

A Phonological Analysis of VP-Ellipsis in Infinitival Clauses*

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Abstract

The goal of this paper is to propose a new phonological analysis of VP-Ellipsis (VPE) in infinitival clauses. VPE in infinitival clauses is possible in a complement of a predicate, but not in a subject position. I propose that VPE is allowed if an infinitive marker has its prosodic host within a phonological phrase. Such prosodic structures are obtained through prosodic phrase restructuring, which is triggered by focus marked on the infinitive marker. The restructuring is prevented by an Intonational Phrase (ι-phrase) boundary, which results in the ungrammaticality of VPE sentences. The proposed analysis provides a unified account of various VPE data in which an ι-phrase boundary prevents a restructuring operation. In addition, I show that VPE is not permitted if an additional phonological operation destructs an existing correct prosodic structure. Finally, I provide evidence for the correlation between ellipsis and focus, by considering clausal ellipsis stranding a complementizer.

Keywords: VP-Ellipsis, infinitival clause, Phonological Phrase, Intonational Phrase, focus, restructuring

1. Introduction

The goal of this paper is to propose a new phonological analysis of VP-Ellipsis (VPE) in infinitival clauses. VPE involves non-pronunciation of verbal phrases, as

illustrated in (1), where a missing VP is indicated by underline “__.”

- (1) Bill wants to leave, but Mary doesn't want to __. (Zagona (1988: 100))

In this sentence, the VP in the complement clause of the second conjunct is omitted, and the missing part is interpreted as *'leave,'* under identity with the infinitival VP of the preceding sentence. Although VPE in infinitival clauses is observed in a complement of a predicate such as (1), it cannot be allowed in a subject infinitival clause, as shown in (2).

- (2) *You shouldn't play with rifles because to __ is dangerous.
(Johnson (2001: 445))

The intended meaning of (2) is *'you shouldn't play with rifles because to play with rifles is dangerous,'* but this interpretation is not obtained.

Thus, VPE in infinitival clauses is restricted in some way, but how do we account for the restriction of VPE?

This question has been investigated in terms of phonology by Zwicky (1982) and O'Flynn (2008).¹ However, their analyses do not provide a sufficient account in that they involve some problematic structural assumptions. In this paper, maintaining Zwicky and O'Flynn's insight, I propose an alternative analysis of VPE in infinitival clauses. Specifically, following the previous studies, I assume that an infinitive marker *to*, which is phonologically too weak to stand alone, must find its host within a phonological phrase (ϕ -phrase). Given this assumption, I propose that ϕ -phrases in a VPE sentence are restructured by applications of Focus Restructuring Rule in Kenesei and Vogel (1995), and that VPE is permitted if an infinitive marker can form a ϕ -phrase with its host via the prosodic phrase restructuring. The relevant restructuring operation cannot apply over an Intonational Phrase (ι -phrase) boundary,

and hence VPE in particular environments ungrammatical. Thus, applicability of restructuring determines acceptability of VPE.

This paper is organized as follows. In section 2, I review some previous analyses of VPE in infinitival clauses, and point out their problems. Section 3 presents some assumptions on an infinitive marker *to*, and a ϕ -phrase restructuring rule proposed in Kenesei and Vogel (1995), and then propose a new phonological analysis. In section 4, I consider some consequences of the new phonological analysis. Section 5 is a conclusion.

2. Previous Analyses and their Problems

In this section, I review two phonological analyses by Zwicky (1982) and O'Flynn (2008). Although they can capture the applicability of VPE shown in section 1, they are problematic with respect to their structural assumptions about infinitival clauses.

2.1. Zwicky (1982)

Zwicky's analysis assumes that an infinitive marker *to* is phonologically too weak to stand alone. That is, an infinitive marker requires an adjacent prosodic host. This phonological assumption is supported by the following examples, where two short answers are contrasted.

- (3) Do you want to leave, or not to?
 a. Not to.
 b. *To.

