VP-Ellipsis, \( vP \)-Ellipsis, and \( vP \)-Fronting

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1. Introduction

VP-ellipsis (VPE), pseudogapping, and VP-fronting (VPF) all involve an operation on some verbal projection. Under the majority of analyses of pseudogapping (cf. Kuno 1981, Jayaseelan 1990, 2001, Lasnik 1995, 1999a, Johnson 2001, Baltin 2002, 2003), VPE and pseudogapping are both derived through ellipsis of verbal projection. VPF is movement of verbal projection to the sentence initial topic position. Given a standard phrase structure in current theory, in which verbal projection consists of a functional category \( v \) and a lexical category \( V \), a subtle but important empirical question is which is the relevant verbal projection in these constructions, \( vP \) or \( VP \)?

As for VPE and pseudogapping, Merchant (2008) argues that the former is (can be) derived by ellipsis of VP while the latter involves ellipsis of \( vP \), based on the observation that VPE allows mismatches in voice between the elided VP and its antecedent while pseudogapping does not, as illustrated in the following sentences:

(1)  \textit{VP-ellipsis (Merchant 2008 : 169)}

a. This problem was to have been looked into, but obviously nobody did \( \langle \text{look into this problem} \rangle \).

b. Actually, I have implemented it [= a computer system] with a manager, but it doesn’t have to be. \( \langle \text{implemented with a manager} \rangle \)

(2)  \textit{Pseudogapping (Merchant 2008 : 170)}

a. *Roses were brought by some, and others did lilies \( \langle \text{bring} \rangle \).

b. *Some brought roses, and lilies were by others. \( \langle \text{brought} \rangle \)

Given that (i) ellipsis is subject to a syntactic parallelism condition on ellipsis requiring that an elided XP has a syntactically identical antecedent XP', modulo contrastive elements and that (ii) the head that determines voice alternations is \( v \), Merchant argues that the contrast between (1) and (2) can be accounted for by the syntactic parallelism condition if we assume that VPE can be
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derived through deletion of VP while pseudogapping must be derived through deletion of vP. This is because VP in an active clause is syntactically identical to VP in a passive clause while vPs in a active clause and in a passive clause are different.

Regarding VPF, Huang (1993) provides evidence that a fronted verbal projection in a VPF sentence should contain a trace of subject. The following sentences illustrate this:

(3)  
   a. Which pictures of himself$_1$ did John$_1$ think Mary saw t?
   b. *Criticize himself$_1$, John$_1$ thinks Mary would not t.  
      (Huang 1993 : 107)

The sentence in (3a) is acceptable because there is a copy of the wh-phrase containing the anaphor himself in SpecCP in the embedded clause, where the anaphor can be locally bound by the matrix subject John. Given this, it is unclear why (3b) is unacceptable. If there is a copy of the fronted verbal phrase containing the anaphor himself in the embedded SpecCP, the intermediate copy should be able to be used for the binding. Huang argues that the unacceptability of (3b) can be accounted for if we assume that the fronted verbal phrase contains a trace (copy) of the embedded subject Mary. Even if there is an intermediate copy of the fronted verbal phrase in the embedded SpecCP, John cannot locally bind himself due to the presence of the subject copy in the verbal phrase. Given the vP structure, in which subjects are base-generated in SpecvP, this suggests that the fronted verbal projection is vP rather than VP because if VP could be fronted, the subject copy would not be contained in the fronted verbal phrase, as illustrated in the following:

(4)  
   a. *[vP t$_{Mary}$ criticize himself$_1$] [TP John$_1$ thinks [CP [vP t$_{Mary}$ criticize himself$_1$] Mary would not [vP t$_{Mary}$ criticize himself$_1$] ] ]
   b. [vP criticize himself$_1$] [TP John$_1$ thinks [CP [vP criticize himself$_1$] Mary would not [vP criticize himself$_1$] ] ]

In the representation in (4a), there is no copy of himself that is locally bound by John while in (4b), the copy in the intermediate position can be locally bound by John. Therefore, if Huang’s argument is correct, it must be the case that VPF is always derived through vP-movement.

Merchant’s generalization and Huang’s generalization are summarized in the following:

(5)  

Merchant’s Generalization
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a. VPE can be derived through deletion of VP.
b. Pseudogapping must be derived through deletion of vP.

(6)  

Huang’s Generalization

VPF must be derived through vP-movement.

