

## Mismatches in Ellipsis: Category Mismatch Asymmetry in English VP–ellipsis\*

Sun–Woong Kim  
(Kwangwoon University)

**Kim, Sun–Woong. 2020. Mismatches in ellipsis: Category mismatch asymmetry in English VP–ellipsis.** *Korean Journal of English Language and Linguistics* 20, 475–495. This paper is purposed to explain the asymmetry of category mismatch in English VP–ellipsis and to argue that the simple set–theoretic comparison of inclusion (or containment) between the antecedent phrase and the elided phrase is neither sufficient nor necessary. The reason is explored for why the antecedent noun triggers VP–ellipsis in the subsequent clause, while the antecedent verb rarely triggers NP–ellipsis in the subsequent clause (Sato 2018). This paper looks for a syntactic answer to the question in the dynamicity of phase theory (Bošković 2014, den Dikken 2006, 2007, 2017). For a proper morphological derivation, the notation ([CAPITAL]) is adopted to denote the lexeme/root status of a lexical category. On top of it, to take care of the idea that only nouns of concealed polar interrogation can trigger VP–ellipsis (Miller and Hemforth 2014), PolP is located above VP in the second conjunct to carry polar properties (Culicover 1992, Laka 1990). If polarity is not involved, PolP is not needed because Pol is for a (concealed) *yes/no* question. Under the dynamic definition of phases, a phase and the complement of its head, but not the complement of a complement, are eligible for ellipsis (Bošković 2014). VP in the second clause can be elided if the clause has PolP because the VP counts as the complement of a phase PolP. In contrast, VP in the second clause cannot be elided without PolP, since it is not a complement but the complement of a complement of a phase. This explains why VP–ellipsis is not possible when the non–polar concealed questions of nominals are an antecedent. Regarding the opposite direction, differently from Sato’s analysis, this paper assumes that *one* is *n*, which is the head of *nP*. Above RP, NP, *nP* and DP are capped in a row to host lexical items. Here DP is a phase and NP is the complement of a complement, hence it is not elidable according to Bošković (2014). It will also be shown that the proposed analysis has a desirable consequence in that the syntactic behavior of other types of mismatch in ellipsis like voice mismatch, polarity mismatch, and type mismatch can be predicted.

**Keywords:** mismatch, category, VP–ellipsis, phase, dynamic phasehood

---

\* This paper has been greatly benefited by the discussion in the meetings of Dongguk Roundtable on Linguistics during 2018–20. An earlier version was presented in the Spring Joint Conference of Linguistics held in Chonbuk National University, May 16, 2020. The author appreciates their interest and comment on earlier versions of this paper. Three *Korean Journal of English Language and Linguistics* reviewers thankfully provided valuable comments for improvement as well. This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF–2019S1A5A2A01036282).

This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

## 1. Introduction

This paper primarily aims to explain the asymmetry of category mismatch in English VP–ellipsis and to argue that the simple set–theoretic inclusion (or containment (Sato 2018)) comparison between the antecedent phrase and the elided phrase is neither sufficient nor necessary to deal with mismatch in ellipsis.<sup>1</sup> To begin with, the reason is explored for why the antecedent noun can trigger VP–ellipsis in the subsequent clause, while the antecedent verb rarely triggers NP–ellipsis in the subsequent clause (Sato 2018). Representative examples are given below:

- (1) a. We should suggest to her that she officially appoint us as a committee and invite faculty *participation*. They won't <<sub>VP</sub> participate>, of course.  
 b. Mubarak's *survival* is impossible to predict and, even if he does <<sub>VP</sub> survive>, his plan to make his son his heir apparent is now in serious jeopardy. (Miller and Hemforth 2014)  
 c. The media treated him like a *convict* before the judge actually did <<sub>VP</sub> convict>. (Sato 2018)
- (2) a. ??(You must) *graduate* before we end up treating you like one <<sub>NP</sub> graduate>. (Sato 2018)  
 b. ??Because the police have much evidence to *convict*, they escorted one <<sub>NP</sub> convict> to London.

Why is N to VP–ellipsis more frequent than V to NP–ellipsis? In (1) the noun *participation*, *survival*, and *convict* trigger VP–ellipsis in the subsequent clause, but in (2) the verb *graduate* and *convict* do not trigger NP–ellipsis. If category mismatch can be allowed in VP–ellipsis as in (1), where does this difference with (2) come from? This paper looks for a syntactic answer to the question in the dynamicity of phase theory (Bošković 2012, 2014, den Dikken 2007, 2017). Section 2 provides more of relevant data about category mismatch in ellipsis and discusses previous analyses. Section 3 introduces the notion of dynamic phases toward a syntactic solution to the issue and the consequences of the proposal. Section 4 draws a conclusion.

---

<sup>1</sup> This paper does not discuss the argument mismatch between inchoative and causative, for example. In this regard, “category mismatch” in this paper narrowly refers to part–of–speech mismatch between noun and verb or vice versa.

## 2. Mismatch in Ellipsis

### 2.1. Mismatches

How big a mismatch can be tolerated in ellipsis between the antecedent phrase and the elided phrase? One possible set of consideration would include morphological mismatch, voice mismatch, polarity mismatch, and type mismatch (Craenenbroeck and Merchant 2013). Morphological mismatch is attested in the following examples:

- (3) a. Jack [fell down] and Jill did <fall down> too.  
 b. I didn't [touch the TV set], but Percy might have <touched the TV set>.  
 c. If you haven't [told them] yet, you really should <tell them>.  
 d. Are you [arguing]? Yes, they always do <argue>.