In (3a), the infinitive marker co-occurs with a negation *not*, and the former can phonologically depend on the latter. Zwicky assumes that the sentence obtains a correct prosodic structure, and hence it is grammatical. In contrast, the infinitive

marker in (3b) stands alone because there is no other element adjacent to it. In this situation, the infinitive marker cannot depend on anything, which results in the ungrammaticality. Because of this property, Zwicky calls an infinitive marker *leaner*.

Zwicky observes that the phonological dependency usually establishes between an infinitive marker and a following element, as indicated in (4), where square bracket “[]” means a phonological unit.

(4) [We want] [to leave]

In (4), an infinitive marker is phonologically incorporated into the following verb, not into the preceding verb. However, in the circumstance where the leaner loses its host as a result of VPE, it (re)attaches to the preceding element, as indicated in (5).

(5) [We want to] __

In this sentence, the leaner cannot be phonologically dependent on a following verb because it is lost due to VPE. The leaner seeks and finds another host on its left. Since the infinitive marker phonologically reattaches to the preceding element, it does not stand alone, and hence the output is legitimate. Zwicky formulates this prosodic restructuring operation as follows.

(6) *To* Reattachment (Zwicky (1982: 29))

When it does not form a VP constituent with an immediately following VP, the English infinitive marker *to* attaches to the constituent immediately to its left, to form a phonological phrase with it.

In addition, Zwicky proposes that applications of (6) is restricted in particular syntactic environments, as stated by the condition of (7).

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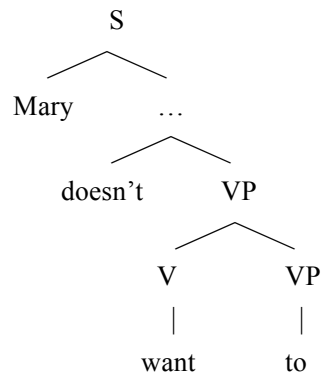
(7) The Own-S Condition

An infinitive marker cannot move out of its surface-structure S.

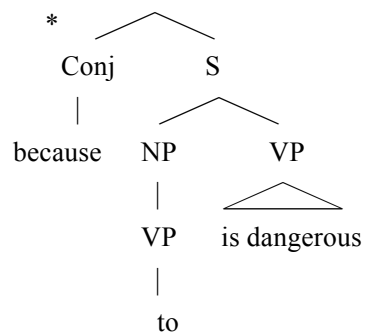
According to (7), reattachment of the learner *to* is impossible if the operation is applied over a sentential boundary.

We are now ready to show how Zwicky accounts for the distribution of VPE. He provides the sentences in (1-2) with structures depicted in (8a-b) respectively. In the trees, a sentential constituent is indicated by the node “S.”

(8) a. Bill wants to leave, but Mary doesn't want to ___



b. *You shouldn't play with rifles because to ___ is dangerous



In the tree of (8a), the infinitive marker and its host are contained within a sentential constituent. Therefore, the reattachment rule in (6) can apply, and hence the sentence is permitted. In contrast, in (8b), the sentential node *S* separates the learner *to* from its potential host *because*. Reattachment is prohibited under the condition in (7), and therefore the sentence is disallowed.

Although this analysis captures the contrast between the sentences in (1-2), it is clearly problematic in the current research. Unlike the presented structures in (8), the current framework of syntax analyzes infinitival phrases as a sentential constituent. That is, the condition in (7) prohibits all reattachment, and hence we predict that the VPE sentences are all ungrammatical, contrary to fact.

2.2. O’Flynn (2008)

Following Zwicky, O’Flynn proposes that VPE is possible if the learner *to* is combined with a preceding element. However, unlike Zwicky, O’Flynn articulates the concept of “sentence” which prevents reattachment, and then defines such a blocking category as a CP, not a TP. As a result, reattachment over a CP boundary is prohibited, while such integration of *to* is permitted if an infinitival clause forms a TP.