If these generalizations are correct, the natural question that arises is why these hold. Neither Merchant (2008) nor Huang (1993) give an answer to this question. In this paper, I am trying to answer this question in a principled manner, arguing that a movement analysis of verbal phrase ellipsis, which originated from Johnson 2001, modified by Aelbrecht and Haegeman (2011), and elaborated by Funakoshi (to appear), combined with Lasnik’s (1999b) assumptions about V-movement, provides a principled explanation of these generalizations.

In section 2, I review a movement analysis of verbal phrase ellipsis in Funakoshi to appear, according to which VPE is derived through verbal phrase movement to SpecTopP in either the CP periphery or vP periphery, followed by deletion of the moved phrase. In section 3, I illustrate that Merchant’s generalization and Huang’s generalization can be explained under the movement analysis in Funakoshi to appear. Section 4 is a brief summary.

2. Movement Analysis of Verbal Phrase Ellipsis

2.1 Johnson 2001

Johnson (2001) argues, following the spirit of Lobeck 1995, that sentences involving VPE like the second conjunct in (7a) are derived by topicalizing VP and eliding the moved VP, as illustrated in (7b). Thus, according to this analysis, in order for a VP to elide, it must first topicalize.

(7)  
a. John ate a cake, and Bill did, too.
b.  

This analysis is conceptually appealing since under this analysis, we do not need to assume an additional operation specific to ellipsis: the same operation that is used for copy deletion can be utilized for ellipsis. This analysis has also an empirical motivation because it can straightforwardly capture similarities between VPE and VP-topicalization (or VPF) in the licensing conditions. VPE is licensed by auxiliary verbs like do, have, be, and infinitival to, as illustrated in the following
sentences, which are drawn from Johnson 2001:

(8) a. José Ybarra-Jaegger likes rutabagas, and Holly does Δ too.
    b. José Ybarra-Jaegger ate rutabagas, and Holly has Δ too.
    c. José Ybarra-Jaegger is eating rutabagas, and Holly is Δ too.
    d. Mag Wildwood wants to read Fred’s story, and I also want to Δ.

In the absence of such auxiliary verbs, VPE is prohibited, as the following examples indicate (drawn from Johnson 2001):

(9) a. I can’t believe Holly Golightly won’t eat rutabagas. I can’t believe Fred *(won’t), either.
    b. Sally Tomato started running down the street, but only after José started *(to).

    Johnson shows that the same licensing condition is applied to VPF, as illustrated by the following examples from Johnson 2001:

(10) Madame Spanella claimed that . . .
    a. eat rutabagas, Holly wouldn’t t.
    b. eaten rutabagas, Holly hasn’t t.
    c. eating rutabagas, Holly should be t.
    d. eating rutabagas, Holly’s wants to t.

(11) Madame Spanella claimed that . . .
    a. *would eat rutabagas, Holly t.
    b. *hasn’t eaten rutabagas, Holly t.
    c. ?*eating rutabagas, Holly started t.

    This distributional similarity between VPE and VPF can be straightforwardly captured by Johnson’s movement approach to VPE since the former is derived through the latter under this approach. Whatever rules out (11) also rules out (9).

    Despite its advantages, however, we cannot adopt Johnson’s analysis in its original form be-
cause there are a number of counterexamples to it, as Aelbrecht and Haegeman (2011) point out, which are reviewed in the next section.

2.2 Argument against Johnson 2001

Aelbrecht and Haegeman (2011) argue against Johnson’s analysis, showing that the distribution of VPF is much more restrictive than that of VPE (that is, there are a number of cases where VPE is allowed even if VPF is not). Some counterexamples are listed below:

(12) Wh Complements

a. *I knew that one student presented this article in my class but I can’t recall now [which of the students [present this article] did]

b. I knew that some students presented this article in my class but I couldn’t recall which of the students didn’t. (Aelbrecht and Haegeman 2011: 8)

(13) Adverbial Clauses


b. Mary wanted to move to London, and after she did, her life changed entirely. (Aelbrecht and Haegeman 2011: 10-11)

(14) Factive Complements

a. *John intends to make a table, and we’re afraid that [make one] he will.

b. John intends to make a table, and we’re afraid that he will. (Aelbrecht and Haegeman 2011: 12)

As illustrated in the above examples, VPE is allowed in the environments where VPF is not, such as Wh complements, adverbial clauses, and factive complements (see Aelbrecht and Haegeman 2011 for other counterexamples to Johnson’s analysis). This discrepancy between VPE and VPF is unexpected under Johnson’s analysis, in which VPE is derived through VPF: whatever rules out VPF should also rule out VPE in his analysis.
2.3 *TopP in the vP Periphery*