Warner (1985) observes that at least main verbs do not require an exact morphological mismatch when elided. In (3a) for example, the elided “fall down” does not exactly match with its antecedent VP “fell down”.<sup>2</sup>

Voice mismatch can be found in the following:

- (4) a. This problem was to have been looked into, but obviously, nobody did <look into this problem>.  
 b. Roses should have been brought by somebody, but surprisingly, nobody did <bring roses>.

---

<sup>2</sup> Thoms and Walkden (2019) reports the following examples with respect to VP–fronting:

- (i) a. We thought she would lose her temper, and [lose her temper] she has.  
 b. She has {\*lose/lost} her temper.  
 (ii) a. Everyone said that Susan lost her temper, and [lost her temper] she did.  
 b. She did {lose/\*lost} her temper.

(ia) is grammatical, although the fronted VP of the second conjunct has no past participial form which is required in the non-elliptical clause. In contrast, (ib) the fronted VP has a past form for which the bare or infinitive form is required in the non-elliptical clause. (ia) and (ib) can be assumed to have the following lower copies.

- (iii) ... [lose her temper] she has <lost her temper>.  
 (iv) ... [lost her temper] she did <lose her temper>.

These phenomena are called affix bleeding and tense doubling respectively by Thoms and Walkden (2019).

(4a) has the passive antecedent phrase but the active elided phrase. Voice mismatch is known to be not always allowed (Kehler 2002, Tanaka 2011).

- (5) a. \*This problem was looked into by John, and (similarly) Bob did <look into this problem>, too.  
b. \*Roses were brought by someone, and others did <bring roses>.

Although the passive antecedent phrase–active elided phrase mismatch is the same, (4) and (5) show different grammaticality. Regarding this contrast, Kehler (2002) argues that VP–ellipsis has something to do with discourse–pragmatic factors like cause–effect and resemblance to name a few. To be concrete, he says that cause–effect allows voice mismatch as in (4) but resemblance does not as in (5).<sup>3</sup>

Polarity mismatch can be confirmed by the following examples:

- (6) John didn't see anyone, but Mary did < >.  
a. ... but Mary did see someone.  
b. \*... but Mary did see anyone.

The second conjunct must be (6b) rather than (6a), but the problem is that (6b) is illicit with respect to polarity. *Anyone*, which is an NPI, is used in the affirmative context. A reverse situation is attested in the following examples:

- (7) John saw someone, but Mary didn't < >.  
a. \* ... but Mary didn't see someone.  
b. ... but Mary didn't see anyone.

The second conjunct is understood as (7b) but not as (7a), which is a clear *someone–anyone* mismatch. A similar polarity mismatch can be found in determiners like *no* and *a*.

---

<sup>3</sup> In contrast, pseudogapping, which can be considered as a kind of VP–ellipsis, does not allow voice mismatch.

(i) a. \*Roses were brought by some, and others did lilies <bring t>.  
b. \*Some brought roses, and lilies were by others <brought t>

- (8) I could find no solution, but Holly might < >.
- a. \* ... but Holly might find no solution.
  - b. ... but Holly might find a solution.

The recovered meaning of (8) must be (8b) rather than (8a). The problem here again is that (8b) contains a morphological mismatch with respect to determiner use. (8a) does not carry the desired meaning.

Lastly, type mismatch is found in the following examples:

- (9) a. They arrested Alex<sub>i</sub>, even though he<sub>i</sub> thought they wouldn't < >.
- b. \*They arrested Alex<sub>i</sub>, even though he<sub>i</sub> thought they wouldn't arrest Alex<sub>i</sub>.

The recovered meaning of (9a) would be (9b). In (9b), *Alex* in the embedded clause is bound by *he* in the matrix, which would result in violation of Condition C. If this is the source sentence (9a) would be derived from an illicit sentence. To avoid this problem, Fiengo and May (1994) proposed a solution in terms of the famous vehicle change by which a proper noun type–shifts to a pronoun. By vehicle change (9b) will be able to escape the danger of violating conditions on binding.<sup>4</sup>

The remainder of this paper will be primarily focused on category mismatch for which a simpler syntactic solution will be provided. Other mismatches, which have been previously studied, thoroughly or sketchily in the literature, will be mentioned where necessary.

## 2.2. N to VP–ellipsis: A Category Mismatch

As introduced above nouns can be a trigger to VP–ellipsis in the subsequent clause. Below are additional examples from Hardt (1993):

---

<sup>4</sup> Theoretically plausible it may be, the real question will be what the vehicle change genuinely is. Answering this question asks for consideration of many otherwise unnecessary considerations of various factors. The pursuit for the answer, not only of type mismatch but also of other mismatches above, attracts a simple solution.

- (10) a. People say that Harry is an excessive *drinker* at social gatherings. Which is strange, because he never does <<sub>VP</sub> drink> at my parties.  
 b. Today there is little or no official *harassment* of lesbians and gays by the national government, although autonomous government might <<sub>VP</sub> harass lesbians and gays>.

