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문학석사 학위논문

The Syntax and Semantics of Fragments in English Echo Questions

영어 메아리 질문 조각문의 통사와 의미

2021 년 8 월

서울대학교 대학원

영어영문학과 영어학 전공

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Abstract

The Syntax and Semantics of Fragments in English Echo Questions

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The aim of the present study is to investigate the syntax and semantics of fragments in English echo questions. Sub-sentential phrases which have the same meaning and function as full sentential echo questions have not received much attention in previous literature. In the present thesis, I argue that these fragments are the results of a clausal ellipsis, and that an in-situ deletion analysis that excludes movement of a focused constituent to the periphery of a clause is required to derive the fragments.

With regard to the semantics of echo questions and echo fragments, following Beaver et al.'s (2017) analysis, I suggest the idea of incorporating the notion of QUD (Question Under Discussion; Roberts, 1996) into the focus-based accounts of the derivation of echo questions (Beck & Reis, 2018), in need of taking the effect of context into consideration. Also, I argue that an echo fragment has the same meaning as its corresponding full-fledged echo question, because the former is syntactically derived from the latter by means of an ellipsis at PF: Their meanings thus remain identical to each other.

In terms of the syntax of echo fragments, I first argue for an in-situ deletion approach (Griffiths et al. 2018, 2020). I show that the fragment of echo questions can present itself in various sizes including immovable XPs, which are not generally allowed to move; thereby arguing against the movement and deletion approach (Merchant, 2001, 2004, etc.). Then I propose that a syntactic identity condition is in need (Merchant, 2008a), by providing novel empirical examples that undermine the semantic identity condition. Lastly, I argue that implementing Büring's (2006) unrestricted vertical focus projection allows for massive fragments—the fragments consisting of a constituent bigger than a single narrowly focused constituent.

Keywords : ellipsis, echo question, syntactic identity condition, in-situ deletion, unrestricted focus projection

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1. Introduction

Fragmentary utterances or sub-sentential XPs can occur in the place of full sentential echo questions while carrying the same meaning and function. The speaker can echo the preceding utterance by repeating its particular part in question or replacing that part by a *wh*-phrase of the identical semantic type. In (1B), fragments *WHOM* and *DRACULA* both carry the same meaning and function with the fully uttered echo question (1B'); similarly, (2B) has the identical meaning and function with (2B'). (The capitalization indicates a phonological pitch accent and a focus they bear.)

(1) A: Tom invited Dracula.
B: WHOM/DRACULA?
B': Tom invited WHOM/DRACULA?

(2) A: Cleopatra ate chicken.
B: WHO/CLEOPATRA?
B': WHO/CLEOPATRA ate chicken?

Although ellipsis *does* occur in echo questions as above, it has not received much attention in the ellipsis literature. In this thesis, I argue that these fragments are the result of a clausal ellipsis instead of regarding them

as an irregular phenomenon lacking grammatical explanation, and investigate the syntax and semantics of these fragments. Henceforth, I refer to such fragments as *echo fragments*.

In terms of the semantics, I first discuss three different analyses of echo questions proposed in the literature: (i) the quotative approach, according to which an echo question is the result of copying a previous utterance (Janda, 1985), (ii) the extra functional projection approach, which postulates an extra complementizer only for echo questions (Sobin, 2010, among others), and (iii) the approach that utilizes focus and a covert operator (Beck & Reis, 2018, among others). I point out that these previous analyses pose challenges in capturing the effect of discourse context, which is a crucial part of the meaning of echo questions. I propose to incorporate the notion of Question-Under-Discussion (QUD, Roberts, 1996, 2012, among others) into Beck and Reis' (2018) focus semantic analysis of the meaning of echo questions, and account for the variance in constructing echo questions in terms of Beaver et al.'s (2017) analysis. Then, with an assumption that ellipsis is a PF phenomenon, I argue that the meaning of an echo fragment remains identical to its corresponding full-fledged echo question.

With regards to the syntax of echo fragments, I first review two main different approaches proposed in the literature. In the so-called Direct Interpretation approach, fragments like (1B) and (2B) are analyzed as forming an independent sentence alone and yielding an interpretation in terms of the contextually salient utterance such as (1A) and (2A) (Ginzburg & Sag, 2001;

Ginzburg & Cooper, 2004). In the other approach, which is called a structural approach, fragments are analyzed as the result of an ellipsis from the corresponding full-fledged sentence. To my knowledge, it was Griffiths, Güneş, and Lipták (2018, 2020) who brought attention this phenomenon for the first time. In the present thesis, following their in-situ deletion analysis (Griffiths et al., 2018, 2020), I provide more empirical evidence against the movement and deletion analysis (Merchant, 2001, 2004, etc.). Then, I point out that the crucial parts of the analysis of echo fragments remain unaddressed in their work; one is concerned with the licensing condition on ellipsis, i.e., the identity condition, and the other with the massive fragments. In this regard, I argue for the syntactic identity condition (Merchant, 2008a) on the basis of the novel empirical data, and account for the possibility of massive fragments in terms of Büring's (2006) unrestricted vertical focus projection.

The organization of this thesis is as follows. In Chapter 2, I present the properties of echo questions and echo fragments. In Chapter 3, various approaches to the derivation of echo questions are discussed. Then, I critically review the previous analyses of echo fragments: the direct interpretation analysis and the structural analysis. In Chapter, 4 I provide the proposal analysis of the syntax and semantics of fragments in echo questions. Chapter 5 presents the consequence of my analysis, which can embrace ellipsis in multiple echo questions, and some remaining issues. Chapter 6 concludes this thesis.

2. Phenomena: Echo questions and fragments

In this chapter, I first discuss the general properties of echo questions in comparison with standard questions, and then elaborate on the properties of echo fragments. I look into the relevant properties since the analysis of an ellipsis in echo questions will be proposed based on these properties.

2.1 Properties of echo questions

English echo questions have distinctive properties from standard questions. In this section, I first illustrate their form-related properties, and then move on to the discourse-related properties.

First, the most remarkable property of an English echo question is that its surface word order differs from a standard question. There is no subject-auxiliary inversion in echo questions, and a *wh*-phrase stays in situ in cases of echo *wh*-questions. In other words, it does not undergo movement. It appears in the base-generated position.[1] (4B) illustrates that the echo *wh*-

[1] Sobin (1990, 2010) divides echo *wh*-questions into two subtypes: pseudo echo *wh*-questions and syntactic echo *wh*-questions (*pseudo EQs* and *syntactic EQs* respectively, in his terms).

(i) A: Mary had tea with Cleopatra.
B: Mary had tea with WHOM? (syntactic echo *wh*-question)
B': WHO did Mary have tea with? (pseudo echo *wh*-question)

(ii) A: Did Mary have tea with Cleopatra?
B: Did Mary have tea with WHOM? (syntactic echo *wh*-question)
B': *WHO did Mary have tea with? (pseudo echo *wh*-question)
(Sobin, 2010, p. 132)

Pseudo echo *wh*-questions in (iB') are in the form of standard *wh*-questions but have a rising intonational contour (i.e., HH%). Pseudo echo *wh*-questions are only able to echo a

phrase is not fronted, and the subject-auxiliary inversion does not take place unlike its corresponding standard questions in (3).[2]

(3) a. Did Tom invite Dracula?

b. Who(m) did Tom invite?

(4) A: Tom invited Dracula.

B: Tom invited WHOM/DRACULA?

Despite staying in situ, a *wh*-phrase in echo questions can take root scope and be interpreted as a question requesting an answer. In standard *wh*-interrogatives, a *wh*-phrase undergoes raising to Spec, CP and consequently takes root scope. What is noteworthy is that the *wh*-phrase in echo questions is always bound to the root (= matrix) clause even though it never undergoes raising like a standard *wh*-phrase. Even when it is deeply embedded as in (5), it takes root scope.

declarative; it cannot echo (*wh*-)questions whereas syntactic echo *wh*-questions can, as in (ii). Due to its limited distribution, I focus on syntactic echo *wh*-questions which show peculiar in-situ property.

[2] One might point out that using *WHO* instead of *WHOM* sounds more natural since echo questions are normally uttered in a very colloquial context. I agree with this point to some degree; however, in order to avoid confusion as to which element of the preceding utterance gives rise to an echo question, I use accusative *WHOM* to refer to its accusative (object) correlate.

