VP as an ellipsis site in Korean: Evidence for the derivational PF deletion theory

Overview. In this paper, I will provide novel data from Korean showing that VP, which has never been considered as an ellipsis site in Korean, is an ellipsis site. In addition, I will argue that VP ellipsis in Korean is PF deletion that occurs during the syntactic derivation. (I will call this *derivational PF deletion.*) Lastly, I will propose that derivational PF deletion removes PF components of elements inside the ellipsis site, but preserves formal features of them intact, and thus, the elements that lack PF components are visible for further formal operations.

Premises.

a. Verbal nouns are verbs. Park (2008) shows that, in Korean, verbal nouns which are immediately followed by the light verb (LV) '*-ha*' are verbs, rather than nouns. One of the arguments is that verbal nouns cannot be modified by adjectival phrases, but by adverbial phrases.

(1) Mary-nun [$_{CP}$ caki-ka khuta-ko] sayngkak-ha-ess-e.
Mary-TOP self-NOM tall-C think-LV-PAST-D(ECL) (lit.)'Mary thought that she is tall.'

Assuming Park (2008), the sentence (1) can be analyzed as follows: the verbal noun *sayngkak* is a verb, and the embedded CP is its complement. In order to distinguish verbs which have traditionally been referred to as verbal nouns from regular verbs, I will call the former *nominal verbs*.

b. Short form negation '*an*' is base-generated to the right of nominal verbs. As shown in (2), short form negation '*an*' can either precede or follow the nominal verb *sayngkak*.

(2) Mary-nun [$_{CP}$ caki-ka khuta-ko] ?an-sayngkak-ha-ess-e. / sayngkak-an-ha-ess-e.
Mary-TOP self-NOM tall-C NEG-think-LV-PAST-D think-NEG-LV-PAST-D
(lit.)'Mary did not think that she is tall.'

Suppose that short form negation '*an*' is base-generated to the left of nominal verbs. Taking into account the fact that Korean is a head-final language, there is no straightforward explanation for how '*an*' can follow s*ayngkak* in (2). However, if '*an*' is base-generated to the right of s*ayngkak*, the optional word order in (2) can be derived using a particular assumption that the nominal verb *sayngkak* undergoes optional rightward verb-movement. Then, exactly where is short form negation base-generated? Assuming that quantified objects take scope over short form negation through obligatory Object Shift (Han et al. 2007), and that shifted objects are located in [Spec,*v*P], we can conclude that 'an' is placed between *v*P and VP. In this paper, I assume that '*an*' is a head of NegP, which takes VP as complement.

c. LV '*-ha*' is base-generated in v^0. The sentences in (2) imply that the LV must be located higher than NegP. In addition, (3) shows that the LV is not located in T^0, but lower than T^0, since the LV and the tense morpheme can be separated in coordination constructions.

(3) Mary-nun [[John-ul teisang sayngkak-an-ha]-ko [Bill-ul teisang kuliwe-an-ha]]-ess-ta.
Mary-TOP John-ACC any more think-NEG-LV-and Bill-ACC any more miss-NEG-LV-PAST-D
(lit.)'Mary did not think of John any more, and she did not miss Bill any more.'

Then, the possible position of the LV is v^0. In this paper, I will assume that the LV is base-generated in v^0.

VP as an ellipsis site. The sentences in (4) illustrate that a constituent lower than short form negation can be elided, allowing both strict interpretation and sloppy interpretation. Given the premises above, the ellipsis site must be VP, composed of nominal verb and its complement CP.

(4) A: Tom-un [[$_{CP}$ caki-ka khuta-ko] sayngkak]$_1$-an-ha-ess-ta. B: Mina-to [e$_1$] an-ha-ess-ta.
Tom-TOP self-NOM tall-C think-NEG-LV-PAST-D Mina-also NEG-LV-PAST-D
'Tom did not think that he is tall.' (lit.)'Mina also did not.'

A notable property of ellipsis like (4B), where the sister of short form negation is elided, is that elements base-generated inside the ellipsis site cannot be pronounced outside the ellipsis site, as shown in (5).

(5) A: Bill-ul$_1$ Mary-nun [[$_{CP}$ Mina-ka t$_1$ ttayliessta-ko] sayankak]$_2$-an-ha-ess-e.
Bill-ACC Mary-TOP Mina-NOM hit-C think-NEG-LV-PAST-D
'Mary did not think that Mina hit Bill.'
B:* Tom-ul$_1$ John-un ~~[[$_{CP}$ Mina-ka t$_1$ ttayliessta-ko] sayankak]$_2$~~-an-ha-ess-e.
Tom-ACC John-TOP Mina-NOM hit-C think-NEG-LV-PAST-D
'John did not think that Mina hit Tom.'

