

Licensing Conditions for VP Ellipsis: Multiple Sites Approach

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ABSTRACT

The Journal of Studies in Language 36.4, 553-563. This article aims to discuss the ellipsis of the verb phrase in English and come up with new general licensing conditions under the framework of Chomsky (2013). The licensing conditions put forth in this study will account for English VP ellipsis in terms of a new alternative syntactic structure. The new alternative syntactic structure replaces Chomsky (2001)'s double verb phrase *vP* with four basic syntactic elements, such as Link, Perfect Aspect, Progressive Aspect, and V-*v* amalgam. The four basic syntactic elements are syntactic positions that accommodate relevant verbal lexical items. The general licensing conditions for the ellipsis of the verb phrase are: (i) The VP ellipsis elides the minimum of the progressive aspect phrase and elides the maximum of the perfect aspect phrase; (ii) The elided verbs and the antecedent verbs should be in the same type of syntactic positions to satisfy the identity conditions between the elided verbs and the antecedent verbs. (Cyber Hankuk University of Foreign Studies)

Keywords: ellipsis of verb phrase, general licensing conditions for ellipsis of verb phrase, new alternative syntactic structure, the minimum of the progressive phrase, the maximum of the perfect phrase

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본인이 투고한 논문은 다른 학술지에 게재된 적이 없으며 타인의 논문을 표절하지 않았음을 서약합니다. 추후 중복게재 혹은 표절된 것으로 밝혀질 시에는 논문게재 취소와 일정 기간 논문 제출의 제한 조치를 받게 됨을 인지하고 있습니다.

1. Introduction

This study will address critical issues in English VP ellipsis and provide general licensing conditions that account for the ellipsis of the verb phrase. The basic research questions in this study are as follows:

- (1) a. What is the syntactic site of the ellipsis of VP?
- b. What is a workable model of syntactic structure that accounts for the ellipsis of VP?
- c. What are general licensing conditions for the ellipsis of VP?

In order to provide answers for these research questions, we will provide a new alternative model of syntactic structure. The new alternative model of syntactic structure replaces two heads of the double verb phrase *v* and *V* with four syntactic elements, such as Link, Perfect Aspect, Progressive Aspect, and V-*v* amalgam.

The answers for the three research questions will be provided in terms of the new alternative model of syntactic structure.

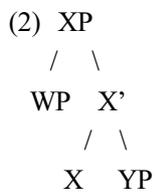
In section 2, we will discuss the phase-hood theory on syntactic sites of English VP ellipsis and point out its limitations and problems. In section 3, we will deal with an alternative model of syntactic structure. The alternative model of syntactic structure shows how Link, Perfect Aspect, Progressive Aspect, and V-*v* amalgam, which will replace two heads of the double verb phrase *v* and V, are postulated as essential syntactic elements in the verbal area of a sentence.

In section 4, current identity conditions between the elided verbs and the antecedent verbs in the VP ellipsis will be discussed. In section 5, alternative structure-based identity conditions between the elided verbs and the antecedent verbs in the VP ellipsis will be discussed.

In section 6, the general licensing conditions for the VP ellipsis will be provided for conclusions.

2. Syntactic Sites of VP Ellipsis

Identification of the sites of VP ellipsis has been one of the important issues in generative syntax. Since Chomsky (2000) initiated the phase theory, there seems to be a correlation between ellipsis and the complement of a phase. Consider the following structure:



Suppose that structure (2) is a phase. Since core functional categories Comp and light verb *v* are phase heads, XP can be headed by Comp or headed by *v*.¹⁾ YP, which is a complement of a phase head X, is its domain. WP, which is a specifier of the phase head X, is its edge. According to Chomsky (2000: 108)'s Phase Impenetrability Condition, the phase head X and its edge are accessible to operations outside the phase, whereas the domain YP, which is a complement of the phase head X, is not accessible to such operations.²⁾ The domain YP undergoes cyclic transfer to the phonological component.

Gengel (2007) argues that the ellipsis site is the complement of a phase. The idea that ellipsis targets the phasal complements is illustrated by VP ellipsis. Consider the following sentences.

- (3) a. John smiled a big smile, and Mary did [_{VP} [_{VP}]], too.
 b. Sue likes Tony, and Gina does, [_{VP} [_{VP}]], too.