(5) A: Who said that Mary thinks that Max was having tea with Dracula?

B: Who said that Mary thinks that Max was having tea with WHOM?

A': *John. (as *John said that Mary thinks that ...*)

A'': Dracula.

(adapted from Sobin, 2010)

WHOM in (5B) takes root scope beyond two embedded clauses and is interpreted as a question as if it is in the matrix clause. The original *wh*-phrase *Who* loses its scope and thus, responding to B's utterance as in (5A') is infelicitous. The only felicitous response to (5B) is (5A'').

Due to its in-situ property, an echo *wh*-question is insensitive to island effects. As elaborated in (6-8b), a *wh*-phrase in standard *wh*-questions is not allowed to move out of an island. On the contrary, such island effects are not observed in echo questions, as illustrated in (6-8c) below:

(6) Relative clause island

a. The man [that kissed Dracula] is coming to dinner.

b. *Who is the man [that kissed *t*]$_{\text{island}}$ coming to dinner?

c. The man [that kissed WHOM] is coming to dinner?

(adapted from Griffiths et al., 2018)

(7) Conjunct island

a. John knows Jane ate [beans and beef Wellington].

b. *What does John know Jane ate [beans and *t*]$_{island}$?

c. John knows Jane ate [beans and WHAT]?

(8) Adjunct island

a. Mary left [after John met Dracula].

b. *Who did Mary leave [after John met *t*]$_{island}$?

c. Mary left [after John met WHOM]?

(adapted from Chernova, 2014)

The relative clause island in (6), and the conjunct island in (7), and the adjunct island in (8) all exhibit the same pattern with respect to the standard *wh*-questions and echo *wh*-questions. While the standard *wh*-questions in the b examples are ungrammatical with the *wh*-phrase extracted out of the islands, their corresponding echo questions in the c examples do not face such problems since the *wh*-phrases remain in situ within the islands.

The next property is that a constituent smaller than DP, even elements below the word level, can be replaced by a *wh*-phrase.[3] Beck and Reis (2018) note that echo *wh*-phrases generally substitute for constituent XPs.

[3] Sobin (2010) and Chernova (2014) use the term *partially wh-marked DPs* for an echo *wh*-phrase smaller than DP. The general form of *wh*-phrases, which substitutes for an entire DP, is termed as *fully wh-marked DP*.

(9) A: He tattoos boas.

B: *He WHAT boas?

B': He tattoos WHAT?

B'': He WHAT?

B''': WHAT?

(adapted from Beck & Reis, 2018)

(9B) is ungrammatical since the V *tattoos*, which has a non-phrasal status, is replaced by a *wh*-phrase. On the other hand, (9B') and (9B'') are grammatical because the echo *wh*-phrase replaces the phrasal-level categories, i.e. DP *boas* and VP *tattoos boas*. Even the entire clause can be echoed by a single *wh*-phrase as in (9B''').

Examples below further illustrate the distinct property of echo questions, which is different from standard questions.

(10) a. *Who the t_{who} asked for more spaghetti?

b. Who asked for more spaghetti?

(11) a. *What did he swim across the Monoga-t_{what} River?

b. What did he swim across?

(12) A: The Martians asked for more spaghetti.

B: The WHO asked for more spaghetti?

A': Martians.

(Sobin, 2010)

(13) A: He swam across the Monongahela River.

B: He swam across the Mononga-WHAT River?

(Artstein, 2002)

Constructing questions with the parts smaller than DP (i.e., NP or parts below the word level) is not allowed in standard *wh*-questions as in (10-11a). To make a grammatical question, the entire DP should be replaced by a *wh*-phrase as in (10-11b). The NP alone as in (10a) or the parts below the word level as in (11a) cannot be replaced by a *wh*-phrase in standard questions. In contrast, in the case of echo questions, these constructions are allowed as shown in (12B) and (13B). In (12B), the NP *Martians* without determiner *the* can be replaced by a *wh*-phrase. Even the parts below the word level (i.e., syllables) can be replaced by a *wh*-phrase in echo *wh*-questions. That is, a *wh*-phrase does not constitute a "syntactic object or even a morpheme" (Chernova, 2014). (13B) indicates that the speaker B requests a clarification for the parts below the word level with which he is not familiar.

The last crucial property of an echo question with regards to its form is that the part at issue (i.e., a *wh*-phrase) must bear a phonological accent and focus. Phonologically it has a particular intonation: the salient rise contour

consisting of a rising pitch accent (L+H*) on the echoing part and a high-rising boundary (HH%) (Erteschik-shir, 1986; Bartels, 1999; Merchant, 2001; Artstein, 2002; Beck & Reis, 2018). This is illustrated in (14).

(14) A: He made goulash for me.

B: He made WHAT/GOULASH for you?

L+H* HH%

More specifically, the echo *wh*-phrase is "narrowly" focused and requires main stress on its *wh*-part. Similarly, the part at issue (i.e., GOULASH) should be narrowly focused and stressed in cases of echo non-*wh*-questions. In standard *wh*-questions, the main stress of the *wh*-phrase falls on the syllable bearing lexical accent, which is always the last syllable in English and German. On the other hand, in cases of echo *wh*-questions, the exact *wh*-part, not the last syllable, should bear main stress. Since English lacks *wh*-phrases consisting of multiple syllables, Beck and Reis (2018) examine relevant *wh*-phrases in German, such as (15a) and (16a). In cases of English, the difference in bearing the obligatory main stress on the *wh*-phrase is captured in complex *wh*-phrases like *which NP*, as illustrated with *which subject* in (15b) and (16b). In each example, the part that bears main stress is capitalized.

(15) Main stress on the echo *wh*-phrase

a. Tom ging [WOhin / *woHIN]?

Tom went where

'Tom went WHERE?'

b. Tom teaches [WHICH subject / *which SUBject] ?

(16) Main stress on the standard *wh*-phrase

a. …, aber nicht [woHIN / *WOhin] er gegangen ist.

but not where he gone is

(I know that Tom went away,) 'but not where he went.'

b. (Tom is a teacher.) Which SUBject does he teach?

(Beck & Reis, 2018, p. 371)

The *wh*-phrase in the German example in (15a) bears the main stress on the exact *wh*-part *WO*, not on *hin*. In contrast, a standard *wh*-question in German such as (16a) bears its main stress on the last syllable *hin*. In English complex *wh*-phrases, the echo *wh*-phrase *which* is the only possible bearer of the main stress because non-*wh*-elements are not allowed to bear the main stress. This differs from the pattern of the main stress in standard *wh*-questions, which allows a non-*wh*-element such as *subject* in (16b) to bear the main stress as well, depending on the information structure. This *narrow focus* property can be recapitulated as below:

(17) ***Narrow focus*** on echo questions

Echo questions must receive a narrow focus and bear rising pitch accent (L+H*) on the echoing parts.

The effect of narrow focus on echo questions and its concomitant phonological pitch accent are crucial part in the analysis proposed in this thesis. The formal analysis of ellipsis in echo questions in terms of narrow focus will be presented in Chapter 4.

Now I will show the properties of echo questions regarding how they act in the discourse. It is well known that echo questions always echo the *immediately* preceding utterance. If some additional utterance interrupts the preceding utterance and the echo question, the echo question becomes infelicitous.

(18) A: Tom invited Dracula.
B: Tom invited WHOM/DRACULA?
B': An invitation—usually Tom is so stingy!
#Well, Tom invited WHOM/DRACULA?
(adapted from Beck & Reis, 2018)

In (18B'), an additional utterance *An invitation—usually Tom is so stingy!* is introduced between the preceding utterance and the echo question, which results in the awkwardness of using an echo question. Without this intervening utterance, (18B) functions as an echo question successfully.

The next property is concerned with the structure and the content of echo questions. According to some previous studies such as Janda (1985) and Adger (2003), an echo question is the mere repetition of the preceding sentence. According to their analysis, (19B) is the only possible way of echoing (19A).

(19) A: Cleopatra ate chicken.

B: WHO/CLEOPATRA ate chicken?

