

Auxiliary Verbs and VP Ellipsis in English*

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Park, Myung–Kwan and Sunjoo Choi. 2019. Auxiliary verbs and VP ellipsis in English. *Korean Journal of English Language and Linguistics* 19–4, 613–628. This paper investigates the interaction of auxiliary verbs with VP ellipsis. Park (2017) initially notes that what he calls Copular Phrase Ellipsis (CoPE), a VP ellipsis containing the copula 'be' is allowed when T–to–C movement applies in the matrix clause with object wh–extraction, but it is not in the embedded clause with object wh–extraction but without T–to–C movement. After examining more relevant data, we find that Park's analysis cannot successfully account for them. Taking the empirical generalization of the issue here to be that a modal auxiliary verb in T needs to be followed by another auxiliary verb in the periphery of VP ellipsis, we attribute this restriction to Albrecht's (2010) distinction between ellipsis licenser and ellipsis trigger. If available, the additional auxiliary verb as an ellipsis trigger following the modal in T as an ellipsis licenser is recruited to locally permit the elision of VP. But when T–to–C raising applies, the syntactic relation that triggers it (the relation between T and the moving wh–object at the edge of VP ellipsis) can in turn directly allow the elision of VP.

Keywords: VP ellipsis, copula verb, head movement, T–to–C raising, ellipsis licenser/trigger

1. Introduction

This paper investigates the outstanding contrast concerning VP ellipsis in English, initially noted by Park (2017):

- (1) *I don't know what Bill shouldn't be proud of, but I have a good idea about what he SHOULD.

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(2) ?What shouldn't Bill be proud of, and what SHOULD he?

Both examples involve an elision of VP containing the copula verb 'be'. In (1), where it does not in the embedded clause, the corresponding VP ellipsis is allowed. In (1), however, where subject-auxiliary inversion occurs in the matrix clause, such a VP ellipsis is not allowed.

This paper tries to account for this asymmetry between matrix and embedded clauses in VP ellipsis. We first review Park's (2017) analysis for it. Going on to show that the contrast at issue is part of the larger topic on the auxiliary verb system of English and its relation with VP ellipsis, we seek a more comprehensive analysis of how VP ellipsis interacts with auxiliary verbs in its periphery.

2. T-to-C Movement and VP Ellipsis

Park (2017) investigates how elliptical sentences are generated. The gist of his proposal on ellipsis is that XP ellipsis applies as soon as the licensor of XP ellipsis satisfies all its featural requirements during the derivation. To show how this works, he first notes that the phrase headed by a copula undergoes VP ellipsis, as in (3).

(3) Copular phrase ellipsis (CoPE):

- a. John should [be fond of this book] and Tom should (be), too.
- b. Mary might [be proud of her teacher], but Jennifer might not (be).

He goes on to adopt the well-known thesis that T-to-C movement is motivated by the uninterpretable inflectional feature [uC] on T. It is grounded on the idea that a moving head contains the uninterpretable inflectional feature that forces it to move to a higher head bearing a corresponding interpretable categorial feature. This dictates that the [uC]-bearing T raises to the C that has the corresponding categorial feature. Based on T-to-C movement, he accounts for the following puzzling behaviors of extraction from English CoPE.

(4) Extraction puzzles:

- a. CoPE in embedded clauses does not allow object wh-phrase extraction out of it, while CoPE in matrix clauses does, as in (5) and (6) below.

- b. While embedded CoPE does not allow object wh–phrase extraction out of it as in (5), embedded regular VPE as well as matrix regular VPE allows object wh–phrase extraction out of it as in (7).

Simply put, the puzzling property of CoPE as VP ellipsis is the following matrix–embedded clause asymmetry: the object wh–extraction out of the ellipsis site is allowed when the matrix VP is elided, but it is not when the embedded VP is elided. The following examples make a point.