1) Chomsky (2000) and Rizzi (1997) determine the phase by propositionality. This postulates CP as a phase. Borer (2005) determines the phase by argument structure. This postulates *v*P as a phase.

2) Phase Impenetrability Condition

In phase α with head H, the domain of H is not accessible to operations outside α ; only H and its edge are accessible to such operations.

- c. Tony fell down, and Bill did [_{VP} [_{VP}]], too.
- d. Brian arrived yesterday, and Maria did [_{VP} [_{VP}]], too.
- e. He was arrested, and she was [_{VP} [_{VP}]], too.

Sentences (3a) and (3b) are examples of VP ellipsis of transitive sentences. Sentences (3c), (3d), and (3e) are examples of VP ellipsis of an unpaired ergative sentence, an unaccusative sentence, and a passive sentence, respectively. In all these examples, the VP ellipsis elides VPs, which are complements of the phase head *v*. The idea that ellipsis targets the phasal complements is also illustrated by sluicing. Consider the following sentences.

- (4) a. She smiled a big smile, but he doesn't know why [_{TP}]].
- b. John called someone, but I don't know who [_{TP}]].
- c. Sue fell down, but we don't know how [_{TP}]].
- d. The window was broken, but the maid doesn't know when [_{TP}]].

Sentences (4a) and (4b) are examples of sluicing of transitive sentences. Sentences (4c) and (4d) are examples of sluicing of nontransitive sentences. In all these examples, the sluicing elides TPs, which are the complements of the phase head *Comp*.

Identification of the site of ellipsis with the complement of a phase seems to be on the right track if ellipsis is PHON-deletion. However, this approach faces a problem when dealing with multiple deletion constructions. Consider the following sentences of multiple deletion put forth by Sag (1976: 31).

- (5) a. *Besty must have been being hassled by the police, and Peter must.
- b. Besty must have been being hassled by the police, and Peter must have.
- c. Besty must have been being hassled by the police, and Peter must have been.
- d. *Besty must have been being hassled by the police, and Peter must have been being.

Sentences (5a) ~ (5d) are constructions of multiple deletion, which contain three additional aspectual verbs *have*, *been*, and *being* between Tense and *vP*. Bošković (2014: 25) postulates the following structures to account for these sentences.

- (6) [_{TP} must [_{VPf1} have [_{AspectP1} en [_{VPf2} be [_{AspectP2} ing [_{VPf3} be [_{VP} ...

The aspectual phrases *AspectP1* and *AspectP2* are headed by the heads *en* and *ing*. The auxiliary verbs *have* and *be* are heads of *VPfs*, which are functional in nature. The *be* in *VPf2* raises to the perfect aspect affix *en* in narrow syntax, whereas the *be* in *VPf3* stays in situ in narrow syntax since the affix hopping takes place at PF. The output of the syntactic head movement is represented as below:

- (7) [_{TP} Peter must [_{VPf1} have [_{AspectP1} be_i + en [_{VPf2} ti [_{AspectP2} ing [_{VPf3} be [_{VP} hassled by the police]]]]]]]

Bošković (2014: 24) assumes that Aspect belongs to the vP domain on the grounds that in many languages aspect is expressed through derivational verbal morphology or through free standing particles in the VP domain.³⁾ Then we have two extended lexical verbs. One is AspectP1 and the other is AspectP2. Suppose that the highest AspectP is the phase. Then we can account for why (5c), where the complement of the phase is deleted, is acceptable, and why (5d), where the complement of the phase is not entirely deleted, is not acceptable. We can also account for why (5a), where the VPf1 that contains the entire phase is deleted, is not acceptable. However, we cannot account for why (5b), where the entire phase is deleted, is acceptable.

Suppose that the lowest AspectP is the phase. Then we can account for why (5a), where the functional VP that contains the highest AspectP that contains the entire phase is deleted, is not grammatical. However, we cannot account for why (5b), where the highest AspectP that contains the entire phase is deleted, is grammatical. We also cannot account for why (5c), where the entire phase is deleted, is grammatical. On top of that, we cannot account for why (5d), where the complement of the phase is rightfully deleted, is not grammatical.

Therefore, regardless of whether the highest AspectP is the phase or the lowest AspectP is the phase, the phasehood-based approach does not provide a complete solution to the site of VP ellipsis. These provide us with empirical reasons to approach the site of VP ellipsis with an alternative method.