Now, I briefly review O’Flynn’s analysis of the data in (1-2). First, let us see how VPE is allowed in (1). O’Flynn assumes that a complement infinitival clause forms a TP, not a CP. This means that there is no CP boundary between a verb selecting an infinitival clause and an infinitive marker of the clause. I roughly schematize a syntactic structure of (1) in (9a), and its phonological representation in (9b). A phonological phrase (φ -phrase) is indicated by round bracket with φ “() φ ,” here and below.

- (9) a. Bill wants to leave, but Mary doesn’t [_{VP} want [_{TP} to ___]]
 b. Bill wants to leave, but Mary doesn’t (want to) φ

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In (9b), reattachment makes a ϕ -phrase containing both the infinitive marker and its host. The resulting prosodic structure is legitimate, and thus the sentence is grammatical.

Let us now see how O'Flynn blocks VPE in infinitival clauses in subject positions. She assumes that subject clauses are CPs, because moved clauses are generally assumed to be a CP, not a TP, and a subject moves to its dedicated position. Then, sentence (2), repeated in (10a), has the phonological representation in (10b). The formed CP boundary is indicated by round bracket with CP “()_{CP}.”

- (10) a. *You shouldn't play with rifles because [_{CP} to ___] is dangerous
 b. You shouldn't play with rifles because ((to) _{ϕ})_{CP} is dangerous

In (10b), it is impossible to apply ϕ -phrase restructuring over the CP boundary. As a result, the leaner *to* is stranded alone, and hence the phonological output is illegitimate.

O'Flynn's analysis solves a problem with Zwicky's one. However, this approach is not without problems. As O'Flynn herself admits, taking a complement clause of a control verb as TP does not have any support. In fact, control predicates are generally assumed to take a CP, but not a TP. This is supported by the difference in the movability between a complement clause of a control verb and that of a raising verb, as exemplified in (11).

- (11) a. ?It was to win the race that we wanted. (O'Flynn (2008: 19))
 b. *It was to be winning the race that she seemed. (ibid.)

In (11a), the complement clause of a control verb *want(ed)* can move into the focus position of the cleft sentence. In contrast, in (11b), the complement clause of a raising verb *seem(ed)* cannot move. The contrast can be attributed to the structural

difference: control verbs take CP complements, which can move, whereas raising verbs take TP complements, which cannot move.

3. Proposal and Analysis

In this section, I propose a new phonological analysis which does not depend on a particular syntactic constituent to block undesirable reattachment of the infinitive marker *to*. Specifically, I argue that the restructuring operation is triggered as a result of applications of Focus Restructuring Rule proposed in Kenesei and Vogel (1995), which requires a focused element to be added to a ϕ -phrases on its left side. The operation is prevented from applying over an Intonational Phrase (ι -phrase), which is a prosodic constituent larger than ϕ -phrase. This proposal, along with some assumptions about prosodic phrasing, provides a phonological analysis of the VPE data of (1-2).

3.1. Assumptions and Proposal

To begin with, I make two assumptions for my argument. First, following Samko (2014) and Lopez and Winkler (2000), I assume that VPE involves focus which is marked on a T-element.² Specifically, VPE in infinitival clauses is licensed by the focus on an infinitive marker. This assumption is supported by the fact that VPE is not licensed by a contracted form of *to*, which is not compatible with focus (Wilder (1997)):

(12) *John is leaving, and I wanna __ too. (Zagona (1988: 96))

The ungrammaticality of (12) suggests that VPE in infinitival clauses requires the infinitive marker to be focused.³

Second, I adopt Focus Restructuring Rule proposed in Kenesei and Vogel (1995). They argue that English has the Focus Restructuring Rule in (13), which

applies at the φ -phrase level.

(13) Focus Restructuring Rule: English

If some word in a sentence bears focus, place a φ -phrase boundary at its right edge, and join the word to the φ -phrase on its left. Any items remaining in a φ -phrase after the item bearing focus has been regrouped retain their φ -phrase status.