- (5) a. *I don't know what Bill shouldn't be proud of, but I have a good idea about what he should ~~*[be proud of t]~~.
 b. *I know what John might be proud of, but I don't know what Bill might ~~[be proud of t]~~.
 c. *Although Mary wonders what Tom will be fond of, she doesn't wonder what Jina will ~~[be proud of t]~~.
 d. *Although John doesn't wonder what Mary will be fond of, Bill does wonder what she won't ~~[be proud of t]~~.
- (6) a. ?What shouldn't Bill be proud of, and what should he ~~[be proud of]~~?
 b. ?What will Tom be fond of, and what will Mary ~~[be proud of]~~?
 c. ?Who might John be proud of, and who mightn't he ~~[be proud of]~~?
 d. ?Who might Tom be fond of, and who might Mina ~~[be proud of]~~?¹

Regular VP ellipsis without involving a copular verb allows object wh–phrase extraction out of it, regardless of whether ellipsis occurs in the matrix clause or the embedded clause.

- (7) a. Who will Bill kiss and who will John ~~[kiss t]~~?
 b. I don't know who John won't criticize, but I have a good idea about who he will ~~[criticize t]~~.

In order to resolve the extraction puzzles at hand, he proposes the following constraint on the timing of ellipsis and the ellipsis licensing condition, respectively.

¹Park (2017) reports that the examples in (6), in contrast to those in (7), are subject to speaker variation. That is why the former examples are marked with ? at the beginning.

(8) a. The timing of ellipsis:

XP ellipsis applies as soon as the licensor of XP ellipsis satisfies all its featural requirements.²

b. The ellipsis licensing condition:

Ellipsis is a syntactic operation that gets rid of the phonological feature matrices of lexical items.

The constraint in (8a) entails that the timing of XP ellipsis can vary depending on the point where the licensor of XP ellipsis satisfies all its featural requirements.

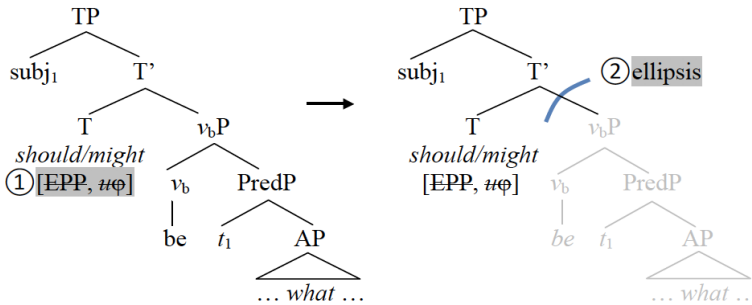
(9) The licensing condition on VP-bE ('be'-involving VP ellipsis):

The elided constituent must be c-commanded and licensed by the morphologically filled T in Narrow Syntax.

According to (9), the modal in T c-commands and licenses the elided constituent that is to derive from VP-bE. This modal in T as a licensor of VP-bE has featural requirements. For example, the embedded modal in (5a-d) has two featural requirements, one of which is Agree with phi-features, and the other of which is the EPP. These requirements are satisfied as soon as the modal in T as the licensor of VP-bE is introduced into the derivation. At the point of ellipsis, the subject has already been moved outside the ellipsis site. On the other hand, the object wh-phrase fails to escape from the ellipsis site before VP-bE applies. As a result, the object wh-phrase is elided along with VP-b. Therefore, the reason that the sentences in (5a-d) are unacceptable is that the object wh-phrase, which has already been elided inside the VP-b, is nevertheless pronounced outside the ellipsis site. The derivation at issue is represented in more details in (10).

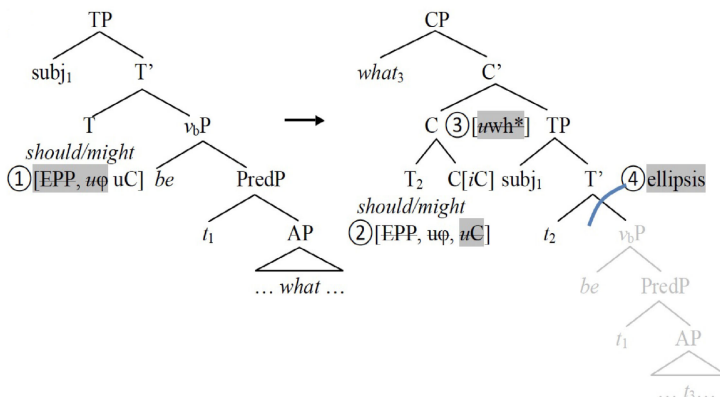
² If ellipsis is a pure PF operation, the idea of the timing of ellipsis may raise a problem in grammar architecture. But as generally acknowledged, ellipsis is deemed as one of the syntactic operations. In this case, ellipsis can interact with other syntactic operations like wh-movement. Park's (2017) inclusion of (8a) is conceived along this line of reasoning.