3. An Alternative Model of Syntactic Structure

This section deals with syntactic structures of English in generative grammar and provides an alternative syntactic structure that accounts for the site of the VP ellipsis.

Since Chomsky (1995), generative grammar has adopted the double verb phrase structure on the basis of Baker (1988)'s uniform theta role assignment hypothesis and Larson (1988)'s asymmetric c-command requirement between binder and bindee. Consider the following syntactic structure.

(8) $[_{CP} \text{Comp} [_{TP} \text{Tense} [_{NegP} \text{Neg} [_{vP} v [_{VP} V]]]]]]$

The main verb V provides theta positions for internal arguments, such as complement position and specifier position. The light verb v provides the theta position for the external argument like the specifier position. Syntactic structure (8) separates tense from verbs and postulates the tense and the verbs as independent syntactic elements on the grounds that the tense morpheme affixed to the verbs can be separated as independent words. Consider the following sentences.

- (9) a. Harry missed her.
 b. Harry does not like her.
 c. Harry did love her.
 d. He has finished the work.
 e. He is hesitating.

3) English particles like *give it up* are one such example.

In (9a), the tense morpheme is affixed to the main verb. In the negative sentence, however, the amalgam can be split into an independent tense word and a main verb, as in (9b). The separation of tense and verb is not limited to the negative sentences. Tense and main verbs are separate in the emphatic sentence (9c), in the perfect aspect sentence (9d), and in the progressive aspect sentence (9e). The separation of tense and verb is reflected in syntactic structure (8).

The affix morphemes separable from the main verbs are not limited to the tense morpheme. Consider the following sentences.

- (10) a. Sue exercises in the evening.
 b. She does not exercise in the morning.
 c. Mary was scolding her.
 d. She was being scolded by Mary.
 e. Tony has finished the work.
 f. The work has been finished by Tony.
 g. They have been bothering the dog for a long time.
 h. The dog has been being bothered by them for a long time.

Sentences (10a) and (10b) show that the tense morphemes are separable from the main verbs as independent words. In sentence (10c), the progressive aspect morpheme is affixed to the main verb. The progressive aspect morpheme affixed to the main verb can be also separated from the main verb, as in (10d). In sentence (10e), the perfect aspect morpheme is affixed to the main verb. The perfect aspect affixed to the main verb can be also separated from the main verb, as in (10f). Sentences (10c~f) provide us with empirical evidence to postulate Perf Aspect, and Prog Aspect as independent syntactic elements. In (10g), *been* is an independent perfect aspect word separated from the main verb *bothering*. The progressive aspect morpheme *-ing* can be separated from the main verb as an independent word following the perfect aspect word, as in (10h). The separability of perfect aspect and progressive aspect from the main verb is reflected in syntactic structure (11).

- (11) [_{CP} Comp [_{TP} Subj Tense [_{NegP} Neg [_{PerfP} Perf Asp [_{ProgP} Prog Asp [_{vP} v [_{VP} V]]]]]]]]]]

In some sentences there should be a link between Neg and Perf Aspect. Consider the following sentences.

- (12) a. He is working on the project.
 b. She is not working on the project.
 c. She will not be working on the project.
 d. The project will not be being worked on by her.
 e. He has come back.
 f. She has not returned yet.
 g. She will not have returned by tomorrow.
 h. She will not have finished the project by the end of this week.

- i. The project will not have been finished by the end of this week.
- j. He will not be working on the project.
- k. The project will not be being worked on by him.

Sentence (12a) shows that tense and the progressive main verb are separate. Sentence (12b) shows that neg comes between the tense and the progressive main verb. When a present progressive sentence like (12b) is changed to a future progressive sentence like (12c), there is an extra verb *be* intervening between the neg and the progressive main verb. The extra verb *be* is a liaison mediating between the tense verb *will* and the progressive main verb *working*. Sentence (12d) shows that the link verb comes between the neg *not* and the progressive aspect functional word *being*.

Sentence (12e) shows that tense and perfect main verb are separate. Sentence (12f) shows that neg comes between the tense and the perfect main verb. When a present perfect sentence like (12f) is changed to a future perfect sentence like (12g) or (12h), there is an extra verb *have* intervening between the neg and the perfect main verb. The extra verb *have* is a liaison mediating between the tense verb *will* and the perfect main verb *returned* or *finished*. Sentence (12i) shows that the link verb comes between the neg and the perfect aspect functional word. Since the perfect aspect word precedes the progressive aspect word, as shown in (10h), postulation of a link as an independent syntactic element revises syntactic structure (11) into syntactic structure (13).