Aelbrecht and Haegeman (2011) suggest that we can overcome the problem with Johnson’s approach while maintaining its core idea that VPE is analyzed as involving movement of a verbal phrase, followed by deletion if we take a low vP periphery into consideration.\(^1\) Assuming that there is a TopP in the vP periphery, along the line of Jayaseelan (2001) and Belletti (2001, 2004, 2009), they argue that VPE involves movement of a verbal phrase to SpecTopP in the vP periphery rather than in the CP periphery. Then the counterexamples to Johnson’s original analysis lose their force under this alternative analysis if we assume that what causes the ungrammaticality in the counterexamples above is not movement itself but movement to the CP periphery. Given this discussion, Funakoshi (to appear) proposes the following hypothesis:

\[(15)\]
\[
\begin{align*}
&\text{a. VPF is derived through verbal phrase movement to SpecTopP in the CP periphery.} \\
&\text{b. VPE is derived through verbal phrase movement to SpecTopP in either the CP periphery or vP periphery.}
\end{align*}
\]

This hypothesis accounts for the fact that the distribution of VPF is more limited than that of VPE since VPE can be derived in two ways while VPF can be derived in only one way. For example, the second conjunct clause in (16a) can be derived in two ways, as illustrated in (16b) and (16c).

\[(16)\]
\[
\begin{align*}
&\text{a. John solved the problem, and Mary did too.} \\
&\text{b. } [\text{TopP [solve the problem]} [\text{TP Mary did } t ] ] \\
&\text{c. } [\text{TP Mary did } [\text{TopP [solve the problem]} [ t ] ] ]
\end{align*}
\]

In (16b), the elided verbal phrase is moved to SpecTopP in the CP periphery while in (16c), it is moved to SpecTopP in the vP periphery. On the other hand, the embedded clause of the second conjunct sentence in (17a) can only be derived in one way like (17b).

\[(17)\]
\[
\begin{align*}
&\text{a. John solved the problem, and I think that [solve the problem] Mary will too.} \\
&\text{b. } [\text{TopP [solve the problem]} [\text{TP Mary will } t ] ]
\end{align*}
\]

\(^1\)Actually, they also suggest two other alternatives in addition to the vP periphery analysis. See Aelbrecht and Haegeman 2011 for details.
In Funakoshi to appear, I explain Takano’s generalization and Lasnik’s generalization based on this analysis of VPE. Takano’s generalization says that XP-movement is prohibited if the head of XP has moved out XP (Takano 2000) and Lasnik’s generalization, that XP-ellipsis is prohibited if the head of XP has moved out of XP (Lasnik 1999b). See Funakoshi to appear for details.

Therefore, the analysis of VPE in Funakoshi (to appear) can not only save Johnson’s movement approach to VPE from counterexamples but also enables us to explain Takano’s generalization and Lasnik’s generalization. Furthermore, in the next section, I will provide an additional empirical support for the analysis, illustrating that this analysis of VPE in Funakoshi to appear, combined with Lasnik’s (1999b) assumptions about V-movement, enables us to explain Merchant’s generalization and Huang’s generalization.

3. Explanation

In addition to Funakoshi’s (to appear) analysis of VPE, I also adopt Lasnik’s (1999b) assumptions about V-movement, which are listed in the following:

\[(18) \quad \text{(Lasnik 1999b)}
\]

a. V has a strong feature that must be eliminated until the derivation reaches PF.

b. The strong feature of V can be eliminated either by moving to v or being elided by deletion.

Given these assumptions, V must either move to v or be deleted in order to eliminate the strong feature of V. In (19a), the strong feature is eliminated by moving V eat to v (F stands for the strong feature).

\[\text{a. John ate an apple.}
\]

\[\text{b. John } [vP \ t_{\text{John}} [ [\text{eat(F)-v]} [vP \ t_{\text{eat}} \text{ an apple }] ] ]
\]

On the other hand, in (20a), the strong feature can be eliminated by VPE.

\[\text{a. John solved the problem, and Mary did too.}
\]

2 Lasnik (1999b), however, immediately rejects the generalization on the basis of the fact that there are languages in which V is moved out of VP, while VPE is allowed. Funakoshi (to appear) explains why some languages are exceptional with respect to Lasnik’s generalization.
b. \[\text{solve(F) the problem}\] Mary did

With these in mind, let us consider how we can explain Merchant’s generalization and Huang’s generalization, which are repeated below.