(10)



However, the examples in (6), where VP-b ellipsis applies in the matrix clauses, DO allow object *wh*-phrase extraction out of the ellipsis site. The matrix modal in (6a-d) has three featural requirements: (i) Agree in phi-features, (ii) the EPP, and (iii) the deletion of the [*u*C]-feature. The first two featural requirements are satisfied when the modal in T is introduced into the derivation. As a result, the uninterpretable φ-features are deleted, and the subject is moved to [Spec, TP]. Even after these two requirements are satisfied, ellipsis cannot yet apply because the [*u*C]-feature on T has not been deleted yet. When C merges with TP, the modal moves to C. Then, the [*i*C]-feature agrees with the [*u*C]-feature on T adjoined to C, and the [*uwh**]-feature attracts the object *wh*-element to its specifier position. Finally, VP-b undergoes elision. Now that the *wh*-element is placed outside the ellipsis site, it can be pronounced outside, as represented in (11):

(11)



To recapitulate, the contrast between (5) and (6) is attributed to the presence/absence of the [uC]-feature on the modals. Since the [ι C]-feature with the modals in (6) is not deleted until C is introduced to the derivation, ellipsis is delayed and thus, extraction of object wh-phrases out of the ellipsis site is allowed.

To support his analysis of VP-b ellipsis, he makes the following prediction: In CoPE, subject wh-phrase extraction should be allowed both in embedded and matrix clauses, thus not showing the asymmetry that we saw in object wh-phrase extraction. This is because subject wh-phrases undergo movement to [Spec, TP] in order to satisfy the EPP on T, and ellipsis must apply after the satisfaction of the EPP on T. Therefore, subject wh-phrases will be placed outside the ellipsis site at the point of ellipsis, regardless of whether ellipsis applies in embedded clauses or matrix clauses. This prediction is achieved, as shown in (12) and (13).

- (12) a. I don't know who won't be fond of this book, but I know who will.
 b. Although I wonder who mightn't be proud of his success, I don't know who might.
- (13) a. Who won't be fond of this boo, and who will?
 b. Who mightn't be proud of his success, and who might?

The acceptability of these sentences shows that the asymmetry between (5) and (6) is indeed due to the presence vs. absence of the [uC]-feature on T which motivates T-to-C movement.

Furthermore, he shows that his analysis can be extended to VP-b ellipsis in Indian Vernacular English (IVE). It is a well-known fact that IVE has T-to-C movement in embedded questions, but not in matrix questions. Based on his analysis for VP-b ellipsis, we can make a prediction as follows. If the contrast between (5) and (6) is due to the T-to-C movement driven by the [uC]-feature, IVE should exhibit the opposite pattern. That is, IVE should allow object wh-phrase extraction out of embedded VP-b ellipsis site, but not out of matrix ones. This prediction is borne out.

- (14) a. Who Mary will be proud of, and who John will *(be proud of t)?
 b. Although I wonder what will Mary be proud of, I don't wonder what will John (be proud of t).

Without CoPE, both sentences are perfectly acceptable. The acceptability of (14) renders further support to his analysis. In so doing, he can explain why in English, the embedded VP-b ellipsis does not allow object wh-phrasal extraction, while matrix VP-b ellipsis does.

3. More Data on Head Movement out of VP Ellipsis

As noted in the previous section, Park (2017) concentrates on the following contrast:

(15) *I don't know what Bill shouldn't be proud of, but I have a good idea about what he SHOULD.