(13) [_{CP} Comp [_{TP} Subj Tense [_{NegP} Neg [_{LinkP} Link [_{PerfP} Perf Asp [_{ProgP} Prog Asp [_{VP} v [_{VP} V]]]]]]]]]]

Syntactic structure (13) provides five syntactic positions for the verbal elements. They are Tense, Link, Perf Asp, and Prog Asp, and V.⁴⁾ Let us see how syntactic structure (13) accounts for the ellipsis of the verb phrase that phasehood-based approach could not handle. Let us bring up sentences (5a), (5b), (5c), and (5d), repeated here as (14a), (14b), (14c), and (14d).

- (14) a. *Besty must have been being hassled by the police, and Peter must.
 b. Besty must have been being hassled by the police, and Peter must have.
 c. Besty must have been being hassled by the police, and Peter must have been.
 d. *Besty must have been being hassled by the police, and Peter must have been being.

In sentence (14a), the first conjunct has five verbal elements *must*, *have*, *been*, *being*, and *hassled*. In terms of syntactic structure (13), the five verbal elements are Tense, Link, Perf Asp, Prog Asp, and V-v amalgam. This is also true of sentences (14b), (14c), and (14d). In the second conjunct of (14a), the LinkP was elided, and the sentence is not acceptable. This shows that the site of VP ellipsis should be lower than the LinkP. In sentence (14b), the VP ellipsis elided the Perfect Aspect Phrase, and the sentence is acceptable. In sentence (14c), the VP ellipsis elided the Progressive Aspect Phrase, and the sentence is also acceptable. This shows that the VP ellipsis can target either the Perfect Aspect Phrase or the Progressive Aspect Phrase. In sentence (14d) the V-v amalgam was elided in the second conjunct, and the sentence is not acceptable. This shows that the site of VP ellipsis should be higher than the V-v amalgam.⁵⁾ All these

4) In the double verb phrase structure, V raises to v automatically. V-v amalgam hosts verbal element.

provide us with empirical grounds to come up with the legitimate site of the VP ellipsis, as shown in (15).

(15) The site of VP ellipsis

The VP ellipsis elides the minimum of the Progressive Aspect Phrase and elides the maximum of the Perfect Aspect Phrase.

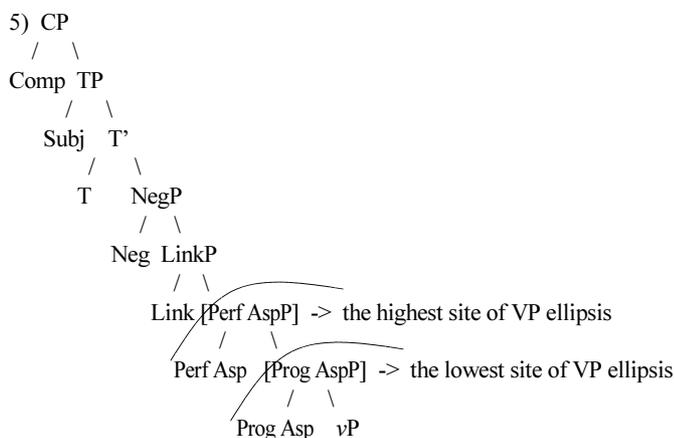
4. Current Identity Conditions for VP Ellipsis

In the previous section, we discussed the syntactic site of VP ellipsis in terms of the domain of the phase. It turned out that the phase-based approach was problematic in that the site of the VP ellipsis does not necessarily match the domain of the phase. We also proposed an alternative syntactic structure that postulates Link, Perfect Aspect, and Progressive Aspect between Tense and *v*. The alternative syntactic structure is able to pinpoint the site of the VP ellipsis, which is the minimum of the Progressive Aspect Phrase, and the maximum of the Perfect Aspect Phrase. In this section we will discuss general licensing conditions of the VP ellipsis, in particular the identity conditions between the elided verbs and the antecedent verbs.