According to this rule, a focused word is phonologically separated from the word on its right side even if they form a φ -phrase in a non-focus circumstance. Instead of the normal φ -phrasing, a focused word is added to a preceding word, and it (re)forms a φ -phrase. This restructuring rule is motivated by the curious effect on the Rhythm Rule, which is responsible for familiar stress shifts that avoid the clash of two adjacent primary word stresses within a φ -phrase. See the examples in (14), where stress is explicitly expressed by the stress marker “ˈ,” and a focused word is emphasized by bold font with square bracket “[].”

- (14) a. It's hard (to outcláss) φ (Deláwáre's football team) φ .
 → ... (to outcláss) φ (Deláwáre's football team) φ
- b. It's hard (to outcláss) φ (**[Deláwáre's]** football team) φ .
 → ... (to outclass **[Deláwáre's]**) φ (football team) φ ... (ibid.: 19, 22)

In (14a), two stresses are adjacent, but neither of them shifts as a result of the application of Rhythm Rule because the two stresses exist in different φ -phrases. However, when focus is placed on the first word of direct object *Delaware's*, the Rhythm Rule may apply, as shown in (14b). This pattern follows from the restructuring rule in (13). That is, the focused word is added to the φ -phrase on its left via the φ -phrase restructuring.

Notice that Kenesei and Vogel argue that applications of the rule in (13) is restricted in particular circumstances such as (15), where two stresses are linearly adjacent but they are separated by an Intonational Phrase (ι -phrase) boundary. An ι -phrase boundary is indicated by round bracket with a symbol ι “() ι .”

- (15) Martha, (according to $\boxed{\text{Pauline}}_{\iota}$, ($\boxed{\text{owns}}_{\phi}$) the house.
 \rightarrow^* ... (to Páuline_{ϕ}) ι (ówns_{ϕ}) (the house) ϕ (ibid.: 29)

Rhythm Rule does not apply to (15) even if the verb *owns* has focus. This data suggests that Focus Restructuring does not apply over an ι -phrase boundary.

Now, I am ready to present my proposal. As a consequence of the above two assumptions, I propose that the focus on an infinitive marker in VPE triggers Focus Restructuring, which in turn causes the ϕ -phrase restructuring to determine the grammaticality of VPE in infinitival clauses. In the remainder of this section, I analyze the data in (1-2).

3.2. Analysis

First, consider (1) repeated below as (16a). Following Selkirk's (2005) observation that there is no ι -phrase boundary between a complement clause and a verb selecting it, (16a) has the phonological representation of (16b).

- (16) a. Bill wants to leave, but Mary doesn't want to ____.
 b. ... (want) ϕ (to) leave) \rightarrow ... (want to) ϕ (~~leave~~) ϕ

As shown in the representation, the focused infinitive marker can be combined with a preceding verb, as a result of the application of Focus Restructuring Rule. The correct prosodic structure is obtained so that the sentence is grammatical.

Next, consider the case of VPE stranding an infinitive marker in a clausal

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subject. Following An (2007) and Selkirk (1978), I assume that a subject clause forms an ι -phrase boundary. Then, sentence (2), repeated here as (17a), obtains the representation of (17b).

- (17) a. *You shouldn't play with rifles because to ___ is dangerous.
 b. ... because (([to] play) $_{\phi}$ (with rifles) $_{\phi}$) $_{\iota}$... \rightarrow
 ... because l([to]) $_{\phi}$ (~~play~~) $_{\phi}$ (~~with rifles~~) $_{\phi}$) $_{\iota}$...

(17b) shows that incorporation of *to* into a preceding ϕ -phrase is impossible because it is blocked by the ι -phrase boundary. Since the leaner *to* is stranded alone, the obtained prosodic structure is illegitimate, and hence the sentence is ungrammatical.

In contrast, if an infinitive marker co-occurs with a negation as shown in (18a), VPE is possible. Its resulting phonological representation is given in (18b).