(16) ?What shouldn't Bill be proud of, and what SHOULD he?

VP-bE with object wh-extraction applies successfully in the matrix clause involving T-to-C movement, but it does not in the embedded clause without it.

However, as can be seen below, when the copular verb survives outside the elided constituent affected by VP-bE, the matrix-embedded asymmetry does not arise:

(17) I don't know what Bill shouldn't be proud of, but I have a good idea about what he SHOULD be.

(18) What shouldn't Bill be proud of, and what SHOULD he be?

The acceptability of (17)–(18) indicates that the more important issue here is not the extraction of object wh-extraction from the VP ellipsis site, but its interaction with the remnant copula 'be' outside VP ellipsis.

As we also saw above, when not object but subject extraction applies in the clause with VP ellipsis, it is permitted either with the remnant copular verb 'be' or without it, as follows:

(19) a. I don't know who won't be fond of this book, but I know who will (be).

b. Although I wonder who mightn't be proud of his success, I don't know who might (be).

- (20) a. Who won't be fond of this book, and who will (be)?
 b. Who mightn't be proud of his success, and who might (be)?
- (21) a. John should [be fond of this book] and Tom should (be), too.
 b. Mary might [be proud of her teacher], but Jennifer might not (be).

Regardless of where VP ellipsis applies or what type of movement a subject undergoes, the remnant copular verb can be optionally realized.

We now move on to the VP-bE that applies to a longer string of auxiliaries in English. In these cases of (22)–(24) vs. (25)–(27), there is no matrix–embedded asymmetry in VP-bE, either. Particularly in the following example of (23), the copula verb 'be' in the embedded clause can be dropped in the course of VP ellipsis. This example is starkly different from the example in (15), where the copula cannot be dropped after VP ellipsis applies.

- (22) I don't know what Bill shouldn't have been proud of, but I have a good idea about what he SHOULD have been.
- (23) ?I don't know what Bill shouldn't have been proud of, but I have a good idea about what he SHOULD have.
- (24) *I don't know what Bill shouldn't have been proud of, but I have a good idea about what he SHOULD.

We take it that Park's (2017) analysis would wrongly rule out (23), where the copular verb in the embedded clause is dropped in the wake of VP ellipsis but unlike (15) this example is acceptable.

Exactly the same pattern is attested in the matrix clause. The copular verb can be dropped along with VP ellipsis as in (26):

- (25) What shouldn't Bill have been proud of, and what SHOULD he have been?
- (26) What shouldn't Bill have been proud of, and what SHOULD he have?
- (27) *What shouldn't Bill have been proud of, and what SHOULD he?

Now we turn to examine the difference between the copula verb 'be', on the one hand, and the progressive 'be' and the passive 'be', on the other hand, when they interact with VP ellipsis. First, the progressive 'be' can never be dropped in the process of VP ellipsis. This is true of the embedded clause in (28), of the matrix

clause in (29), and of the subject extraction situation in (30), with the acceptability judgement of the following examples due to Michael Barrie (perl. comm.):

- (28) a. I wonder who John must be hassling, and who PETER must be too.
 b. *I wonder who John must be hassling, and who PETER must too.
- (29) a. Who must John be hassling, and who must PETER be?
 b. *Who must John be hassling, and who must PETER?
- (30) a. John must be hassling Mary, and Peter must be too.
 b. *John must be hassling Mary, and Peter must too.

The same behavior is also found with the passive ‘be’. It cannot be dropped together along clause (31), in the matrix clause (32), or in the clause with subject extraction (33), with the acceptability judgement of the following examples due to Michael Barrie (perl. comm.):

- (31) a. I wonder who John must be hassled by, and who Peter must be too.
 b. *I wonder who John must be hassled by, and who Peter must too.
- (32) a. Who must John be hassled by, and who must PETER be too.
 b. *Who must John be hassled by, and who must PETER too.
- (33) a. John must be hassled by Mary, and Peter must be.
 b. *John must be hassled by Mary, and Peter must.