(21) **Merchant’s Generalization**

a. VPE can be derived through deletion of VP.

b. Pseudogapping must be derived through deletion of vP.

(22) **Huang’s Generalization**

VP-fronting must be derived through vP-movement.

3.1 **Huang’s Generalization**

An explanation for Huang’s generalization is straightforward. It can be explained by Lasnik’s assumptions in (18). If a VPF sentence like (23a) is derived by vP-movement, the PF representation would be (23b), where V moves to v. On the other hand, if it is derived by VP-movement, the PF representation looks like (23c), in which V does not move to v.

(23) a. Solve the problem Mary would.

b. \[\text{TopP } [\text{VP } t_{\text{Mary}} [ [\text{solve(F)} \text{-v} ] [\text{VP } t_{\text{V}} \text{ the problem } ] ] ] [\text{TP } \text{Mary} [ \text{would } t_{\text{VP}} ] ] ]\]

c. \[^*\text{TopP } [\text{VP } \text{solve(F) the problem } ] [\text{TP } \text{Mary} [ \text{would } [\text{vP } t_{\text{Mary}} [ v_{\text{vP}} ] ] ] ]\]

The representation in (23b) is a licit PF representation since the strong feature of V is eliminated by movement of V to v. The representation in (23c), however, is illicit because V’s strong feature remains. This is why VPF must be derived through vP-movement rather than VP-movement.

Before proceeding to Merchant’s generalization, a word is in order concerning a possible landing site for VPF. Notice that the possible landing site for VPF, unlike VPE, is only SpecTopP in the CP periphery according to Funakoshi’s hypothesis in (15a). Movement to SpecTopP in the vP periphery is ruled out by Anti-Locality (cf. Abels 2003, Grohmann 2003). VP-movement to TopP in the vP periphery is prohibited because the strong feature of V remains as in the case of movement to TopP in the CP periphery, which is illustrated in (24).
(24) \[ *[\text{TP} \text{ Mary [ would } \text{[TopP [vP solve(F) the problem]] [ Top [vP t_Mary [ v t_vP ] ] ] ] }] \]

On the other hand, vP-movement to SpecToP in the vP periphery is unproblematic with respect to the strong feature since it can be eliminated by movement of V to v, as shown in (25).

(25) \[ *[\text{TP} \text{ Mary [ would } \text{[TopP [vP t_Mary [ [solve(F)-v] [vP t_v the problem ]] [ Top t_vP ] ] ] }] \]

Notice, however, vP is the complement of Top in the vP periphery. The most standard version of the Anti-Locality principle states that a complement of a head X cannot move to SpecXP. Therefore, movement of vP to SpecTopP in the vP periphery is ruled out by the Anti-Locality principle.\(^3\)

Therefore, the only possible derivation for VPF is one in which vP moves to SpecTopP in the CP periphery.

3.2 Merchant’s Generalization

As for Merchant’s generalization, let us first consider VPE. A VPE sentence like the second conjunct in (26a) cannot be derived through vP-movement to SpecTopP in the vP periphery, which is illustrated in the (26b), due to Anti-Locality as in the case of VPF: vP-movement to SpecTopP in the vP periphery is too local.

(26) a. John solved the problem, and Mary did too.

b. \[ *[\text{TP} \text{ Mary [ T [TopP [vP t_Mary [ [solve(F)-v] [vP t_v the problem ]] [ Top t_vP ] ] ] }] \]

However, in contrast with VPF, a VPE sentence can be derived through VP-movement to SpecTopP in the vP periphery. This is because the strong feature of V can be eliminated along with deletion of VP even if V does not move to v, as illustrated in the following:

(27) \[ [\text{TP} \text{ Mary [ T [TopP [vP solve(F) the problem]] [ Top [vP t_Mary [ v t_vP ] ] ] ] }] \]

Hence one half of Merchant’s generalization follows: VPE can be derived through deletion of VP.

Notice that the generalization does not say that VPE must be derived through deletion of VP (i.e. VPE might be vP-deletion). This is expected because we can utilize SpecTopP in the CP periphery as well as the vP periphery for VPE according to Funakoshi’s (to appear) hypothesis in

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\(^3\) Funakoshi (to appear) reduces the Anti-Locality principle to an economy condition on Copy.
vP-movement to SpecTopP in the CP periphery is legitimate with respect to Anti-Locality: vP is not a complement of Top in the CP periphery. Therefore, VPE can be either VP-deletion or vP-deletion.