- (18) a. You should unload rifles because not to ___ is dangerous.
 (Johnson (2001: 447))
 b. ... because l([not to]) $_{\phi}$ (~~play~~) $_{\phi}$ (~~with rifles~~) $_{\phi}$) $_{\iota}$...

In the representation of (18b), the infinitive marker, unlike that of (17), is combined with a preceding element *not*. The phonologically weak word can be dependent on a preceding material, and therefore the sentence is grammatical.

As illustrated above, the distribution of VPE in infinitival clauses is constrained with respect to the applicability of Focus Restructuring. Note that my proposal is different from the previous approaches reviewed in section 2, in that the current system does not make use of a particular syntactic constituent to restrict prosodic phrase restructuring. That is, I do not make unreasonable structural assumptions. In addition, the ϕ -phrase restructuring and its restriction are independently proposed and empirically supported by Kenesei and Vogel (1995). In

this respect, my proposal can provide more empirically motivated analysis than the previous ones.

4. Consequences

In this section, I will provide further consequences of my proposal that VPE in infinitival clauses is constrained by the applicability of Focus Restructuring. This section is organized as follows. First, I present further VPE data in which an *t*-phrase boundary prevents a restructuring operation. Second, I show that VPE is not permitted if an additional phonological operation destructs an existing legitimate prosodic structure. Finally, I provide evidence for the correlation between ellipsis and focus from the clausal ellipsis stranding a complementizer.

4.1. Extending the Data Range

The current proposal predicts that VPE is always impossible if the operation strands an infinitive marker alone as a result of blocking Focus Restructuring. In this section, I provide further data involving *t*-phrase boundary to show that the prediction is borne out.

The first data involves parentheticals and non-restrictive relatives (NRR), which are known to form an *t*-phrase on their own (see Selkirk (1984)). My proposal predicts that VPE stranding an infinitive marker is disallowed if the phonologically weak word directly follows a parenthetical phrase or an NRR. This prediction is borne out by the examples in (19a-b), whose phonological representations are presented in (20a-b), respectively.

- (19) a. *For John to help Mary will make her happy and
for Bill, as she hopes, to ___ will make her happier.
- b. *For John to help Mary will make her happy and
for Bill, who she likes the best, to___ will make her happier.

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- (20) a. For John to help Mary will make her happy and
for Bill, (as she hopes,) $[(\mathbf{to})]_{\Phi}$ will make her happier
- b. For John to help Mary will make her happy and
for Bill, (who she likes the best,) $[(\mathbf{to})]_{\Phi}$ will make her happier

In (20), ϕ -phrase restructuring is prevented by ι -phrase boundaries, and hence the VPE sentences are ungrammatical. The phonological analysis is supported by the fact that VPE is allowed if a parenthetical phrase or an NRR follows an infinitive marker. The relevant examples are presented in (21) with their phonological representation in (22).

- (21) a. For John to help Mary will make her happy and
for Bill to __, as she hopes, will make her happier.
- b. For John to help Mary will make her happy and
for Bill to __, who she likes the best, will make her happier.
- (22) a. For John to help Mary will make her happy and
(for Bill $[(\mathbf{to})]_{\Phi}$, (as she hopes,) $_{\iota}$ will make her happier
- b. For John to help Mary will make her happy and
(for Bill $[(\mathbf{to})]_{\Phi}$, (who she likes the best,) $_{\iota}$ will make her happier

In (21), unlike (19), the infinitive marker is not separated from its host by an ι -phrase boundary, and therefore the legitimate prosodic structures can be obtained by Focus Restructuring.⁴

In addition, VPE stranding *to* is prohibited in a remnant of gapping, which Selkirk (2005) argues forms an ι -phrase on its own. The VPE data and its phonological representation are presented in (23).

- (23) a. *John wants not to leave, but Bill, to.

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- b. John wants not to leave, ((but **[Bill]**)_Φ)_t ((**[to]**)_Φ)_t

The grammaticality of VPE improves if a stranded *to* co-occur with a negation within the formed *t*-phrase, as predicted by my proposal.