It is well-known that main verbs ignore certain inflectional differences between antecedent verbs and elided verbs and allow sloppy identity whereas auxiliary verbs observe rigid identity between them. We will examine how this asymmetry between main verbs and auxiliary verbs can be accounted for in terms of syntactic structure (13). Consider the following sentences.

- (16) a. John smiled a big smile, and Mary will smile a big smile, too.
 b. John smiled a big smile, and Mary will, too.

In (16a~b), the past tense main verb *smiled* and a cognate object *a big smile* serve the antecedent for the deletion of the bare infinitive main verb *smile* and the cognate object *a big smile*. This is a kind of VP ellipsis under sloppy identity.



The alternative structure provides two sites for the VP ellipsis. The first one is the minimum of the progressive aspect phrase. The second is the maximum of the perfect aspect phrase.

This sloppy identity, however, does not work for the auxiliary verbs *have* and *be*. Consider the following sentences.

- (17) a. John will be here, and Mary will be here, too.
 b. John will be here, and Mary will, too.
 c. John was here, and Mary will be here, too.
 d. *John was here and Mary will, too.

In (17a~b), the bare infinitive auxiliary verb *be* and locative phrase *here* serve as antecedent for the deletion of the bare infinitive auxiliary verb *be* and locative phrase *here*. This is the VP ellipsis under rigid identity, and sentence (17b) is acceptable. In (17c~d), the past tense auxiliary verb *was* serves as antecedent for the deletion of the bare infinitive auxiliary verb *be*. This is the VP ellipsis under sloppy identity, and sentence (17d) is not acceptable. The sloppy identity that works for the main verb *smile* does not work for the auxiliary verb *be*. The same is true of the auxiliary verb *have*. Consider the following sentences.

- (18) a. Sue should have studied law, but Mary shouldn't have studied law.
 b. Sue should have studied law, but Mary shouldn't.
 c. Sue has studied law, but Mary shouldn't have studied law.
 d. *Sue has studied linguistics, but Mary shouldn't.

In (18a~b), the bare infinitive auxiliary verb *have* followed by the perfect aspect main verb phrase *studied law* serve as antecedent for the deletion of the bare infinitive auxiliary verb *have* followed by the perfect aspect main verb phrase *studied law*. This is the VP ellipsis under rigid identity, and sentence (18b) is acceptable. In (18c~d), the present tense auxiliary verb *has* followed by the perfect aspect main verb phrase *studied law* serve as antecedent for the deletion of the bare infinitive auxiliary verb *have* followed by the perfect aspect main verb phrase *studied law*. The deletion of the bare infinitive auxiliary verb *have* took place under sloppy identity, and sentence (18d) is not acceptable.

The sloppy identity that works for the main verb does not work for auxiliary verbs *be* and *have*. Lasnik (1999) accounts for this asymmetry between main verbs and auxiliary verbs in terms of the hybrid approach. Under the hybrid approach, the auxiliary verbs are taken from the lexicon fully inflected and enter the syntactic component as completely inflected words. In contrast, the main verbs enter the syntactic component as bare infinitive verbs. We will review the ellipsis of the main verbs and auxiliary verbs in terms of the hybrid approach. Consider the following sentences.

- (19) a. *John was here and Mary will ~~be here~~, too.
 b. John was here, and Mary will be here, too.
 c. *Sue has studied linguistics, but Mary shouldn't ~~have-en-study law~~.
 d. Sue has en study law, but Mary shouldn't ~~have-en-study law~~.
 e. Sue has en study law, but Mary shouldn't have en study law.
 f. John smiled a big smile, and Mary will ~~smile a big smile~~, too.
 g. John Tense smile a big smile, and Mary will smile a big smile, too.

In (19a), the VP ellipsis took place under the sloppy identity, and the sentence is not acceptable. The ellipsis of the auxiliary verb *was* requires the rigid identity.

In (19c), the VP ellipsis took place under the sloppy identity for the auxiliary verb *have*, and took place under the rigid identity for the main verb *study*. Since the auxiliary verbs enter the syntactic component fully inflected, and the main verbs enter the syntactic component in bare infinitive form, the initial stage of the sentence is like (19e). The VP ellipsis in the second conjunct changes (19e) into (19d). Unlike the ellipsis of the main verb *en study*, the ellipsis of the auxiliary verb *have* took place under the sloppy identity. Hence the final sentence (19c) derived by the affix hopping in the first conjunct is not acceptable.