However, recent studies (Noh, 1998; Artstein, 2002; Sobin, 2010; Beck & Reis, 2018; Poschmann, 2018) have shown that echo questions can vary in their surface form.[4] For example, an echo question can have different voice (i.e., active and passive) from its preceding utterance. The preceding utterance with active voice can be echoed by an echo question with passive voice as in (20), and vice versa as in (21).

(20) A: Cleopatra ate chicken.

B: Chicken was eaten by WHOM/CLEOPATRA?

(21) A: Cleopatra was bitten by my dog.

B: Your dog bit WHOM/CLEOPATRA?

[4] The degree of variance in each study differs.

(20B) is an appropriate echo question showing incredulity against the agent of eating chicken, *Cleopatra*. Similarly, the active sentence (21B) is also appropriate to echo the passive preceding utterance (21A). Additional structural mismatches, such as internal argument alternation between the preceding utterance and the echo question, are also allowed, as in (22).

(22) A: He gave Cleopatra chocolate.
B: He gave chocolate to WHOM/CLEOPATRA?

Moreover, echo questions can vary even more in terms of the structure and content of the preceding utterance; they may not have the identical meaning to the preceding utterance. Beck and Reis (2018) note that echo questions can take "some" elements from the previous utterance and appear in a different structure.[5]

(23) A: I sent an invitation to Dracula.
B: You invited WHOM/DRACULA?

In (23B), not every lexical item from the preceding utterance is repeated. Echo questions do not have to be strictly identical to the preceding utterance.

[5] Poschmann (2018) provides more examples of echo questions having deviant forms from the preceding utterance. For further details refer to her work.

The last and important property of echo questions is that they "echo" a preceding utterance. The speaker uses echo questions in order to request a repetition of parts of an immediately preceding utterance that need clarification (Sobin, 1990, 2010; Noh, 1998; Bartels, 1999; Ginzburg & Sag, 2001; Artstein, 2002; Chernova, 2014; Beck & Reis, 2018; Poschmann, 2018, among others), and the cause for the clarification includes surprise (or incredulity), ignorance, and mishearing.[6] In other words, the speaker of echo questions considers what has been already *given* as *new*, and asks for context-given information.

(24) A: Tom invited Dracula.
B: Tom invited WHOM?
A': Dracula / *Cleopatra / *Ramesses.

[6] In Chernova (2014), she only focuses on echo questions that request for repetition of unheard parts (*unheard EQ*, in her term), and excludes echo questions expressing surprise by regarding the latter as a kind of exclamatives. She follows Fiengo's (2007) idea that questions arise from ignorance; that is, questions are uttered to request for reducing speaker's ignorance. However, in this study, I think of the extreme cases of unheard EQs as a request for mere repetition of the phonetic string rather than a linguistic construction. In the example below, the contents of the preceding utterance are severely impaired acoustically (or not heard at all). Such instances lack the contents to be echoed (or clarified); the preceding utterance itself barely exists.

(i) A: [~~He tattoos~~]$_{\text{mumble}}$ boas.
B: WHAT boas?

In (iB), a non-constituent sequence *He tattoos* is replaced by the *wh*-phrase *WHAT*. For the unheard cases like this, substituting for non-constituent XP is allowed unlike other echo questions discussed so far. I assume that echo questions uttered after the severely impaired utterances are the mere substitution for the string of unheard words, and this type of substitution has nothing to do with grammar.

In (24A'), only *Dracula* is a felicitous answer because it is context-given while *Cleopatra* and *Ramesses* are not. I consider this property as the function of echoing.

To summarize, echo questions exhibit the following distinct properties:

(25) Properties of echo questions

a. No subject-auxiliary inversion occurs.

b. An echoing part bears an accent and narrow focus.

c. Echo questions only echo the immediately preceding utterance.

d. The structure and content of echo questions are not strictly identical to the preceding utterance.

e. The speaker of echo questions requests clarification of the part in question as if it is not given in the context.

f. A *wh*-phrase stays in situ in echo *wh*-questions.

g. A *wh*-phrase always takes a root scope in echo *wh*-questions.

h. Echo *wh*-questions are insensitive to the island effect.

i. A *wh*-phrase can substitute for an element smaller than DP in echo *wh*-questions.

Most of these properties are also shown in echo fragments, which will be examined in the following section.

2.2 Properties of echo fragments

In section 2.2, properties of echo fragments are demonstrated. I first show that most of the properties of echo questions are also observed in echo fragments. After that, I demonstrate distinguishing properties of echo fragments.

2.2.1 Properties equivalent to echo questions

A fragment in echo questions expresses the same meaning as its corresponding full-fledged echo question, performing the same discourse function. This section discusses whether the properties of echo questions are also observed in echo fragments.

First, a *wh*-phrase in an embedded clause can take a root scope, as shown in (26B). Crucially, the fragment *WHOM* in (26B') also takes a root scope, expressing the same meaning and function.

(26) A: Who said that Mary thinks that Max was having tea with Dracula?
B: Who said that Mary thinks that Max was having tea with WHOM?
B': WHOM?

(repeated from (5))

Next, the island-insensitivity of echo questions is also found in echo fragments.

(27) Relative clause island

A: The man [that kissed Dracula]$_{island}$ is coming to dinner.

B: The man [that kissed WHOM] is coming to dinner?

B': WHOM?

(repeated from (6))

(28) Conjunct island

A: John knows Jane ate [beans and beef Wellington] $_{island}$?

B: John knows Jane ate [beans and WHAT]?

B': WHAT?

(repeated from (7))

(29) Adjunct island

A: Mary left [after John met Dracula]$_{island}$.

B: Mary left [after John met WHOM]?

B': WHOM?

(repeated from (8))

In all B' examples, just like the *wh*-phrase in echo questions, each fragment is referring to its correlate in A examples that occurs within the islands.

The next property of echo fragments is concerned with the morpho-syntactic status of the focused part. Like echo questions, an echo fragment can be realized as a form that is smaller than DP or even below the word level. This is illustrated in a full-fledged echo question in (30-31B) and its corresponding echo fragment in (30-31B').

(30) A: Bill is an orthodontist.

B: Bill is a WHAT-dontist?

B': WHAT-dontist?

(31) A: Bill is an orthodontist.

B: Bill is an ORTHOdontist?

B': ORTHO?

For every echo fragment, it also bears a rising pitch accent and narrow focus just like full-fledged echo questions, as in (32).

(32) A: Tom invited Dracula.

B: <u>WHOM/DRACULA</u>?

L+H*

Furthermore, we have seen that echo questions always echo the *immediately* preceding utterance. Similarly, a fragment in echo questions does not tolerate any interrupting utterances.

(33) A: Tom invited Dracula.

B: WHOM/DRACULA?

B': An invitation—usually Tom is so stingy!

#Well, WHOM/DRACULA?

(repeated from (18))

An echo fragment in (33B') becomes infelicitous due to the introduction of an additional utterance *An invitation—usually Tom is so stingy!* between the preceding utterance and an echo fragment. Without this intervening utterance, (33B) is felicitous.

Lastly, every echo fragment has an echo effect like its corresponding echo question. The speaker considers the narrowly focused part as not given in the context and requests a clarification for that part.

The examples investigated in this section indicate that an echo fragment has not only the same meaning but also the similar properties as the fully uttered echo questions. In the following section, the peculiar characteristics of echo fragments will be presented.

2.2.2 Peculiar properties of echo fragments

In this section, I discuss the properties of echo fragments that are not shown in echo questions: the intolerance of structural mismatches and the possibility of massive fragments.

2.2.2.1 Mismatches are not allowed

It is worth noting that an echo fragment is sharply distinguished from its corresponding full-fledged echo question in terms of its structural identity with a preceding utterance: While an echo question allows structural mismatches with its preceding utterance carrying the same meaning, an echo fragment does not, as illustrated below.

(34) A: Cleopatra ate chicken.
B: Chicken was eaten by WHOM/CLEOPATRA?
B': *by WHOM/CLEOPATRA?

(35) A: He gave Cleopatra chocolate.
B: He gave chocolate to WHOM/CLEOPATRA?
B': *to WHOM/CLEOPATRA?

(34-35B) illustrate that an echo question can be realized with a different structure from its preceding utterance in (34-35A). An active voice can be

echoed by a passive voice as in (34), and one variant of dative alternation can be echoed by the other variant as in (35B). In contrast, an echo fragment in (34-35B') does not allow for this structural mismatch.