- (24) a. John wants to leave, but Bill, not to.
 b. John wants to leave, ((but **[Bill]**)_Φ)_t ((**[not to]**)_Φ)_t

Another context is brought from the case of rightward-movement of a clausal constituent. An (2007) proposes that this kind of moved constituent forms an *t*-phrase. VPE stranding an infinitive marker in such a rightward-moved position is impossible, as shown in (25), with its phonological representation.

- (25) a. *John wants for some reason to leave.
 and Bill wants for another reason to __.
 b. ... Bill wants, for another reason ((**[to]**)_Φ)_t

In this sentence, the infinitival clause in the second conjunct moves across the adjunct phrase *for another reason*, and then its VP is elided leaving behind only the infinitive marker. In contrast to (25), VPE is allowed if the learner *to* has its host within a moved clause;

- (26) a. John wants for some reason to leave ...
 and Bill wants for another reason not to __.
 b. ... and Bill wants for another reason ((**[not to]**)_Φ)_t

This is also compatible with my proposal.

The final data comes from the sentence involving Right Node Raising (RNR).

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This is the construction where, according to Swingle (1993), each conjunct and a target of RNR are obligatorily parsed as a separate ι -phrase. This leads us to predict that VPE stranding an infinitive marker is disallowed within an RNRed infinitival clause. This prediction is borne out by sentence (27a), whose phonological representation is (27b).

- (27) a. *Mary doesn't like to get up early
while John prefers, and Bill wants, to.
- b. Mary doesn't like to get up early
(while John prefers) ι (and Bill wants) ι (([to]) ϕ) ι

On the other hand, my informants judge that the grammaticality of VPE improves if an infinitive marker co-occurs with a negation within an RNRed constituent, as shown in sentence (28a), whose representation is given in (28b).

- (28) a. (?)Mary likes to stay up late
while John prefers, and Bill wants, not to.
- b. Mary likes to stay up late
(while John prefers) ι (and Bill wants) ι (([not to]) ϕ) ι

Thus, the presented data are all accounted for by my proposal. This fact ends in corroborating the current phonological proposal.

4.2. Deletion within the Restructured ϕ -Phrase

This subsection shows the case where VPE in infinitival clauses is prohibited for some reason other than the limit on restructuring. Specifically, VPE cannot apply if an infinitive marker loses its host as a result of an additional deleting operation. Such cases involve Copy Deletion, whereby lower copies of moved elements are

missing in phonological representations. This kind of example is presented in (29) with its rough phonological representation.

- (29) The public wanted Shultz to resign; (Zagona (1988: 103))
 a. *Who did you want to ___?
 b. who did you (want)_φ (~~who~~ [to])_φ (~~resign~~)_φ

As shown above, VPE stranding *to* is impossible if the subject of the infinitival clause is extracted. (29b) shows that although the stranded *to* is dependent on the lower copy of the moved *wh*-phrase, the copy is ultimately lost as a result of Copy Deletion. Consequently, the VPE sentence has an illegitimate PF output, and hence unacceptable. Thus, the phonological approach correctly captures the ungrammaticality of VPE sentences where a prosodic phrase formed by Focus Restructuring is destructed by some later phonological process.⁵

This story solves a problematic case for my proposal: the impossibility of VPE within adverbial infinitival clauses, as illustrated in (30).

- (30) *Mag Wildwood came to read Fred's story, and I also came to ___.
 (Johnson (2001: 440))

(30) shows that VPE stranding *to* in an adjunct position is disallowed. The ungrammaticality cannot be attributed to blocking effect on Focus Restructuring, because a right-adjoined adjunct clause is not obligatorily separated from a matrix clause by an *t*-phrase boundary (see Potts (2005) and Selkirk (2005)). That is, Focus Restructuring should incorporate the infinitive marker into a preceding prosodic phrase, and form a legitimate ϕ -phrase. As a result, the proposed system predicts the VPE sentence in (30) is grammatical, contrary to fact.