More examples are abundant (Miller and Hemforth 2014):

- (11) a. The integrity of the Senate depends on his *participation*. If he does, ... (= depends on whether or not he will participate)  
 b. Since they don't have anyone to replace him with, his *resignation* is in doubt. If he does, ... (= whether or not he will resign is in doubt)  
 c. The release of this information on the user's part depends on his *consent*. If he does, ... (= depends on whether or not he consents)

This kind of category mismatch in N to VP–ellipsis, however, is not always possible. Look at the following (Miller and Hemforth 2004):

- (12) a. Mubarak's answer was impossible to predict. #We wonder why he did <<sub>VP</sub> ... >.  
 b. Peter's participation surprised us and #John did <<sub>VP</sub> ... > too.

As is marked #, the above examples are not felicitous: the nominal *answer* and *participation* in the first clause does not trigger VP–ellipsis in the second clause, in contrast to (10–11). The question is why they are distinct. According to Miller and Hemforth (2014), the distinction is related to the polarity of the nominals. Compare (11) with (13):

- (13) a. That depends on his *answer*. #If he does, ... (= depends on what he answers, ≠ depends on whether or not he answers)  
 b. When Francis leaves her, his *decision* is unclear. #If he does, ... (= what he decided is unclear, ≠ whether or not he decided is unclear)

The nominals in (11) is taken as a *yes/no* choice. In (11a), the nominal is understood as “whether or not he will participate.” In contrast, the examples in (13) are

understood not about choice but about particular information. In (13a) the nominal *answer* is comprehended as “what he answers,” but not as “whether or not he answers.” The nominals in (11) involve the notion of polarity between *yes* and *no*, while those in (13) does not. According to Baker (1968), the nominals in (13) are analyzed as a concealed question. A proper generalization would be that when the antecedent nominal is interpreted as a *yes/no* question, the VP in the second clause can be elided but not if it is understood as a question for information.

Consider a more interesting set of examples. Even the same nominals do not always seem to permit VP–ellipsis.

- (14) a. During the recent crisis, the government’s *survival* was surprising to many observers. #It is unclear just how they did.  
 b. The fact of his *resignation* is not in dispute. #The question is why he did.  
 b'. Since they don’t have anyone to replace him with, his *resignation* is in doubt. If he does, ... (=whether or not he will resign is in doubt)

The nominal *survival* in (14a) does not allow VP–ellipsis in the second clause if it is understood as asking for a specific information. The same fact can be found in the nominal *resignation* in (14b). Since the nominal in the first clause is not taken as a concealed question about *yes/no* choice but as something to do with the information (manner or reason), VP–ellipsis makes the strings illicit. This contrasts with (14b'), which is allowed since it is understood as a polar question.

The remainder of this paper provides an attempt to explain the syntax of category mismatch in ellipsis with a specific focus on N to VP and V to NP ellipsis. The answer will be looked for in the spirit of previous approaches in terms of the size of elided part. But one crucial difference from them is that the present proposal considers a more fundamental linguistic principle about derivational notion of phases.

### 3. Proposed Analysis

#### 3.1. Dynamic Phases

To explain the observed acceptability variation of category mismatch in ellipsis, this paper looks for an answer from the phase theory. From a minimalist perspective that

grammatical operations abide by locality, one of the most important roles has been played by phases. For instance, derivations proceed by the phase; Spell–out is done by the phase; and phases are not penetrable from outside probes, etc. These originate from Chomsky’s original notion of phases (Chomsky 1995, 2001, 2008). However, his notion has been argued to be too rigid. den Dikken (2006, 2007, 2017), most notably, suggests that the basic ingredient of phases is not propositionality as is suggested by Chomsky, but must be the notion of predication. In addition, he proposes that phases can be extended by raising the head of a phase up to a higher functional head. Independently from den Dikken (2006, 2007), Bošković (2012, 2014) argues that every maximal projection can be a phase. Among these potential phases, the highest projection in the extended domain of a lexical category becomes a real phase. He dubs his notion of dynamic phases as the–highest–phrase–as–a–phase hypothesis. The present study adopts their non–rigid determination of phases as being on a right track. To be concrete, this paper proposes that the following holds true by disjunctively combining the two proposals of den Dikken and Bošković.

(15) Disjunctive Phase Extension

Phasehood is yielded to a neighboring FP if

- a. the head X of a phase moves up to F, or
- b. FP is the highest phrase in the extended domain of X.

By “yield”, this paper means that a former phase ceases to be a phase if its phasehood is given to a neighboring projection by either option of (15). An FP, if it turns out to be a phase, it can be counted in important syntactic operations like movement and ellipsis.

To further strengthen the theory of phases, this paper of course adopts the Phase Impenetrability Condition below (Chomsky 1995).

(16) Phase Impenetrability Condition (PIC)

Movement is constrained in such a way that in phase  $\alpha$  with head H, the domain is not accessible to operations outside  $\alpha$ , only H and its edge are accessible to such operations.



To illustrate the role of phase extension in movement, consider (17) below:

(17) [<sub>FP</sub> ... X<sub>i</sub>+F ... [<sub>XP</sub> ... t<sub>i</sub> ...