Moreover, while an echo question can take some elements from the previous utterance and have a non-identical meaning and structure to it as in (36B), an echo fragment cannot be construed as having a different meaning from its preceding utterance, as in (36B').

(36) A: I sent an invitation to Dracula.
B: You invited WHOM/DRACULA?
B': *WHOM/DRACULA? (as *You invited WHOM/DRACULA?*)

Fragments in (36B') cannot express the same meaning as the echo question (36B), which has a deviant structure and meaning from the preceding utterance (36A). I will present more examples of similar patterns in Chapter 4 and argue for the syntactic identity condition on echo fragments.

2.2.2.2 Massive fragments

Griffiths et al. (2018) firstly note that a fragment in echo questions can present itself in various sizes. For example, the VP *invited WHOM/DRACULA* in (37B') has the same meaning as an echo fragment *WHOM/DRACULA* in (37B).

(37) A: Tom invited Dracula.

B: WHOM/DRACULA?

B': invited WHOM/DRACULA?

Similarly, all the fragments in (38B'-B''') have the same meaning as a fragment in (38B). The size of fragments can be extended even to the VP *ate beans and WHAT/BEEF WELLINGTON*, the biggest sub-sentential phrase.

(38) A: Jane ate beans and beef Wellington.

B: WHAT/BEEF WELLINGTON?

B': and WHAT/ BEEF WELLINGTON?

B'': beans and WHAT/BEEF WELLINGTON?

B''': ate beans and WHAT/BEEF WELLINGTON?

I use the term *massive fragment* for the remnant that is bigger than a single narrowly focused phrase. This peculiar phenomenon is not attested in other types of elliptical constructions. For example, massive fragments are not allowed in sluicing examples as in (39b) and (40B').

(39) a. Tom invited someone, but I don’t know who(m).

b. Tom invited someone, but I don’t know *invited who(m).

(40) A: Tom invited someone.

B: (Really?) Who(m)?

B': (Really?) *Invited who(m)?

Griffiths et al. (2018) also show that massive fragments can be extended beyond islands as in (41B") and even beyond a clause boundary, as in (41B'").

(41) A: Bill thinks that John spoke to the man that Pete introduced to Dracula.

B: Bill thinks that John spoke to the man that Pete introduced to WHOM/DRACULA?

B': WHOM/DRACULA?

B": man that Pete introduced to WHOM/DRACULA?

B'": that John spoke to the man that Pete introduced to WHOM/DRACULA?

I will discuss how massive fragments are licensed in Chapter 4 in terms of focus projection.

2.3 Looking ahead

In this Chapter, we have seen that echo fragments share a number of properties with echo questions. On the basis of this empirical fact, I will

develop a structural analysis, according to which an echo fragment is derived from its corresponding full-fledged echo question via an ellipsis operation. In Chapter 4, I provide a further piece of evidence for this clausal ellipsis analysis of echo fragments, and account for the two peculiar properties of echo fragments—i.e., the structural mismatch with a preceding utterance, and the massive fragments—in terms of the syntactic identity condition and the focus projection, respectively. Before that, in the following chapter, I review how echo questions and echo fragments have been analyzed in the literature.

3. Previous analyses and challenges

In Chapter 3, I critically review representative analyses of echo questions and echo fragments proposed in the previous literature. First, I examine the previous approaches to echo questions, presenting their key ideas and challenges. In the subsequent section, I investigate previous analyses of fragments in echo questions and point out their problems.

3.1 Previous analyses of echo questions

Various analyses have been proposed in the literature regarding the derivation of echo questions. It is worth examining them since my analysis argues that echo fragments are the results of an ellipsis process from the full-fledged echo questions. I mainly deal with examples of echo *wh*-questions for the discussion because they exhibit characteristics of echo questions more effectively.

According to the very traditional approach, echo questions are regarded as being derived by a copy-and-paste process (Janda, 1985). However, this quotative approach encounters serious problems for the cases where echo questions are not exactly identical to the preceding utterance. Given this problem, it has been argued that echo questions should be analyzed as a grammatically autonomous and independent construction. The relevant approaches can be divided into two types: one that posits an extra functional projection for echo questions (Sobin, 2010, among others), and the other that

makes use of focus and a covert operator (Beck & Reis, 2018, among others). I review these various approaches to echo questions in detail.

3.1.1 Quotative approach

By virtue of its name, an echo question was believed to merely echo or "quote" the previous utterance. In this sense, it simply repeats the form when echoing the preceding utterance. For instance, Janda (1985) argues that echo questions are the "phonetic copy" of the preceding utterance except for the part that is replaced by a *wh*-phrase..

(42) a. John likes WHOM?

b. For which *x*, *x* a continuous string of one or more syllables, did the last speaker say: "…*x*…"?

(Janda, 1985, recited from Sobin (2010))

This account, however, cannot explain the examples in which echo questions are not identical to the preceding utterance, such as the cases with structural mismatches. This strict quotative approach poses problems with various types of echo questions. Above all, adopting quotative approach brings about fundamental problems such as pronominal changes and agreement.

(43) A: I met Dracula.

B: You met WHOM?

B': *I met WHOM?

(44) A: The Martians are having chicken.

B: WHO is having chicken?

B': *WHO are having chicken?

If echo questions are derived by rigorously quoting the previous utterance, (43B') and (44B') should be grammatical constructions rather than (43B) and (44B). However, the first personal pronoun *I* and the second pronoun *you* should be interchanged depending on the speaker. Since a *wh*-phrase is singular in any situation in English, the inflection of the following verb must agree with it accordingly. Grammatical examples including these changes should be ruled out if echo *wh*-questions are derived by strictly quoting the previous utterance. In brief, the quotative approach fails to notice that echo questions are grammatically autonomous and independent.

3.1.2 Functional projection approach

Apart from the quotative approach, there have been several attempts to explain how echo questions are derived. One main approach is to stipulate the existence of a complementizer specific to echo questions (Sobin 1990, 2010; Escandell 2002; Chernova 2014). I give a brief introduction of Sobin's

analysis in this section. He assumes that the unique complementizer for echo questions, C_{EQ} in his term, exists and bears a different set of features from the standard complementizer for questions. $C_{(WH)}$ for standard *wh*-questions has the feature composition as in (45) and C_{EQ} for echo questions as in (46).

(45) $C_{(WH)}$ [Int, Q, *u*wh*]

(46) C_{EQ} [Int, *u*i-m]

(Sobin, 2010)

[Int] indicates an interpretable interrogative force feature in contrast to declaratives. [Q] triggers T-to-C movement in questions, and [*u*wh*] is a strong uninterpretable feature which demands movement of a *wh*-phrase to make it become interpretable. Following Chomsky's (2000) claim that *wh*-phrases bear an uninterpretable *wh* feature as [*u*wh:], Sobin assumes that *wh*-phrases that are uninterpretable need to be scope-valued in order to be interpreted as interrogatives. $C_{(WH)}$ assigns a scope value to a *wh*-phrase by assigning its own label as the requisite value for [*u*wh:], and binds it consequently. On the other hand, as shown in (46), C_{EQ} lacks such [Q] that triggers T-to-C movement and [*u*wh*] that triggers movement of *wh*-phrase. The feature [Int] indicates that C_{EQ} is also an interrogative. The other feature [*u*i-m], where *i-m* means interrogative-marking, forces C_{EQ} to work as a probe. An echo *wh*-phrase is an *i-m* marked expression bearing an