One more word with Park’s (2017) analysis is in order. Since there is a difference between the copula verb ‘be’ and the progressive/passive verb ‘be’ in their interaction with VP ellipsis, it seems that Park’s analysis needs to be modified to accommodate this contrast between the two distinct types of ‘be’.

On top of this empirical issue, one theoretical issue bearing on the timing of ellipsis in (8a) is that in Park’s (2017) analysis, when the embedded *wh*-object in (5a–d) undergoes *wh*-movement and the embedded VP undergoes VP ellipsis, the *wh*-movement of the former is delayed until the embedded C is inserted. The question that arises is why the edge feature at the periphery of *vP*/*VP* is not capitalized on. To the extent that the edge feature at the periphery of *vP*/*VP* is available in sentence structure, Park’s (2017) analysis confronts a non-trivial problem.

The generalization that emerges on the interaction of the verb ‘be’ with VP ellipsis is as follows. When a modal is followed by a non-copula auxiliary verb, it needs to

be done so as an output of VP ellipsis. By contrast, when a modal is followed by the copular verb 'be', it is optionally done so in the case of (either wh- or non-wh-) subject extraction. In the case of object wh-extraction, however, a modal needs to be followed by the copular verb 'be' in the clause without T-to-C raising, but it is optionally done so in the matrix clause involving T-to-C raising. In the next section, we will account for why this characteristics of generalization holds in the interaction of the auxiliary verbs with VP ellipsis in English.

4. Debunking the Generalization

Going forward towards an analysis of the generalization drawn concerning the interaction of the auxiliary verbs with VP ellipsis, we first show the following paradigm of VP ellipsis, originally noted by Sag (1976).

- (34) Betsy must have been being hassled by the police, and Peter
- a. *must too.
 - b. must have too.
 - c. must have been too.
 - d. *must have been being too. (Sag 1976)

This paradigm points to the size restriction on VP ellipsis in English. It cannot apply to the complement VP selected by the passive auxiliary verb 'be'. On top of this restriction, it cannot leave behind the modal alone in T. The acceptability of (34b) and (34c) indicates that a modal needs to be followed by at least of one of the auxiliary verbs, if any. The caveat of 'if any' is in need because without any auxiliary verb, the modal alone will do with VP ellipsis.

- (35) John must do the homework, and Peter must too.

One way of conceptualizing this property of a modal plus auxiliary verb combination in the face of VP ellipsis can be developed in the following structure representing one of the clauses in (34):

- (36) [_T modal [_{VP①} perfect 'have' [_{VP②} progressive 'be' [_{VP③} passive 'be'

In this structure, either VP② or either VP③ can be the target of VP ellipsis, but either VP① cannot.

Then, the next question is why in the case of (28)–(30) and (31)–(33) the progressive ‘be’ and the passive ‘be’ always survive VP ellipsis. The following structure in (37a) schematically represents (28)–(30), and the following structure in (37b) schematically represents (31)–(33):³

- (37) a. [_T modal [_{VP①} ∅ [_{VP②} progressive ‘be’ [_{VP③} ∅
- b. [_T modal [_{VP①} ∅ [_{VP②} ∅ [_{VP③} passive ‘be’

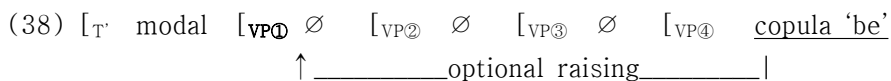
We have noted that both in (28)–(30) and (31)–(33), either the progressive ‘be’ or the passive ‘be’ is required to be present when VP ellipsis applies. This means that given the structures in (37a–b), either the progressive ‘be’ or the passive ‘be’ raises to the now vacant head position of the highest VP① before VP ellipsis applies. This requirement for the lower auxiliary verb ‘be’ to undergo raising and occupy the vacant highest head position in the extended VP domain is imposed by the selecting modal in T. In other words, the vacant highest head position in the extended VP domain receives an instruction from the selecting modal in T, in the same fashion that, as proposed by Chomsky (2000), T inherently lacks Agree or edge features and then its probing features and EPP property are inherited from C, via feature inheritance.