Assume that XP is a phase. Phasehood of XP can be yielded to a neighboring functional projection FP if X moves up to F by head movement. Then FP becomes an extended phase, and XP is no longer a phase by yielding its phasehood. What is important here is that if FP is a phase, then XP counts as the complement the head X+F. According to PIC, XP is impenetrable from outside and consequently is kept from moving out of FP unless the movement is through the edge, which is the specifier position of XP. Ellipsis is also constrained by phase. Consider the following examples (Bošković 2012):

- (18) a. They arrested someone, but I don't know [<sub>CP</sub> who C <<sub>TP</sub> >].  
 b. You like Jane's book, and I like [<sub>DP</sub> Peter's D <<sub>NP</sub> >].

TP deletion (sluicing) within CP is responsible for the derivation of (18a), and (18b) is an output of NP deletion within DP. What is important here is that the deleted phrases are the complement of a phase head: C to TP in (18a) and D to NP in (18b). If a phrase is not a phase nor the complement of its head, the phrase is not eligible for ellipsis. Ellipsis shows an apparent difference to movement with respect to PIC. The complement of a phase head cannot move over its phase boundary if not through its edge, while the complement of a phase head can be elided under identity with the antecedent.<sup>5</sup> This difference between movement and ellipsis can be captured in the spirit that the complement of a phase head is special: it cannot be moved, and it can be elided if conditions are met for each. This point makes a parallel situation if we consider the complement of the complement of a phase head. It is well discussed in Bošković (2012) and supported by later works such as Wurmbrand (2017).<sup>6</sup> Let us set this up as a condition on ellipsis as below a la Bošković (2012).

---

<sup>5</sup> One might argue that a complement can move out of a phase by first moving to the specifier position of the same head. This complement to spec movement, however, is banned by the well-motivated condition against anti-locality.

(i) Anti-locality Condition on Movement

Movement must not be too local so that there is no such movement from complement to its spec (Grohmann 2003, Abels 2003).

<sup>6</sup> According to them, the complement of the complement of a phase head is not elided but can freely move to the edge of a phase without violating anti-locality.

## (19) Condition on Elidability

A phase and the complement of its head are eligible for ellipsis by the licensor from outside, but the complement of the complement is not.

To recapitulate, as for movement a phase is accessible to movement by a probe from outside, but the complement of its head is not. The complement of the complement, however, can freely move if it drops by the edge of a phase. As for ellipsis, a phase and the complement of its head are eligible for ellipsis by the licensor from outside, but the complement of the complement is not. With this much preparation, let us get back to the category mismatch in ellipsis.

## 3.2. N to VP–ellipsis

This paper proposes that the category mismatch in English VP–ellipsis can be handled under the dynamic phase–based assumptions. For a proper morphological derivation, the lexeme/root notation ([CAPITAL]) is adopted to denote the lexeme/root status of a lexical category. [CAPITAL] refers to a category neutral lexeme/root which will be realized as a surface category at a relevant point of derivation. Look at (20) again:

- (20) a. Mubarak’s *survival* is impossible to predict and, even if he does <<sub>VP</sub> survive>, his plan to make his son his heir apparent is now in serious jeopardy. (Miller and Hemforth 2014) (=1b)
- b. During the recent crisis, the government’s *survival* was surprising to many observers. #It is unclear just how they did <<sub>VP</sub> survive>. (=14a)

The lexeme/root [SURVIVE] will be realized either as *survive* for a verb or as *survival* for a noun. To take care of the idea that only nouns with concealed polar interrogation can trigger VP–ellipsis (Miller and Hemforth 2014), PolP is located above VP in the second clause to carry polar properties.<sup>7</sup> If polarity is not involved, PolP is not needed because Pol is for a (concealed) *yes/no* question. Under the dynamic definition of phases, VP in the second clause can be elided if the clause has PolP because the VP counts as the complement of PolP, a phase. In contrast, VP in

<sup>7</sup> We have precedents of Pol head:  $\Sigma$  head by Laka (1990) or Pol head by Culicover (1992).

the second clause cannot be elided without PolP, since it is not the complement but the complement of a complement of a phase head. In other words, if CP is a phase, TP is its complement and VP is the complement of T. This explains why VP–ellipsis is not allowed when the non–polar concealed questions in the form of nominals are an antecedent. The assumption that ellipsis is conducted under syntactic non–distinctness if recoverability guarantees the identity between [SURVIVE] and *survive*.<sup>8</sup> The relevant part of the representation of (20a and 20b) would be the following:

- (21) a. ... and [<sub>CP</sub> [<sub>TP</sub> [<sub>PolP</sub> [<sub>VP</sub> ...  
 b. ... and [<sub>CP</sub> [<sub>TP</sub> [<sub>VP</sub> ...

PolP is a phase in that it carries polar properties of the embedded CP and Pol head has dependency with the lower V head. In (21a) VP is the complement of PolP and therefore is eligible for ellipsis. In (21b) on the other hand, VP is the complement of the complement of CP, and therefore is not eligible for ellipsis as desired. More examples with –er nominals can be added.

- (22) a. David Begelman is a great *laugher*, and when he does, his eyes crinkle at you the way Lady Bretts did in *The Sun Also Rises*. (Hardt 1993: 34)  
 b. Harry used to be a great *speaker*, but he can't anymore, because he has lost his voice. (Hardt 1993: 34)

The agent nominal with –er suffix can antecede the elided VP in the second clause. The same explanation holds again for (23), the rough representation of the relevant part would be (24):

- (23) a. Newshour is a great program. I am an occasional listener, and when I do, I'm never disappointed.  
 b. Jack is a frequent drinker and every time he does, he manages to get into some sort of trouble.  
 (24) ... and [<sub>CP</sub> [<sub>TP</sub> [<sub>PolP</sub> [<sub>VP</sub> ...