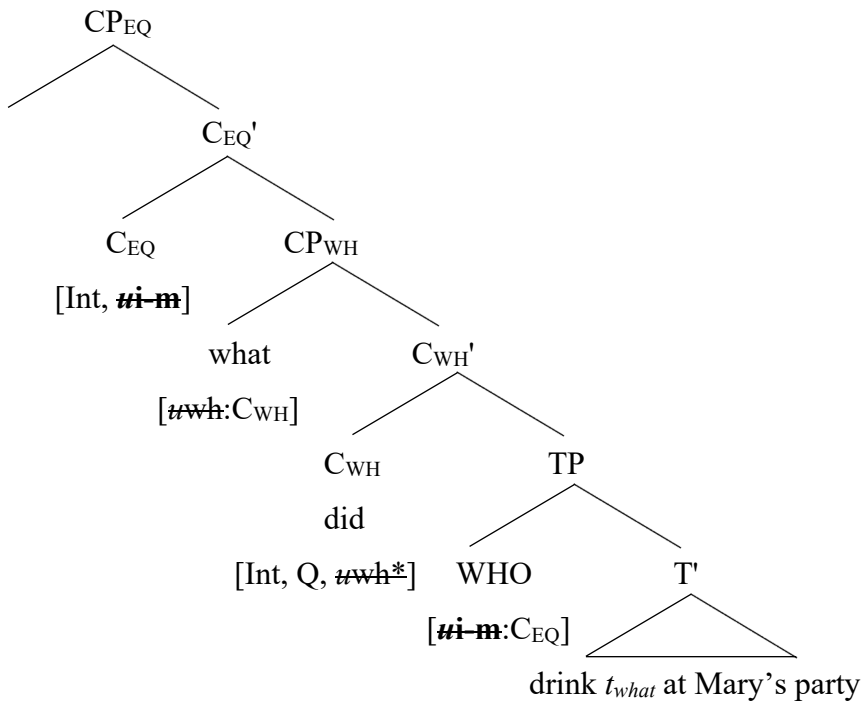
uninterpretable *i-m* feature as [*u*i-m:] and works as a goal. C_{EQ} assigns a scope value to its goals, any interrogative-marked expressions, by assigning its own label as the requisite value for [*u*i-m:].

The C_{EQ} layer should be projected above $C_{(WH)}$ layer since an echo question can have a standard question as a preceding utterance, like (47B). A simplified syntactic tree with a rough description of feature valuation is given in (48); unrelated details are omitted.

(47) A: What did Dracula drink at Mary's party?

B: What did WHO drink at Mary's party?

(48)



As shown in (48), two different complementizers C_{EQ} and C_{WH} are compatible in the same sentence. It is possible because they have distinct featural composition from one another: C_{WH} only values a scope of a constituent with [*u*wh:] while C_{EQ} values one with [*u*i-m:].[7] It should be noted that, since this line of study focuses more on the syntactic derivation of echo questions, how question meaning is acquired remains unaddressed.

3.1.3 Focus and covert operator approach

We have seen that the previous analyses, like the one proposed by Sobin (1990, 2010), stipulate an extra C head in order to account for the derivation of echo questions. In contrast, here the concept "focus" is used to account for the derivation of both the structure and meaning of echo questions (Artstein, 2002; Beck & Reis, 2018; Poschmann, 2018). Among them, Beck and Reis argue that narrow focus in (17), repeated here in (49), and a covert phrasal Q-operator play a crucial role in deriving echo questions.

[7] As pointed out in Ha (2010, p. 376), since each complementizer values different types of *wh*-phrases, it seems possible that two *wh*-phrases can be answered at the same time. If it is on the right track, (iB) below can be answered as (iA") rather than (iA') because two *wh*-phrases *what* and *WHO* get a scope value independently. However, it is obvious that (iA") is ungrammatical.

(i) A: What did Dracula drink at Mary's party?
B: What did WHO drink at Mary's party?
A': Dracula.
A": *Dracula drank wine.

Presumably, this comes from the fact that C_{EQ} takes a higher scope than C_{WH}, which causes C_{WH} to lose its root scope effect in the sense of Baker (1970) (Sobin, 2010; Chernova, 2014).

(49) ***Narrow focus*** on echo questions

Echo questions must receive a narrow focus and bear rising pitch accent (L+H*) on the echoing parts.

They assume that every *wh*-phrase contains a covert Q-operator, and it is "directly responsible for deriving a question meaning" (p. 389). In cases of echo *wh*-questions, this covert Q-operator is phrasal while standard *wh*-questions employ a clausal Q-operator. The difference is illustrated in (50).

(50) a. [$_{CP}$ Q… [$_{whP}$… : standard *wh*-questions

b. [$_{CP}$ … [$_{whP}$ Q… : echo *wh*-questions

With an assumption that covert operators must become visible at some point of the derivation, Beck and Reis argue that the covert clausal Q operator for standard *wh*-questions becomes visible by the movement of a *wh*-phrase while the covert phrasal Q for echo *wh*-questions does so only when a *wh*-phrase gets a "narrow focus."[8] They also assume that a *wh*-phrase is a **non**-

[8] The authors slightly put aside the discussion about echo *wh*-questions having standard *wh*-questions as a previous utterance, such as (ia).

(i) a. What did WHO drink at Mary's party?
b. [$_{CP}$ Q … [$_{whP}$ Q …

In the fn.7, we have seen that in the approach that utilizes an extra functional projection above the standard CP, C$_{WH}$ loses its scope since C$_{EQ}$ takes a higher scope (e.g., Baker, 1970). A similar effect needs to be accounted for in the current system. I assume that when the *wh*-phrase gets a narrow focus, it overrides the scope of an existing *wh*-phrase and takes the root scope for some reason. I leave an accurate explication for future research.

syntactic operator if and only if the *wh*-part gets a narrow focus: While a standard *wh*-phrase is a syntactic operator that undergoes movement to the clause-initial position, an echo *wh*-phrase is not. The schema of echo questions containing the covert phrasal Q-operator is illustrated in (51B). For the simplicity of the description, I will omit Q-operators in the subsequent examples and indicate them when needed.

(51) A: Tom invited Dracula.

B: Tom invited $[_{wh\text{P}}$ Q WHOM$]_{\text{F}}$?

The phrasal Q-operator produces the meaning of echo *wh*-questions by means of the alternatives which are evoked by focus semantic value based on Rooth (1992a) and delimited by the narrow focus on *wh*-part. Beck and Reis attempt to account for why a *wh*-phrase in echo questions does not undergo movement and how question meaning is acquired. [9] More relevant

[9] Ha (2010) also proposes a similar analysis for echo *wh*-questions in that a covert Q-morpheme is attached to an echo *wh*-phrase (*silent Q-morpheme* Q_{EQ} in his term) based on Den Dikken's (2003) morpho-syntactic analysis of *wh*-movement.

(i) a. **Wat** is er gebeurd?
what is there happened
'What happened?'

b. Er is **wat** gebeurd.
there is what happened
'Something happened.'

c. Is er **wat** gebeurd?
is there what happened?
'Did something happen?

d. Er is **WAT** gebeurd?

explanation on the semantics of echo questions will be dealt with in Chapter 4, in which I point out some limitations of their analysis and strengthen it by adopting the notion of Question-Under-Discussion.

So far in this section, we haven seen various approaches to explain the derivation of echo questions. First, the strict quotative approach is not adequate to explain echo questions because echo questions are autonomous grammatical constructions. The next approach resorts to an extra functional projection having a complementizer C_{EQ} which has different feature composition to the complementizer of standard questions, $C_{(WH)}$. It focuses on how echo questions are derived syntactically. In contrast, the approach that precludes an extra complementizer utilizes a narrow focus and a covert operator in accounting for the structure and meaning of echo questions. For the present study, I follow the latter approach because it addresses both the

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there is what happened?
'WHAT happened?

Den Dikken shows that the same word *wat* 'what' in Dutch behaves differently in each context: a standard *wh*-question in (ia), a *wh*-indefinite in (ib) and (ic), and an echo *wh*-question as in (id). Based on this observation, he argues that *wat* in different use has different morphological feature composition (i.e., Q-morpheme), which is silent. Ha (2010) adopts this approach for English and names a silent Q-morpheme for echo *wh*-questions Q_{EQ}, as below.

(ii) a. Tom bought WHAT?
b. Tom bought [$_{DP}$ Q_{EQ} WHAT]?

It should be noted that the feature agreement of a silent morpheme Q_{EQ} and a *wh*-phrase *WHAT* takes place DP-internally as in (iib). I assume that the silent Q-morpheme approach proposed by Ha (2010) is in the same line with the covert phrasal Q-operator approach proposed by Beck and Reis (2018).

structure and the meaning of echo questions by utilizing the focus that every echo question obviously bears.[10]

3.2 Previous analyses of echo fragments

In section 3.2, I discuss two different approaches to the fragments in echo questions proposed in the literature: the so-called direct interpretation analysis and the structural analysis. Their theoretical and empirical

[10] None of the aforementioned approaches deal with echo questions having *wh*-phrases in sub-word level.