Before proceeding to pseudogapping, a remark is in order with regard to the Phase Impenetrability Condition (PIC) (Chomsky 2000). I don’t assume the ‘standard’ version of PIC that states that a complement domain of a phase head is inaccessible to operations outside the phase. This version of PIC prohibits VP from moving to SpecTopP in (27) since VP is the complement of v, a phase head. Therefore, I adopt a slightly weaker version of the PIC that is proposed by Chomsky (2001). According to this version, a complement domain of a phase head is inaccessible to operations at the next higher phase. Given this, VP-movement to SpecTopP in the vP periphery in (27) is unproblematic since the next higher phase, CP, has not been completed. See Asarina 2011 for independent evidence in favor of this weaker version of the PIC over the stronger version.

Let us next turn to pseudogapping. Why must a pseudogapping sentence be derived through deletion of vP rather than deletion of VP (cf. (21b))? Suppose, following Jayaseelan 2001, that (i) there is FocP between TopP and vP in the vP periphery and that (ii) a remnant of pseudogapping is (at least can be) in SpecFocP in the vP periphery. Then a pseudogapping sentence with a direct object as a remnant is derived as the following under the present analysis of VPE:

\[
\begin{align*}
\text{(28)} & \\
\end{align*}
\]

First, Obj moves to SpecFocP. Given that this movement is triggered by a feature that the focalized element bears (say [Foc]), Subj in SpecvP does not block this movement since it does not have the relevant feature. Then VP moves to SpecTopP in the vP periphery. Notice that V can stay in-situ because the strong feature that induces V-movement to v will be eliminated by deletion afterwards. However, the next movement of Subj to SpecTP is illicit because Obj in SpecFocP intervenes for this movement by minimality, leading the derivation to crash because the EPP feature of T, the \(\phi\) feature of T, and/or the Case feature of Subj are never checked. The situation does not change even if VPE is derived through VP-movement to SpecTopP in the CP periphery rather than the vP periphery, as illustrated in the following:
Thus, a remnant in SpecFocP always blocks movement of subjects to SpecTP.

In a vP-ellipsis derivation, on the other hand, the intervention effect by a remnant in SpecFocP can be lifted. Suppose that vP rather than VP moves to SpecTopP in the vP periphery after Obj moves to SpecFocP. Then, Subj, which is contained in the moved vP, can move to SpecTP without being blocked by Obj in SpecFocP since Subj escaped from the c-command domain of Obj due to the prior movement of vP to SpecTopP in the vP periphery (this is reminiscent of the smuggling derivation that Collins (2005a,b) propose for the passive and raising in English.) This is illustrated in the following:

Notice that unlike VPE, vP can move to SpecTopP in the vP periphery without violating the Anti-Locality principle since there is FocP between TopP and vP (i.e. vP is not a complement of Top in this case). Therefore, there is a vP-ellipsis derivation for pseudogapping: “smuggling” movement of vP to SpecTopP in the vP periphery makes it possible for subject to move to SpecTP without being blocked by Obj in SpecFocP. Now the second half of Merchant’s generalization follows: deletion of VP cannot derive pseudogapping since a remnant in SpecFocP intervenes for subject movement to SpecTP while in a vP-ellipsis derivation, in which vP moves to SpecTopP in the vP periphery, the intervention effect induced by a remnant in SpecFocP is lifted.

Notice that if we adopt Johnson’s analysis of VPE, in which VPE involves VP-movement to the CP periphery, or if we do not adopt movement approaches to VPE at all, it is impossible to explain the difference between VPE and pseudogapping in the size of an elided constituent (Merchant’s generalization) by minimality. Therefore, this is a strong advantage of Funakoshi’s (to appear) analysis over the other analyses.
4. Conclusion

In this paper, I showed that (i) Huang’s generalization can be explained by Lasnik’s (1999b) assumptions about V-movement and (ii) Merchant’s generalization can be reduced to minimality under the movement analysis of verbal phrase ellipsis in Funakoshi to appear. Crucially, (ii) cannot be achieved under other alternative approaches to VPE (Johnson’s (2001) movement approach nor “standard” non-movement approaches). Thus, we can conclude that this constitutes an additional empirical support for Funakoshi’s (to appear) analysis.

References


Aelbrecht, Lobke, and Liliane Haegeman. 2011. VP ellipsis is not licensed by VP topicalization. Ms. GIST University Ghent.