The problem, however, can be solved by appealing to Copy Deletion as

discussed just above. To set the stage for my argument, I adopt Bošković's (2018) assumption that right-adjoined adjunct clauses are base-generated in a VP-domain, and then, they move to their dedicated position. Assuming this adjunct movement, sentence (30) has the derivation of (31), which clearly represents the copy created by the movement.

- (31) Mag wildwood came to read Fred's story, and
I also came [_{CP} **[to]** read Fred's story] [_{CP} **[to]** read Fred's story]

The point here is that the moved adjunct clause follows its copy in the base-generated position. Therefore, the resulting linear order makes the focused infinitive marker dependent on a word within the copy. That is, the learner *to* is incorporated into the φ -phrase (*Fred's story*) φ , as roughly schematized below:

- (32) ... (also came **[to]**) φ (read) φ (Fred's story **[to]**) φ (read) φ (Fred's story) φ

Then, applications of the VPE and Copy Deletion yields the representation of (33).

- (33) ... (also came ~~**[to]**~~) φ (~~read~~) φ (Fred's story **[to]**) φ (~~read~~) φ (Fred's story) φ

As shown above, the infinitive marker is stranded alone within a φ -phrase, and hence the representation is illegitimate. As the result of the assumed phonological processes, VPE in adverbial infinitival clauses is impossible.⁶

4.3. The Relatedness of Focus

In this subsection, I will provide a further argument for the correlation between ellipsis and Focus Restructuring by considering another ellipsis case, specifically clausal ellipsis stranding a complementizer (*whether/that*). To set the stage, I will

first review works on the phonological status of functional categories.

In the phonological literature, functional categories have been often analyzed as phonologically too weak to stand alone. For example, Selkirk (1984) proposes the Principle of the Categorical Invisibility of Function Words, which states that function words are invisible to the syntax-prosody mapping. She argues that functional words are usually dependent on an adjacent lexical word. Truckenbrodt (1999) also presents the Lexical Category Condition, which states that a prosodic phrase must contain a lexical word because phonological mapping neglects functional words. Based on the previous researches, Sato and Dobashi (2016) formulates the following condition:

- (34) Function words cannot form a prosodic phrase on their own.
(Sato and Dobashi (2016: 333))

According to the condition, if a functional word forms a prosodic word without its host, then the resulting sentence should be ungrammatical because of incorrect prosodic phrasing. The prediction is empirically supported by the following examples:

- (35) a. John bought something, but
I don't know what_i ~~he bought t_i~~.
b. *John insisted that he turned in his homework, but
I wasn't sure whether ~~he turned in his homework~~.
(Saito et al. (2008: 252))

As shown in (35), the clausal ellipsis is possible in the presence of a lexical word *what* whereas it is impossible when only a functional word *whether* is stranded as a remnant.⁷ The contrast is straightforwardly captured in the respect of prosodic

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phrasing. Following phonological phrasing in Nespor and Vogel (1986), Dobashi (2003, 2017), and Sato and Dobashi (2016), I roughly schematize the phonological representation of (35) as follows:

- (36) a. ... I don't know (what)_φ (~~he~~)_φ (~~bought~~)_φ
 b. ... *I wasn't sure (whether ~~he~~)_φ (~~turned in~~)_φ (~~his homework~~)_φ

The grammaticality reflects the legitimacy of the resulting phonological phrases; the remnant of (36a) includes a content word, while that of (36b) contains only a function word that is insufficient to form a prosodic phrase. Notice that a complementizer stranded by sluicing cannot bear focus because they “do not show/trigger new information” (Kim (2001: 68)), which is a characteristic of a focused element. This means that Focus Restructuring does not rescue (36b).