(i) A: Bill is an orthodontist.
B: Bill is a WHAT-dontist?

In this case, the *wh*-phrase substitutes for the elements below the word level (i.e., syllables). In Beck and Reis (2018), they ascribe this peculiarity to the strict quotative condition; that is, sub-word level echo questions should be identical to the preceding utterance except for the *wh*-part. Meanwhile, Artstein (2002) explains how the focus of the *wh*-phrase below the word level is realized and interpreted as questions in terms of *phonological decomposition*, which is a "process that assigns denotations to the focused and unfocused word parts: a focused part denotes its own sound and the rest of the word denotes a function from sounds to word meanings" (Artstein, 2002, p. 103).

(ii) a. $[[\text{WHAT}_F]]_{Alt}$
= D_e (the entire domain of meanings matching in the semantic type).

b. $[[\text{dontist}_F]]_{Alt} = [[\text{dontist}_F]]_o$
= the function that, for each sound β, yields the meaning of the word βdontis$t$

c. $[[\text{WHAT-dontist}_F]]_{Alt}$
= $\{[[\text{dontist}]]_o([[\text{ortho}]]_o), [[\text{dontist}]]_o([[\text{perio}]]_o), \ldots\}$
= $\{[[\text{orthodontist}]]_o, [[\text{periodontist}]]_o, \ldots\}$

(ii) demonstrates the simplified process of deriving the alternatives of the word *WHAT-dontist*. Appealing to Roothean alternative semantics, (iic) denotes the set of all meanings of the words that end in *-dontist*. In this analysis, the meaning of a word part relies on its (phonological) form. For more thorough examination, see Artstein (2002).

characteristics will be examined, followed by the potential challenges and aspects for which they have not fully accounted.

3.2.1 Direct interpretation analysis (HPSG)

This section introduces an analysis of fragments in English echo questions from the direct interpretation perspective within the framework of the Head-driven Phrase Structure Grammar (HPSG), which has been discussed in Ginzburg and Sag (2001) and Ginzburg and Cooper (2004). This approach neither assumes a deletion operation from a full-fledged sentence nor posits a covert pronominal for unpronounced parts. Rather, the main focus of this approach is to explicate how the meaning of a fragment XP is contextually resolved despite not having a covert (or unpronounced) syntactic structure. Notably, Ginzburg and Sag (2001) make central use of the notion QUD (Question Under Discussion; Roberts, 1996).

In what follows, I briefly demonstrate Ginzburg and Sag's (2001) analysis of echo fragments (*reprise sluice* in their term).[11] For example, a fragment (52B) can be analyzed as follows:

[11] In this literature, the term "reprise question and fragment" are used as a cover term for utterances which are *reactive* to the previous utterance. Echo questions and references questions are thus subtypes of reprise questions. There is a difference in use between them. Reference questions, as in (i), ask for clarification of the pronoun that the speaker is unaware of while echo questions request for repetition of the parts that the speaker considers as not given in the context.

(i) A: They are mad at Bustamente y Bacigalupo.
B: WHO is mad at Bustamente y Bacigalupo?

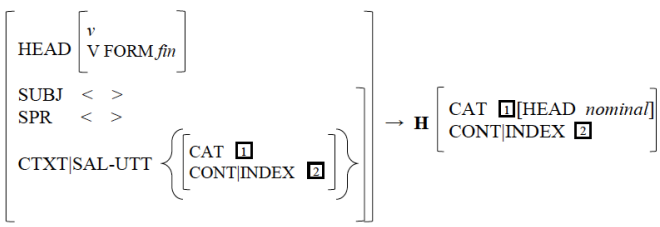
(Ginzburg&Sag, 2001, p. 255)

(52) A: Did Dracula leave?

B: WHO?

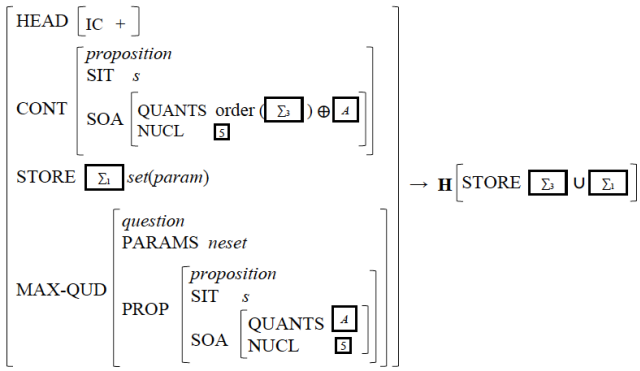
The fragment *WHO* is analyzed as a *dis-is-int-cl* (direct-in situ-interrogative-clause), a subtype of *hd-frag-ph* (headed-fragment-phrase) and *inter-cl* (interrogative-clause). The head daughter of this construction is a *decl-frag-cl* (declarative-fragment-clause), a subtype of *decl-cl* (declarative-clause). This type hierarchy indicates that the single nominal phrase *WHO* can stand alone being treated as a clause. The constraints for *hd-frag-ph* and *decl-frag-cl* are given as in (53) and (54).

(53) *hd-frag-ph*:



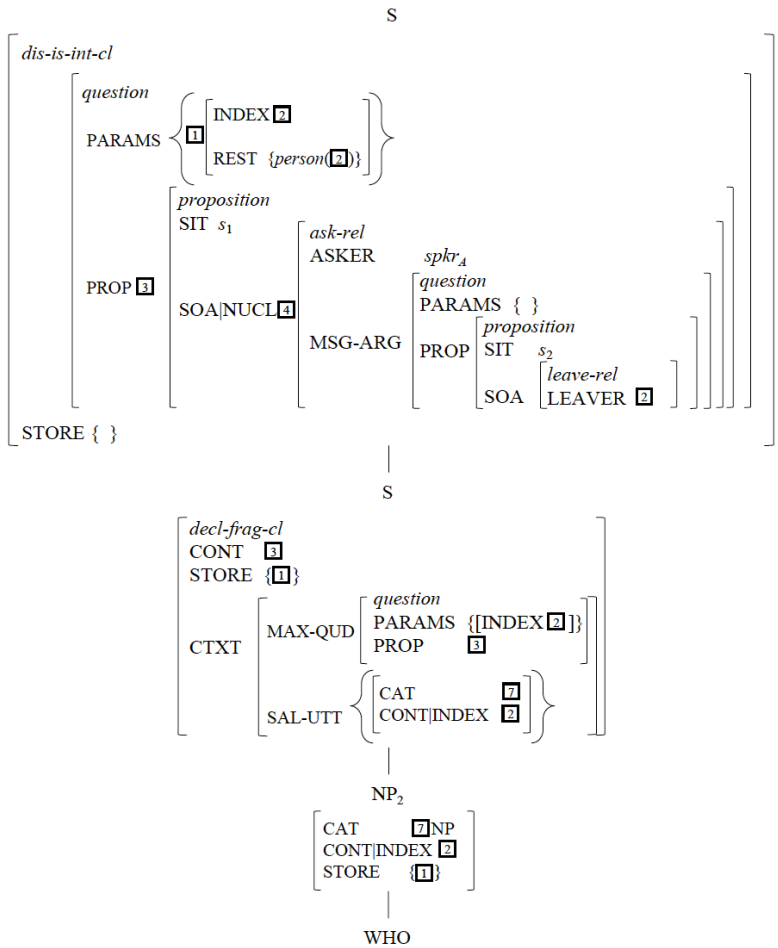
The constraint in (53) ensures that the head daughter's category, which is confined to *nominal* (i.e., noun and preposition), is identical to that specified by the contextually provided SAL-UTT (SALIENT UTTERANCE). The mother's category is specified as a finite verb, which allows such phrases to stand alone as a clause.

(54) *decl-frag-cl*:



Next, the constraint in (54) indicates that the content of the phrase is a proposition that is constructed mostly from the contextually salient question. It also ensures that if the head daughter contributes a parameter to the store due to the presence of a *wh*-phrase, that parameter remains stored as indicated by the inclusion in the mother's STORE value. With these constraints in mind, consider how the echo fragment in (52B) is analyzed.

