta-ko] sayngkakhanta.
 read-PAST-IND-COMP think
 'John read a book and Mary thinks John read a newspaper.'
 (\emptyset = *ilk-ess-ko* 'read-and')

The gap and the correlate, as one can notice, are apart from each other by a clausal boundary in (30), thus ungrammatical.

5.2. Uniqueness of the Correlate

Another property in gapping construction in English is that the correlate should be unique. For this, consider the following:

- (31) *John washed his shirt, Mary ironed her skirt and Bill \emptyset his trousers.
(\emptyset = washed and ironed)

The sentence above in (33) is ungrammatical, since the correlates are not unique, one is ‘washed’ and the other ‘ironed.’ The same requirement for uniqueness also holds for gapping in Korean as below in (32).¹³⁾

- (32) *John-un chayk-ul \emptyset , Mary-nun sinmwun-ul ilk-ess-ko
John-TOP book-ACC Mary-TOP newspaper-ACC read-PAST-and
Tom-un capci-lul sa-ss-ta.
Tom-TOP magazine-ACC bought-PAST-IND
*‘John bought a book, Mary read a newspaper, and Tom a magazine’
(\emptyset = *ilk-ess-ko* ‘read-and’ *sa-ss-ta* ‘bought’)

The sentence above in (32) is ungrammatical since one of the correlates is *ilk-ess-ko* ‘read-and’ and the other is *sa-ss-ta* ‘bought,’ violating uniqueness requirement for the correlates.

5.3. Plurality of Gap

Last, but not the least, is that the correlate can have more than one gap in gapping in English, which is also the case in Korean as well as shown respectively below in (33) and (34).

- (33) John visited London, Mary \emptyset Paris and Bill \emptyset New York
(\emptyset = visited)

13) An anonymous reviewer notes that his informants report (32) is grammatical and is construed as ‘John read a book, Mary read a newspaper and Tom bought a magazine.’ If so, it is quite puzzling to the present proposal, I should admit.

- (34) John-un chayk-ul Ø, Mary-nun sinmwun-ul Ø, Tom-un
 John-TOP book-ACC Mary-TOP newspaper-ACC Tom-TOP
 capci-lul ilk-ess-ta
 magazine-ACC read-PAST-IND
 'John read a book, Mary read a newspaper and Tom read a magazine.'
 (Ø = *ilk-ess-ko* 'read-and')

As one can see, Korean gapping construction above in (34), much like English gapping construction in (33) can have more than one gap. Note that it is of no surprise that Korean as a head final language, and English as a head initial language have in common those properties as listed above in this section, given that the same mechanism of dependent ellipsis is behind. Korean gapping is not right-node-raising as in Johnson (1994, 1996, 2000, 2006) nor is it TP deletion as in Abe and Hoshi (1995), and Kim (1997). Moreover, note that the relation between the gap and the correlate shown thus far in the two languages as summarized below in (35) is nothing other than syntactic dependency.

- (35) a. The dependent (gap) must have its correlate within its local domain.
 (Locality)
 b. Each dependent (gap) must take a unique antecedent (correlate).
 (Uniqueness)
 c. An antecedent (correlate) can have more than one dependent (gap).
 (Plurality)

The properties holding between the dependent and the antecedent as listed above in (35) all constitute instances of well established syntactic dependency (see Koster (1987), and Neeleman and van de Koot (2002), among others), which in turn strongly suggests that gapping is a syntactic phenomenon in Korean as well as English.

6. Conclusion and Implications

Korean has two *V+ko* constructions, which has been argued to constitute coordinate constructions: tensed *V+ko* construction and un-tensed *V+ko* construction. I claimed only the former constitutes a bona fide coordination structure to feed gapping, hence quite in agreement with the proposal as in (Kim 1995, 2000, Choi 2014). The present proposal has an important implication: Korean also conforms to the cross-linguistic generalization that gapping deletes the tensed verb in a conjunct coordinated with another conjunct with the same verb. Since gapping involves the syntactic operation of deleting the tensed verb in Korean, I proposed dependent ellipsis to resolve an apparent non-constituent deletion of the sequence of T and V, adopting the ideas as proposed by Williams (1997), Ackema and Szendrői (2002) and Hernández (2007), among others for English gapping. The striking common properties of gapping between Korean and English rather reflects a common mechanism of dependent ellipsis, with the difference in the directionality of gapping attributed to the head initial parameter vs. head final parameter of the universal grammar.

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