In contrast to sluicing, it has been observed that a complementizer can bear focus in a Right Node Raising construction. Sato and Dobashi (2016) analyze as focused elements the expressions which immediately precede the target of RNR. Putting aside the details of focus assignment system of RNR, I assume that Sato and Dobashi's analysis is on right track. Then, we predict that a complementizer directly preceding a target of RNR can undergo Focus Restructuring to form a legitimate phonological phrase. This prediction is borne out by (37a), which has the phonological representation of (37b).

- (37) a. Jim's been wondering [**if**] __,
 and Tom's been saying [**that**], Sue really likes Pat.
 b. Jim's (been wondering [**if**])_φ,
 and Tom's (been saying [**that**])_φ, Sue really likes Pat

In (37b), the focused complementizers are incorporated into the preceding phrases

as the result of Focus Restructuring. Consequently, the phonological status improves, and hence ellipsis stranding a complementizer is possible.

In sum, the rescue effect on clausal ellipsis supports my proposal.⁸

5. Conclusion

In this paper, I have proposed a new phonological analysis of VPE in infinitival clauses that is possible in a complement of a predicate but not in a subject position. I have reviewed the two previous phonological approaches to the ellipsis pattern, and have pointed out that they are insufficient because they depend on problematic structural assumptions. I have claimed that VPE is possible if an infinitive marker forms a phonological phrase with a preceding word via Focus Restructuring, and that it is prevented by an *t*-phrase boundary. Then, the legitimacy of VPE depends on the applicability of the prosodic phrase restructuring. The proposed analysis is supported by the ungrammaticality of various VPE data in which an *t*-phrase boundary prevents a restructuring operation. In addition, I have shown that VPE is banned if an additional phonological operation destructs an existing legitimate prosodic structure. Finally, I have provided evidence for the correlation between ellipsis and focus in terms of clausal ellipsis stranding a complementizer.

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Notes

- 1) The distribution of VPE in infinitival clauses has also been analyzed from the syntactic perspectives. See Zagona (1988), Lobeck (1995), and Johnson (2001), among others for some syntactic approaches, and see Shima (2017) for the problems with their syntactic analyses.
- 2) This is known as *Verum Focus*, which is marked on Laka's (1990) Σ and is usually realized on T-elements. There are focus alternatives composed of the positive form *to* and the negative one *not to*.
- 3) One might doubt this assumption because an infinitive marker cannot have focus stress. I assume with Zwicky that this fact follows from the inherent status of a leaner: an infinitive marker is phonologically too weak to stand alone even when it is focused. Remember that an infinitive marker cannot stand alone as a Fragment Answer, as illustrated in (3).
- 4) My informants judge that the acceptability of VPE marginally improves if the infinitive marker co-occurs with a negation.
- (i) a. ? For John to help Mary will make her happy while for Bill, as she expects, not to __ will make her sad
 b. ?? For John to help Mary will make her happy while for Bill, who is actually wanted, not to __ will make her sad.

The examples support the proposed phonological analysis though it is unclear why they are a little worse than the sentences in (21).

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5) This argument is very similar to that of Sato and Dobashi (2016), which accounts for the *That*-trace effect.

6) Zwicky argues that VPE in adverbial clause is not always ungrammatical. He presents the following example, which he argues is acceptable for some speakers.

(i) If you want to finish today, then you're going to have to work fast to ___.

(Zwicky (1981: 13)

The acceptability might be captured under the current proposal if the rightward movement of adjunct clauses is optional. However, I do not explain when such movement occurs. I leave this topic for future research.

7) The relevant distribution of Ellipsis has been syntactically analyzed under the condition like (i) which is brought from Richards (2003).

(i) An ellipsis site must be the complement of a head with a specifier.

I might have to compare the syntactic approaches with the proposed one. I leave this issue for future research.

8) The same distribution should be extended to the cases of NP-Ellipsis. However, my informants judge that there is no rescue effect in RNR contexts.

(i) a. *I read an interesting book about Syntax, and you read the ___.

b. *I read a/an, and you read the, interesting book about Syntax.

I believe that the ungrammaticality of (ib) comes from an independent factor. I leave this

issue for future research.

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