(55) The feature structure of (52B)



For the contextual structuring, Ginzburg and Sag assume that CTXT (CONTEXT) attribute has two additional attributes: MAX-QUD (MAXIMAL QUD) and SAL-UTT, built upon Roberts (1996) about how dialogue is comprised. MAX-QUD represents the question currently under discussion, and SAL-UTT the (sub)utterance which receives widest scope within MAX-QUD. Upon uttering echo fragments (or echo questions), the speaker coerces the meaning of the preceding utterance into a clarification by

utilizing the partial information he possesses about the context. Regarding this, the latter attribute SAL-UTT is the constituent that needs to be clarified. Semantically, the *wh*-phrase is required to be coindexed with the phrase in SAL-UTT, which is indicated by the same numeral tag of CONT(ent)|INDEX. Syntactically, the categorial parallelism between the *wh*-phrase and its correlate is indicated by the same numeral tag of CAT(egory).

In addition to SAL-UTT, MAX-QUD plays a crucial role in resolving the echo fragments. Since the speaker of echo fragments requests a clarification of some elements of the preceding utterance, the speaker's context is inclined to have echo questions as "maximal in QUD in the immediate aftermath of an utterance" (Ginzburg & Sag, 2001, p. 316). Note that in (55), since the speech-act entailed by the speaker A's utterance is asking, this illocutionary relation is specified as *ask-rel* in its CONT value. Thus, one possible contextual background for B's utterance above is *Who$_i$ are you asking if i left*, which is introduced as MAX-QUD. Consequently, the fragment *WHO* now has the same meaning with the entire echo question *Did WHO leave?*, and this is indicated by the same numeral tag between the PROP(osition) of the entire clause and that of MAX-QUD. With SAL-UTT and MAX-QUD, the meaning of the missing (or elided) part is successfully recovered.

Even though the direct interpretation approach does not assume any unpronounced underlying structure for the elliptical constructions, I argue that, from the structural perspective, their central notion of MAX-QUD and

SAL-UTT fundamentally makes the same prediction as the identity condition on ellipsis in echo questions I propose in Chapter 4.

3.2.2 Structural analysis

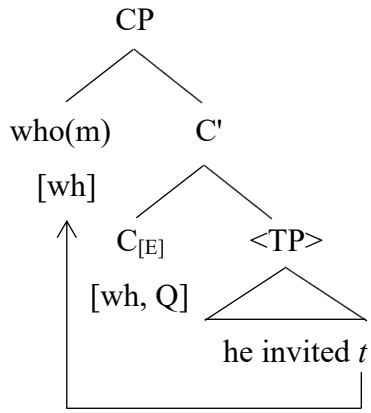
In the last section, we have seen how echo fragments have been dealt with in the direct interpretation analysis. In this section, I discuss the analysis of echo fragments from the structural perspective, which assumes that fragments are the result of an ellipsis process from the corresponding full-fledged sentences. I first examine the prevalent movement and deletion approach (henceforth, MDA) to clausal ellipsis proposed by Merchant (2001, 2004, etc.), and then the alternative in-situ deletion approach proposed by Griffith et al. (2018, 2020).

3.2.2.1 Movement and deletion approach

Merchant proposes the movement and deletion approach to analyze clausal ellipsis phenomena such as sluicing and fragment answers. According to this approach, a sluicing example such as (56) is analyzed as in (57). Angle brackets < > indicate an elided phrase.

(56) Tom invited someone, but I don't know who(m) ~~<he invited *t*>~~.

(57)



(adapted from Merchant, 2004, p. 670)

The sluiced example (56) has the structure of (57), where a complementizer C bears the E feature that licenses the deletion of its complement. The E feature of sluicing consists of uninterpretable strong features [*u*wh*, *u*Q*], which need to be checked to become interpretable.[12] The head that has the matching features is a C with [wh, Q], as illustrated above. This indicates that C is the only head bearing relevant features and having the ability to license the ellipsis of its complement (Lobeck, 1995; Merchant, 2001). The sluiced *wh*-phrase must undergo raising to satisfy the [wh] feature of C, and is not affected by deletion because what undergoes deletion is a complement of $C_{[E]}$, namely TP.

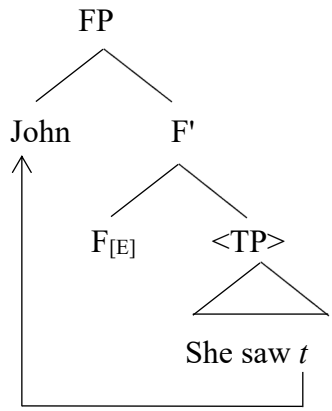
In similar fashion, Merchant analyzes a fragment answer like (58) via MDA, which is said to have a structure of (59).

[12] The *-marker indicates that it is a strong feature which requires its "checking in a local (head-to-head, here) phrase-structural relation" (Merchant, 2004, p. 671).

(58) A: Who did she see?

B: John ~~<She saw *t*>.~~

(59)



(Merchant, 2004, p. 675)

Fragment answer is a non-sentential XP that responds to a *wh*-question. In the structure above, the fragment DP *John* moves to a specifier position of a functional projection, FP. The functional head notated as F bears the E feature consisting of [*u*F*]. Similar to the case of sluicing, this E feature forces its complement to be deleted.

Merchant himself does not deal with echo fragments, but simply suggests that echo fragments are different from sluicing in that they do not allow swiping, an inversion of a sluiced *wh*-phrase with a preposition. In Chapter 4, I investigate the possible problems that can arise when we implement the MDA, thereby arguing that MDA cannot be extended to echo fragments.

3.2.2.2 In-situ deletion approach

As one can guess from the previous section, there is not much literature on echo fragments from the structural (or transformational) perspective. To my knowledge, Griffiths et al.'s (2018, 2020) recent work is the only analysis (*reprise fragments*, in their term). By demonstrating the connectivity effects, they consider the phenomenon at issue as a clausal ellipsis.

On the basis of Merchant's (2004) observation that standard fragments should be *wh*-movable phrases in that they can undergo A'-movement, Griffiths et al. argue that English reprise fragments should be treated differently since they can consist of *wh*-**im**movable phrases, including fragments smaller than DP and massive fragments.[13] (They assume that their analysis can cover both fragments which include a *wh*-phrase and those not).

(60) a. Standard context

A: A psycholinguist just passed by.

B: *No, [$_{\text{Prefix}}$ neuro].

b. Reprise context

A: John's a neurophysiologist now.

[13] *Wh-movable* phrases consist of AdvP, AP, CP, DP, and PP. For example, (iB) shows that an adverbial phrase *frequently* is movable, and the fragment answer is derived via movement and deletion approach consequently.

(i) A: How often does she swim?
B: Frequently. <~~she swims *t*$_{frequently}$~~>

B: [$_{Prefix}$ NEURO]?

(61) a. Standard context

*[$_{DP}$ A company with a boss from where] will Macrosaft merge with?

b. Reprise context

A: I heard recently that Macrosaft will merge with a company with a boss from Vanuatu.

B: [$_{DP}$ A company with a boss from WHERE]?

A prefix such as *neuro*- in (60) and a massive DP including a *wh*-phrase as in (61) are not allowed to undergo movement in general; therefore, they cannot act as a standard fragment, which is derived from a movement and deletion approach proposed by Merchant. However, when the same fragments are used in reprise (or echoic) context, they can stand alone as a fragment, as in (60b) and (61b).

Based on this empirical data, they propose an in-situ deletion analysis for reprise fragments, which excludes movement of a focused phrase.

(62) [$_{CP}$ $H_{[E]}$ … X_{FOC} …] → [$_{CP\emptyset}$ … $X_{FOC\varphi}$ …]

(φ = phonological realization, ∅ = non-pronunciation)

(Griffiths et al., 2020, p. 7)

They posit a functional head which bears the E feature to license the deletion of clause CP. Presumably, the CP is the highest CP_{EQ} layer in Sobin's (2010) sense; Griffiths et al. (2018) adopt Sobin's extra CP layer approach as a derivational structure for echo questions. According to the in-situ deletion approach, the focused constituent (i.e., *wh*-phrase) does not undergo movement to the left periphery of the clause. Instead, the deletion directly applies to the clause; especially materials surrounding FOC-marked constituent are deleted as illustrated in (62). FOC, the focus of a sentence, is the highest F-marked constituent in the sentence, informally speaking.[14] In the appendix, they suggest an idea of utilizing Büring's (2006) *unrestricted vertical focus projection* to license FOC, according to which focus can be projected upward, which amounts to FOC, and this FOC becomes a massive fragment after the deletion. However, it needs to be accounted for that the ways in which the focus projection operates is not fully developed in their work.