---

<sup>8</sup> This is understandable in that a pivotal syntactic requirement of ellipsis is understood as a set–theoretic inclusion relation (Aelbrecht and Harwood 2015). If the part of an antecedent clause includes that of the elided clause but not the other way round. Because [SURVIVE] properly includes the verb *survive*, VP–ellipsis can be done without problems.

In (24), VP is the complement of PolP and therefore is eligible for ellipsis.<sup>9</sup> This can be understood as additional conforming examples to the polarity–based explanation.

### 3.3. V to NP ellipsis

Regarding the opposite direction, the relevant examples are reproduced below in (25) (Park and Choi 2019, Sato 2018):

- (25) a. ??(You must) [<sub>V</sub> graduate] before we end up treating like one <<sub>NP</sub> >.  
 a'. Allow us to treat you like a [<sub>N(P)</sub> graduate] before you do <<sub>VP</sub> >.  
 b. He applied to [<sub>V</sub> patent] his five inventions but was only awarded three <<sub>NP</sub> patents>.<sup>10</sup>

As for (25a), differently from Sato’s analysis, this paper assumes that *one* is *n* which is the head of *nP*. This is to avoid the problem of regarding the pronoun *one* as a number head. Consider (26) for clarification.

- (26) a. I saw Janet’s picture of her cat and Jack saw Julie’s.  
 b. I saw Janet’s beautiful picture of her cat and Jack saw Julie’s ugly one.

(27) is the postulated structure of DP for (26).

- (27) [<sub>DP</sub> Julie’s [<sub>nP</sub> ugly [<sub>nP</sub> [<sub>NP</sub> [<sub>RP</sub> [PICTURE]]]]]]

R is a lexeme/root category as has been proposed by Chomsky (2013, 2015). Above RP, NP, *nP* and DP are capped in a row to host lexical items. In (27), DP is a phase either because it is the highest phrase in the extended projection of R or because it

<sup>9</sup> Infelicity of (i) below seems to have much to do with addition of a frequency adjective, which improves grammaticality. Compare (23) with the following:

- (i) a. #Newshour is a great program. I am a listener, and when I do, I’m never disappointed.  
 b. #Jack is a drinker and every time he does he manages to get into some sort of trouble.

This probably has to do with the role of QUD in ellipsis (Miller and Hemforth 2014: 24). This complication does not seem to be a problem of syntax but a matter of pragmatic consideration. Miller and Hemforth (2014) alludes that in (23b) for example, the assertion that Jack is a drinker “makes it marginally possible to get the proposition ‘Jack drinks regularly’ into QUD by accommodation and thus to make the alternative over occasions of drinking salient.”

<sup>10</sup> In fact this involves number mismatch as well. This will not be discussed in this paper.

forms a predication unit. *Ugly* is a modifier which is adjoined to *nP*. The spec–DP is occupied by a possessive. Under this structural architecture, (26a) is grammatical in that (the higher) *nP* is elidable since it is the complement of a phase head D. *Julie’s* is a possible remnant as the complement NP is elidable. In (26b) *Julie’s ugly one*, *one* is the substitute for *<picture of her cat>*, which does not bring about any problem. (26b) has something to do, not with ellipsis but with *one*–substitution. The thing is that the *one* for substitution must be differentiated from the numeral *one*, which is not carefully considered in Sato (2018). *One* has dual faces. To be specific, *one* can be understood either as *n* head or as the substitute of the whole *nP*. In *this one*, *one* is a substitute pronoun of *nP* not a numeral. In *these two*, *two* is definitely a numeral adjoined to *nP*. The *one* in (26b) is understood as a substitutive pronoun.

Turning to (25c), look at the structure.

(28) ... [PATENT] ..., ... [<sub>DP</sub> [<sub>nP</sub> three <<sub>NP</sub> patents [<sub>RP</sub> t<sub>[PATENT]</sub>]]>]]

Here *nP* is a phase (in the same way as VP can be a phase) and NP is its complement, hence it is elidable (Bošković 2012). Crucial difference with (27) is that DP in (28) does not count as a phase because it does not constitute a predication unit in that *three* is a numeral modifier. *Three* is a modifier which cannot not the subject of *patents*.<sup>11</sup>

### 3.4. Consequences

In the word–based approach to category mismatch in VP–ellipsis (Sato 2018), the most important factor to be considered is a set–theoretic inclusion relation, that is, a size matter.<sup>12</sup> Sato’s (2018) solution in terms of “containment” is of course consideration of the size between antecedent and elided structures. The prediction is that if the antecedent is bigger than the elided portion, no problem arises for ellipsis.

<sup>11</sup> Nominalizing suffixes like *-er* or zero suffix (*-∅*) are assumed the head N of NP.

<sup>12</sup> What about other category mismatches? Take, for example, adjective–induced ellipsis cases. Look at (i) below:

(i) a. \*Some were interesting, but others failed to <<sub>VP</sub> interest (me)>.

b. \*He always wants to be happy but was always far from any <<sub>NP</sub> happiness>.