In (19f), which is derived from (19g) through the VP ellipsis in the second conjunct and the affix hopping in the first conjunct, the VP ellipsis took place under the rigid identity. Hence the sentence is acceptable. Under Lasnik (1999)'s hybrid approach we can provide a uniform account that the VP ellipsis takes place under the rigid identity for the main verbs and the auxiliary verbs.

5. Alternative Identity Conditions for VP Ellipsis

In the previous section, we discussed the identity conditions of the elided verbs and the antecedent verbs. The traditional approach was problematic in that the VP ellipsis uses different identity conditions for the main verbs and the auxiliary verbs. Lasnik (1999)'s hybrid approach uses the uniform rigid identity conditions for the main verbs and the auxiliary verbs. However, the hybrid approach cannot be a complete solution to the VP ellipsis in that it depends on dual inflection systems for the main verbs and the auxiliary verbs. In this section we will review the ellipsis of the main verbs and the auxiliary verbs in terms of the alternative syntactic structure (13), repeated here as (20).

(20) [_{CP} Comp [_{TP} Subj Tense [_{NegP} Neg [_{LinkP} Link [_{PerfP} Perf Asp [_{ProgP} Prog Asp [_{vP} v [_{VP} V]]]]]]]]]

We will look into the ellipsis of the auxiliary verbs and the main verbs in (19), repeated here as (21).

- (21) a. *John was here and Mary will ~~be here~~, too.
 b. John was here, and Mary will be here, too.
 c. *Sue has studied linguistics, but Mary shouldn't ~~have studied law~~.
 d. Sue has studied law, but Mary shouldn't have studied law.
 e. John smiled a big smile, and Mary will ~~smile a big smile~~, too.
 g. John smiled a big smile, and Mary will smile a big smile, too.

In (21a~b) the VP ellipsis took place under the sloppy identity. In (21c~d) the identity conditions of the VP ellipsis are sloppy conditions for the auxiliary verb and rigid conditions for the main verb. In (21e~g) the VP ellipsis took place under the rigid identity. In (21a) the elided verb *be* is in the V-v amalgam of (20) and the antecedent verb *was* is in the Tense position of (20). The elided verb and the antecedent verb are in different syntactic positions of (20), and the sentence is not acceptable.

In (21c) the elided main verb *studied* and the antecedent main verb *studied* are in the position of the V-*v* amalgam of (20). However, the elided auxiliary verb *have* is in the Link position of (20) and the antecedent verb *has* is in the Tense position of (20); and the sentence is not acceptable. In (21e) the elided main verb *smile* and the antecedent main verb *smiled* are both in the position of the V-*v* amalgam of (20); and the sentence is acceptable. The unacceptability of (21a) and (21c) and the acceptability of (21e) suggest that the elided verbs and the antecedent verbs should be in the same syntactic position. This provides us with empirical reasons to convert inflectional form-based identity conditions between the elided verbs and the antecedent verbs to the structure-based identity conditions between the elided verbs and the antecedent verbs. This transition is specified in (22).

(22) Identity conditions for the VP ellipsis

The elided verbs and the antecedent verbs should be in the same type of syntactic positions to satisfy the identity conditions.

6. Conclusions

So far we have discussed the VP ellipsis with regard to the legitimate sites of the ellipsis and the identity conditions between the elided verbs and the antecedent verbs. The phase-based approach to the sites of the VP ellipsis turned out to be incomplete solutions in that it cannot account for the legitimate VP ellipsis that does not target the domain of the phase.

The evaluation of the identity of the elided verbs and the antecedent verbs in terms of the inflectional form of the verbs was a problematic approach in that it cannot account for the asymmetry between the main verbs and the auxiliary verbs in their identity requirements. The hybrid approach was able to solve this asymmetry. However, the hybrid approach was also not a complete solution in that it uses a dual system of inflection for the main verbs and the auxiliary verbs. All these provide us with empirical reasons to come up with new general licensing conditions for the VP ellipsis in terms of the new alternative syntactic structure.

(23) General Licensing Conditions for VP Ellipsis

- (i) The VP ellipsis elides the minimum of the Progressive Aspect Phrase and elides the maximum of the Perfect Aspect Phrase.
- (ii) The elided verbs and the antecedent verbs should be in the same type of syntactic positions to satisfy the identity conditions.

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