I suggest that the ungrammaticality of (5B) can be explained by adopting Baltin's (2012) proposal on the timing of ellipsis. He proposes that deletion occurs *derivationally* – XP is deleted when it externally merges with a head H, and that internal merge of an element within XP in [Spec,HP] can occur at the same time as deletion of XP. According to this, if an element base-generated inside XP fails to move to [Spec,HP] when ellipsis of XP occurs (since H cannot attract any element to its specifier position), then the element cannot be pronounced outside the ellipsis site. Adopting this analysis, VP in (5B) deletes when it merges with short form negation. Since *Tom-ul* in (5B) cannot internally merge in [Spec,NegP] when VP ellipsis occurs (given that short form negation does not have an ability to attract any element to [Spec,NegP]), *Tom-ul* is deleted within VP, and thus, it cannot be pronounced outside the ellipsis site.

In line with Aelbrecht (2009), Baltin (2012) suggests further that once ellipsis of XP occurs during the derivation, everything within XP becomes frozen for further formal operations. However, I propose here that elements which lack PF components as a result of derivational PF ellipsis are visible for further formal syntactic operations. The argument supporting this proposal is in the next section.

Derivational PF deletion and further syntactic operations. In (6A), the accusative-marked ECM subject is located in the matrix clause through *raising* out of the embedded clause (Yoon 2007, Hong and Lasnik 2010). This is also supported by the fact that the universal quantifier ECM subject can scope over the matrix short form negation. If scope is read off syntactic structure, the ECM subject is located higher than the matrix short form negation. The wide scope of the universal quantifier is also available in (6B).

(6) A: Mary-nun motun tongmwul-ul$_1$ [[$_{CP}$ t_1 mwusepta-ko] sayngkak]$_2$-an-ha-ess-e.
Mary-TOP every animal-ACC scary-C think-NEG-LV-PAST-D
(lit.)'Mary did not think that every animal is scary.' ✓every > not

B: Minho-to [e_2] an-ha-ess-e.
Minho-also NEG-LV-PAST-D (lit.)'Minho also did not.' ✓every > not

In (6B), VP deletes when it merges with short form negation (Recall that VP ellipsis occurs derivationally, as I suggested in explaining the ungrammaticality of (5B), adopting Baltin's proposal on the timing of ellipsis). Then, the ECM subject is deleted within VP. This is because short form negation cannot attract the ECM subject to [Spec,NegP], and thus, the ECM subject is inside the ellipsis site, when VP deletes. If this is so, how is the wide scope of the universal quantifier possible? As a result of derivational PF deletion of VP composed of *syangkak* and its complement CP in (6B), ellipsis removes PF components of the elements inside VP, but preserves the formal features of them intact. Thus, even though the ECM subject lacks PF components, it is still eligible for further syntactic derivation. Due to this, the unpronounced ECM subject can raise to the position where the ECM subject in (6A) lands over short form negation.

Alternatives. Baltin (2012) and Aelbrecht (2009) suggest that elements which are deleted during the derivation cannot participate in further formal operations. This approach erroneously predicts that (6B) could not have the intended scope interpretation. Meanwhile, according to the LF copying theory (Chung et al. 1995), the LF of VP in (6A), containing the trace of the ECM subject, is copied into the ellipsis site, which is lower than matrix short form negation, in (6B). Then, this analysis does not have a clear explanation of how the ECM subject can be interpreted higher than matrix short form negation. One might seek to salvage this theory by assuming that the LF of the ECM subject in the matrix clause in (6A) is also copied, along with the LF copying of VP, but separately. However, it is undesirable if UG allows LF copying of two separate constituents. Some might claim that the LV '*-ha*' is a pro-form of VP which lacks internal structure, and thus, examples in the current discussion are not related to ellipsis. However, I reject this possibility, since this alternative also cannot explain without any idiosyncratic mechanism how the wide scope of the universal quantifier is available in (6B).

Selected References. **Aelbeecht, L**. 2009. You have the right to remain. Catholic University of Brussels Ph.D dissertation. **Baltin, M.** 2012. Deletion versus pro-forms: an overly simple dichotomy? *NLLT* 30. **Chung, S., W. Ladusaw, and J. McCloskey**. 1995. Sluicing and Logical Form. Natural Language Semantics 3. **Han, J-H., J. Lidz, J. Musolino.** 2007. V-raising and Grammar Competition in Korean. *LI* 38. **Hong, S., H. Lasnik.** 2010. A note on 'Raising to Object' in small clauses and full clauses. *JEAL* 19. **Koizumi, M.** 1993. Object agreement phrases and the split VP hypothesis. *MIT working papers in Linguistics* 18. **Lasnik, H.** 2001. When can you save a structure by destroying it? *NELS* 31. **Merchant, J.** 2001. *The syntax of silence*. Oxford. **Park,S-Y.** 2008. Functional Categories: The syntax of DP and DegP. University of Southern California dissertation. **Yoon, J.** 2007. Raising of major arguments in Korean and Japanese, *NLLT* 25.