Since (ia) and (ib) are all ungrammatical, let us put aside these examples for further research. More factors than category mismatch and size difference must probably be taken into consideration.

If the antecedent is smaller than the elided portion, it will bring about problems. This is due to recoverability issues. If the elided phrase has information that is not found in the antecedent, how can that information be recovered? But the real question is whether the size is the only thing to be considered for the recovery of elided information. Here are some counterexamples that run afoul of the simple premise that size matters. Let us three such examples. First, look at (29):

- (29) a. \**Moby Dick* was being discussed and *War and Peace* was being \_ too  
 b. *Moby Dick* was discussed, and *War and Peace* was \_ too

(29b) is understandable but why is (29a) bad? The antecedent and the elided part are structurally the same. (29a) is not explained by a set–theoretic consideration alone since the antecedent phrase is the same as the elided phrase. Second, there is some speaker variation.

- (30) a. \*/√John is being examined but Jack really should <be examined> also.  
 b. \*/√He might be attending AA sessions, I know his mother has <been attending AA session>.

“When the head of the preceding clause is a non–finite auxiliary, VP–ellipsis is inconsistently allowed in the target clause” (Potsdam 1997). Third, on top of them, more seriously, the following examples are attested where the elided phrase is bigger than the antecedent but the whole string is good.

- (31) a. Why don’t you sit quietly? I am <sitting quietly>.  
 b. “I must see you alone,” she said. “You are <seeing me alone>,” his uncle said.  
 c. John said that he would never take money on the side, but I knew he was <taking money on the side>.

In (31), the elided phrase is definitely bigger than the simple VP of the antecedent. The size consideration is intuitively correct, but if we fail to find a more deeply rooted explanation for the distinction, the intuition cannot be supported. For these reasons, this paper has attempted to find a solution from phases, which are an indispensable chunk for language computation. As for (31), the representation of the relevant point of derivation of each would be roughly something like below:

- (32) a. ... [TP [ProgP be-ing [VP sit ...  
 b. ... [TP [ProgP be-ing [VP see ...  
 c. ... [TP [ProgP be-ing [VP take ...

In (32a) the elided part is the complement of ProgP which is a phase according to Harwood (2015). So, it does not bring about problems if VP is elided. The same explanation holds for (32b) and (32c).<sup>13</sup>

Let us discuss how the proposal of this paper can take care of the examples that would be a problem to the approach that only considers the size of ellipsis. Look at (29b = 33), the rough representation of which is given in (34):

- (33) \*Moby Dick was ..., ... being <PerfP discussed \_\_> too.  
 (34) ... [TP T [ProgP be-ing <PerfP be-en [VP discuss ...

Under the dynamic definition of phases, TP is a phase because it is the highest phrase in the extended domain of the lexical category V, *discuss*. Let us assume that “when the head of the antecedent phrase is a non-finite auxiliary” (Potsdam 1997), TP (or ProgP) is phase. If TP is a phase then ProgP is its complement, and PerfP becomes the complement of the complement. The complement of a complement is by definition not eligible for ellipsis, which explains (33). (34) satisfies the size condition because the elided part, PerfP in (34) is smaller than the antecedent phrase but violates a more important elidability condition on phases. As for the badness of (30) a more refined scrutiny of clausal architecture is needed. The relevant part under consideration would be something like the following:

- (35) a. ... [TP [ModP should [VoiceP be-en [VP examine ...  
 b. ... [TP [PerfP have-en [ProgP be-ing [VP attend ...

In (35a), due to the presence of ModP, VoiceP counts as the complement of a complement (ModP) so that VoiceP is not eligible for ellipsis. The same explanation holds for (35b). Due to the presence of PerfP, ProgP becomes the complement of a complement (PerfP) so that ProgP is not eligible for ellipsis, which is required by Bošković (2012).<sup>14,15</sup>

<sup>13</sup> It looks like Boskovic’s (2012) condition on elidability overrides the size condition. This is understandable in that (15) (on condition on elidability) is a derivational constraint based on phases which are a pivotal notion of derivational process. In contrast, size is a matter of PF side.

#### 4. Explaining Other Mismatches: Polarity Mismatch

Polarity mismatch can be explained on the track of dynamic phases. Consider the example below.

- (36) John didn't see anyone, but Mary did < >.
- a. ... but Mary did see someone.
  - b. \*... but Mary did see anyone.

The second conjunct must be (36b) rather than (36a), but the problem is that (36b) is illicit with respect to polarity. Anyone, which is an NPI, is used in an affirmative context. The reverse situation is attested in the following example:

- (37) John saw someone, but Mary didn't < >.
- a. \*... but Mary didn't see someone.
  - b. ... but Mary didn't see anyone.

Although the solution is still under further development, if we take the timing of ellipsis into a careful consideration, the solution is not implausible. The relevant part of the representation under consideration would be something like (38):

- (38) John T [<sub>VP</sub> see [SOMEONE]] but Mary didn't <<sub>VP</sub> see [SOMEONE]>.

---

<sup>14</sup> This is different from (32) where ProgP is assumed to be a phase. A scrutiny reveals that (35) is in a different structural context from (32). The former has an additional XP (ModP and PefP, respectively) between TP and ProgP, while TP takes ProgP as its complement in the latter. This structural makeup brings about the difference. Due to the structural dependency between Mood and Perf head with the Prog head in (35a and b), phasehood is extended up to TP.