Now, the next question is why the copula verb ‘be’ displays different behaviors either from the progressive ‘be’ or the passive ‘be’.⁴ The initial assumption we

³ A null head or null heads in the extended projection of VP are postulated in (37a) and (37b), along the line of proposal made by Mitchell (1993). In fact, VP① corresponds to the perfect phrase possibly projected by the perfective auxiliary verb ‘have’, and VP③, to the passive or voice phrase possibly projected by the passive auxiliary verb ‘be’. As argued by Mitchell (1993), Sag’s (1976) paradigm involving VP ellipsis in the sequence of auxiliary verbs as in (34) can be accounted for in a rather plausible way by employing the structures as in (37a) and (37b).

⁴ To account for the distribution of progressive/passive ‘be’ and copula ‘be’ in the context of VP ellipsis, this paper relies on the assumption that the former undergoes mandatory head movement to the higher vacant head, whereas the latter does so optionally. The similar kind of optional head movement was argued for by Pollock (1989), who notes that in French infinitive clauses a main verb undergoes head movement optionally. Crucially, in our analysis, the verbal projection in the complement of a Tense in English is essentially infinitival, and copula ‘be’ differs from progressive/passive ‘be’ in that the former in the infinitival context behaves like a main verb, unlike the latter. We take the degraded acceptability of (6a–d) to reflect the optional raising of the copula in the context at hand.

entertain is that the former has mixed properties of being both lexical and functional. Therefore, in the context immediately following the modal, it can optionally undergo raising to a higher position in the extended VP domain. Thus, the copula verb ‘be’ can survive optionally outside VP ellipsis. For example, witness the schematic structure of (19)–(21) as follows, where the copula verb ‘be’ is postulated to be generated in the head of the lowest VP④:



Now, the remaining question to be answered is the now familiar contrast: why is the copular verb necessary in the embedded clause involving object wh-extraction from VP ellipsis, but not in the matrix clause with the corresponding operation? We repeat the relevant examples in (15) and (16), as (39) and (40):

- (39) *I don’t know what Bill shouldn’t be proud of, but I have a good idea about what he SHOULD.
- (40) ?What shouldn’t Bill be proud of, and what SHOULD he?

Let’s start with (40), where the presence of the copula verb is not required after VP ellipsis applies. To account for the acceptability of this example, we examine the following paradigm of examples with the presence/absence of T-to-C raising or subject-AUX inversion. In the first set of examples below, if there is no T-to-C raising in the preceding clause/sentence, VP ellipsis is not allowed in the following clause/sentence:

- (41) Mary will kiss Bill. Who will JOHN *(kiss)?
- (42) If you aren’t drinking water, then what ARE you *(drinking)?
 (Hartman 2011)
- (43) Mary is eating cake. What is JOHN *(eating)?
 (Messick and Thoms 2016)
- (44) I’m going to make a candlestick. What are YOU *(going to make a candlestick)?
 (Hardt 1999)

contain the copula 'be'. We then went to examine a fuller gamut of relevant data bearing on the interaction of auxiliary verbs and VP ellipsis. The generalization that emerges in our examination of the topic at hand is that if available, an auxiliary verb is followed by a modal verb in T at the periphery of object wh-extracting VP ellipsis. We attribute this restriction to Albrecht's (2010) distinction between ellipsis licenser and ellipsis trigger. In other words, when object wh-extracting VP ellipsis applies, an auxiliary verb as an ellipsis trigger can be placed in more local relation with the ellipsis site than a modal verb in T as an ellipsis licenser, hence the former is recruited by the latter. However, this option is not opted for when object wh-extracting VP ellipsis applies in the matrix clause with T-to-C raising. The crucial factor that comes into play in this case is the syntactic relation that holds between T and the moving wh-object at the edge of VP ellipsis, which triggers T-to-C raising. This syntactic relation can directly license the elision of VP, obviating the recruitment of an auxiliary verb as an ellipsis trigger.

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Examples in: English

Applicable Languages: English

Applicable Level: Tertiary

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