<sup>15</sup> This paper crucially assumes a PF Merger approach to morphological build-up. This practically argues for lowering of the affix to its neighboring host on the right side. For example, T lowers to its host, regardless of whether its host is an auxiliary or a main verb.

(i) The PF Merger Approach

- a. In line with a recent development of lowering movement of Affix Hopping as sort of PF head movement (Bošković 2003).
- b. Assuming T is affixal by nature, it must find a host lest it should be stranded. T is assumed to be affixal due to its agreement feature (Agr-feature).
- c. In line with Roberts and Roussou (2001), Roussou (2002), Alexiadou and Anagnostopoulou (1998), the Agr-feature of T must be lexically realized.



As for (38), a solution comes from postulating a lexeme/root category for polarity items. The assumption is that PolP is located between TP and VP. PolP carries [+/-negative] feature to decide the whole proposition is interpreted as positive or negative. If plus value is selected, [SOMEONE] actually is realized as *someone*, and if negative value is selected, [SOMEONE] is realized as *anyone*. If ellipsis is conducted before morphological spell-out, the solution is understandable. [SOMEONE] in the antecedent phrase induces the deletion of [SOMEONE] in the elided phrase. After that, [SOMEONE] in the antecedent phrase is realized as *someone*. Since the elided phrase has *not*, Pol is [+negative], which explains its incompatibility with *someone* in (37a). In the same way, (36) can be explained, the relevant point of representation of which would be (39):

(39) John didn't [see [SOMEONE]], but Mary did <see [SOMEONE]>.

Before deletion, [SOMEONE] in the elided phrase would be positively valued since the clause contains [-negative] feature. So, (37a) is good while (37b) is not. More about type mismatch and type mismatch in ellipsis are left for further research, the possible track to pursue would be the same taken in this paper in terms of phases though.<sup>16-17</sup>

<sup>16</sup> A similar polarity mismatch can be found in determiners like *no* and *a*.

(i) I could find no solution, but Holly might < >.

a. ≠ ... but Holly might find no solution.

b. ... but Holly might find a solution.

The recovered meaning of (i) must be (ib) rather than (ia). The problem here is that (ib) contains a morphological mismatch with respect to determiner use. (ia) does not carry the desired meaning of (ib). Exactly the same explanation could hold for polarity mismatch examples between *no* and *a* in (i).

(ii) ... [[ $\emptyset$ definite]] solution ... [[ $\emptyset$ definite]] solution

Deletion occurs before spell-out on the second conjunct under identity with the first conjunct. The second solution would have been realized as a solution since the clause is polarity-wise [-negative].

<sup>17</sup> Type mismatch is found in the following examples:

(i) a. They arrested Alex<sub>i</sub>, even though he<sub>i</sub> thought they wouldn't < >.

b. \*They arrested Alex<sub>i</sub>, even though he<sub>i</sub> thought they wouldn't arrest Alex<sub>i</sub>.

I have no particular solution to the type mismatch in ellipsis yet; but, the hunch is that the solution comes from the interaction of timing of ellipsis and "vehicle change" under the dynamic phasehood. Another solution would be to postulate that an iota-operator is reflected as a syntactic structural addition. This structural change exerts an influence on ellipsis under dynamic phase hypothesis. Details aside, this paper leaves the solution for future research. The question is still open, not wide though.

## 5. Conclusion

This paper provides a dynamic phase–based analysis to the asymmetry of category mismatch that is found in English VP–ellipsis and N(P)–ellipsis and argued that the simple set–theoretic inclusion (or containment) comparison between the antecedent phrase and the elided phrase is neither sufficient nor necessary to deal with mismatch in ellipsis. The reason is also explored for why the antecedent noun triggers VP–ellipsis in the subsequent clause, while the antecedent verb rarely triggers NP–ellipsis in the subsequent clause. In Sato’s (2018) analysis, the most important factor to be considered is a set–theoretic inclusion relation. Sato’s (2018) solution in terms of “containment” is of course a consideration of size between antecedent and elided structures. If the antecedent is bigger than the elided portion, no problem arises for ellipsis. If the antecedent is smaller than the elided portion, it would bring about problems. The only matter to consider is the size. The real question, however, is whether the size is the only thing to be considered for the recovery of elided information. This paper proposes that category mismatch in VP–ellipsis can be handled under the non–rigid phase–based assumptions. For a proper morphological derivation, the lexeme/root notation ([CAPITAL]) is adopted to denote the lexeme/root status of a lexical category. With this structural addition, different makeups of clausal architecture provide a way to solve a variety of category mismatch in English VP–ellipsis and N(P)–ellipsis.

## References

- Abels, Klaus. 2003. Phase, cyclicity, and stranding. Handout given at the EPP Workshop, MIT, Cambridge, Mass.
- Aelbrecht, Lobke and William Harwood. 2015. To be or not to be elided: VP–ellipsis revisited. *Lingua* 153, 66–97.
- Alexiadou, Artemis and Elena Anagnostopoulou. 1998. Parametrizing AGR: Word order, verb–movement and EPP checking. *Natural Language and Linguistic Theory* 16, 491–539.
- Baker, Carl L. 1968. *Indirect Questions in English*. Doctoral dissertation, University of Illinois, Urbana.

- Bošković, Željko. 2003. On PF merger: Stylistic fronting and object shift in Scandinavian. *Gengo Kenkyu* 123, 5–45.
- Bošković, Željko. 2012. On NPs and clauses. Ms., University of Connecticut, Storrs.
- Bošković, Željko. 2014. Now I'm a phase, now I'm not a phase: On the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45, 27–89.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, Mass: MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. In M. Kenstowicz, ed., *Ken Hale: A life in language*, 1–52. Cambridge, Mass.: MIT Press.
- Chomsky, Noam. 2008. On phases. In Robert Freidin, Carlos P. Otero and Maria Luisa Zubizarreta, ed., *Foundational Issues in Linguistic Theory: Essays in Honor of Jean Roger Vergnaud*, 133–166. MIT Press: Cambridge, Mass.
- Chomsky, Noam. 2013. Problems of projection. *Lingua* 130, 33–49.
- Chomsky, Noam. 2015. Problems of projection: Extensions. In Elisa Di Omenico, Cornelia Hamann and Simona Matteini, eds., *Structures, Strategies and Beyond: Studies in Honor of Adriana Belletti*, 3–16. Amsterdam/Philadelphia: John Benjamins.
- Craenenbroeck, Jereon van, and Jason Merchant. 2013. Ellipsis Phenomena. In Marcel den Dikken, ed., *The Cambridge Handbook of Generative Syntax*, 701–745. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511804571.025>.
- Culicover, Peter W. 1992. Polarity, inversion and focus in English. In *Proceedings of the Eastern States Conference on Linguistics*, 46–68. The Ohio State University.
- den Dikken, M. 2006. *Relators and Linkers: The Syntax of Predication, Predicate Inversion, and Copulas*. Cambridge, Mass.: MIT Press.
- den Dikken, Marcel. 2007. Phase extension: Contours of a theory of the role of head movement in phrasal extraction. *Theoretical Linguistics* 33, 1–41.
- den Dikken, Marcel. 2017. Predication in the syntax of hyperraising and copy raising. *Acta Linguistica Academica* 64(1), 3–43.
- Fiengo, Robert and Robert May. 1994. *Indices and Identity*. Cambridge, Mass: MIT Press
- Grohmann, Kleanthes K. 2003. *Prolific Domains: On the Anti–locality of Movement Dependencies*. Amsterdam: John Benjamins.
- Hardt, Daniel. 1993. *Verb Phrase Ellipsis: Form, Meaning and Processing*. Doctoral dissertation, University of Pennsylvania.
- Harwood, William. 2015. Being progressive is just a phase: Celebrating the uniqueness

- of progressive aspect under a phase-based analysis. *Natural Language and Linguistic Theory* 33, 523–573.
- Kehler, A. 2002. *Coherence, Reference, and the Theory of Grammar*. Stanford: CSLI Publications.
- Kertz, L. 2012. Verb phrase ellipsis: The view from information structure. *Language*, 89, 390–428.
- Laka, Itziar. 1990. *Negation in Syntax: On the Nature of Functional Categories and Projections*. Doctoral dissertation, MIT.
- Merchant, Jason. 2008. Variable island repair under ellipsis. In Kyle Johnson, ed., *Topics in ellipsis*, 132–153. Cambridge University Press: Cambridge.
- Miller, Philip and Barbara Hemforth. 2014. Verb phrase ellipsis with nominal antecedents. Ms., University of Paris Diderot.
- Park, Myung-Kwan and Sunju Choi. 2019. Not voice but case match matters in VP-ellipsis and pseudogapping of English. *Korean Journal of Linguistics* 40(2), 169–189.
- Potsdam, Eric. 1997. English verbal morphology and VP-ellipsis. *NELS* 27, 353–368.
- Roberts, Ian and Anna Roussou. 2001. The extended projection principle as a condition on the Tense-dependency. Ms., University of Stuttgart.
- Roussou, Anna. 2002. C, T, and the subject: *That*-t phenomena revisited. *Lingua* 112, 13–52.
- Sailor, Craig. 2014. *The Variables of VP-ellipsis*. Unpublished doctoral dissertation, UCLA.
- Sato, Yusuke. 2018. Category mismatch under VP-ellipsis: Implications for the morphosyntax and directionality of conversion. Ms., Seisen University.
- Tanaka, H. 2011. Voice mismatch and syntactic identity. *Linguistic Inquiry* 42, 470–490.
- Thoms, Gary and George Walkden. 2019. VP-fronting with and without remnant movement. *Journal of Linguistics* 55, 161–214.
- Warner, Anthony. 1985. *The Structure of English Auxiliaries: A Phrase Structure Grammar*. Bloomington, Ind.: Indiana University Press.
- Wurmbrand, Susi. 2017. Stripping and topless complements. *Linguistic Inquiry* 48(2), 341–366.

Examples in: English  
Applicable Languages: English  
Applicable Level: Tertiary

Sun-Woong Kim, Professor  
Kwangwoon University  
Department of English  
20 Kwangwoon-ro, Nowon-gu  
Seoul, Korea  
E-mail: swkim@kw.ac.kr

Received: June 02, 2020  
Revised: August 23, 2020  
Accepted: September 23, 2020