Next, in Griffiths et al. (2018), they propose a reprise-specific QUD for the recoverability condition on reprise fragments. With an assumption that all ellipsis licensing questions in the QUD are syntactically generated, "there is no question *q* available in the QUD to license clausal ellipsis in a language L iff *q* is syntactically ill-formed in L" (Griffiths, 2019, p.4). Thus, standard fragments are licensed by standard (or typical) *q*s in the QUD while reprise

[14] Further details will be discussed in the proposal of Chapter 4.

fragments are licensed by reprise *q*s in the QUD.[15] According to their proposal, the meaning of (63B) is successfully recovered since it can be licensed by the underlined question *q* in the reprise QUD, (64).

(63) A: The rumor that Dracula is dead must be false.
B: WHO/DRACULA?

(64) Reprise QUD
{<u>The rumor that WHO is dead must be false?</u>, The rumor that Dracula is DEAD must be false?, …}

The licensing *q* in the reprise QUD is syntactically well-formed, obeying the grammatical rules which construct correct reprise questions in English. However, it is not clear how structural mismatches discussed in Chapter 4 can be treated with this approach.

In summary, it is obvious that Griffiths et al. (2018, 2020) shed a light on the idea of in-situ analysis of ellipsis in echo questions which has not drawn much attention in the literature. Nevertheless, their analysis is not fully developed yet in that the licensing condition such as identity condition and the procedure that allows massive fragments remain unaddressed. In Chapter

[15] For a more detailed account for in-situ deletion approach to (standard) fragment answers by utilizing QUD, refer to Griffiths (2019). With an assumption that only syntactically derived *q*s in the QUD can license clausal ellipsis, and a fragment does not undergo movement, the author accounts for the so-called *ellipsis repair* effect found in island constructions without resorting to such notion.

4, building on Griffiths et al. (2018, 2020), I propose the process of an ellipsis in echo questions and account for the peculiar behaviors of echo fragments.

4. My proposal

In this chapter, I propose an analysis of ellipsis in echo questions. In section 4.1, I first argue that Beck and Reis' (2018) analysis of the meaning of echo questions fails to capture the effect of context, which can be improved by the idea proposed in Beaver et al. (2017). Then, in section 4.2, I establish the process of ellipsis in echo questions in depth—the deletion operation, the identity condition, and the mechanism that allows massive fragments, building on Griffiths et al. (2018, 2020).

4.1 Semantics of echo questions and echo fragments

In this section, I first show how the meaning of echo questions is compositionally analyzed in Beck and Reis (2018). Then, I propose to incorporate the notion of QUD into their focus-based analysis, following Beaver et al.'s (2017) argument that QUD and focus alternatives can be taken into account simultaneously. With an assumption that ellipsis is PF phenomenon (Merchant, 2001, 2004; Griffiths et al., 2018, 2020, among others), it is worth investigating the meaning of an echo question since its meaning is sent to LF (Logical Form) after Spell-Out, and thus the meaning of the echo fragment and the echo question remains identical to each other.

4.1.1 Focus alternatives and meaning of echo questions

In Chapter 3, I have stated that I adopt the focus and covert operator approach to echo questions, following Beck and Reis (2018). To illustrate, see examples below, repeated from (51).

(65) A: Tom invited Dracula.

B: Tom invited [$_{wh\text{P}}$ Q WHOM]$_{\text{F}}$?

Beck and Reis argue that, through alternatives evoked by focus semantic value based on Rooth (1992a), the phrasal Q-operator produces the meaning of echo *wh*-questions. The narrow focus on *wh*-part then delimits the alternatives.[16] A significant difference from Roothean focus semantics is that Beck and Reis assume that a focused *wh*-phrase makes a particular alternative available. They argue that the narrow focus on a *wh*-phrase induces only two alternatives as in (66).

(66) The set of alternatives evoked by narrow focus on *wh*-part:

{question, deictic/anaphoric propositional counterpart}

[16] Rooth (1992a) proposes two-tiered system when accounting for semantic values of the focused element. The first tier is an ordinary semantic value described as $[[A]]^{o}$, which denotes its denotational meaning of the focused element, and the second is a focus semantic value described as $[[A]]^{F}$, which consists of alternatives to the focused element.

One is a question and the other is a proposition in which a deictic (or anaphoric) expression of the same type substitutes for the echo *wh*-phrase (Beck & Reis, 2018, p. 391). Echo *wh*-questions have the set of alternatives consisting of a question meaning and an anaphoric propositional meaning simultaneously. These two alternatives constitute a single alternative set, marked by { }. To illustrate, the narrow focus on *wh*-phrase *WHOM* in (65B) induces only two alternatives as in (67).

(67) Alternatives of an echo *wh*-question (65B):

{Who did Tom invite?, that Tom invited him}

The set of alternatives of (65B) consists of a question *Who did Tom invite?* and a proposition with a deictic counterpart of the *wh*-phrase *that Tom invited him*. The latter value explains the echo property that what echo questions ask for is not new information, but context-given information. The echo effect is realized by anaphorically picking up the salient alternative from the context.

In what follows, I elaborate on how the proposed set of limited alternatives such as (67) is derived in Beck and Reis' analysis. According to Roothean focus theory, when a certain element gets focus, it triggers the introduction of alternatives to the focused element into the semantics. To illustrate, DP *Dracula* in (68) is focused, which is notated as a subscript F. Its original semantic value is notated as $[[\ \ ]]_o$ and its focus semantic value is notated as $[[\ \ ]]_{Alt}$.

(68) Tom invited [Dracula]$_F$.

(69) a. [[Dracula$_F$]]$_o$ = Dracula

b. [[Dracula$_F$]]$_{Alt}$

= { Cleopatra, John, Beethoven, Mike, Mary, Jason, …}

= {x | $x \in D_e$ & x is a person }

c. [[Tom invited Dracula$_F$]]$_{Alt}$ = {λw. Tom invited$_w$ x | $x \in D_{e(context)}$}

The focused expression in (68) triggers alternatives that amount to the whole denotation domain with the same semantic type as shown in (69b). However, as shown in (69c), the alternative set that is actually involved in focus semantics is not the whole denotation domain, but rather its subset consisting of alternatives which are related to the context or "actively involved in focus semantics" in Beck and Reis' (2018) term.

They assume that when calculating a subset of alternatives, the narrow focus on *wh*-part makes a major contribution. The narrow focus gives rise to an exceptional alternative unlike alternatives triggered by regular (or non-narrow) focus. See the derivation of meaning of (65B) in detail.

(70) Original semantic value

a. [[WHOM$_F$]]$_o$ is undefined

b. [[Q WHOM$_F$]]$_o$ = [[WHOM$_F$]]$_{Alt}$ = { x | $x \in D_e$ & x is a person}

c. [[Tom invited [Q WHOM$_F$]]]$_o$ = {λw. Tom invited$_w$ x | x ∈ D$_e$}

= Who did Tom invite?

(71) Focus semantic value

a. [[WHOM$_F$]]$_{Alt}$ = { x | x ∈ D$_e$ & x is a person}

↓ narrow focus triggers particular deictic/anaphoric alternative

a'. The subset of [[WHOM$_F$]]$_{Alt}$

= {z} (z is the unique contextually relevant entity in D$_e$)

= {him}

b. [[Q WHOM$_F$]]$_{Alt}$ = {z} = {him}

c. [[Tom invited [Q WHOM$_F$]]]$_{Alt}$ = {λw. Tom invited$_w$ z}

= {Tom invited him}

(72) Alternatives of an echo *wh*-question (65B):

{Who did Tom invite?, that Tom invited him}

A *wh*-phrase itself is undefined (whether it is focused or not) as in (70a), and thus it has no other semantic role. What saves it from uninterpretability is a Q-operator, by raising its alternative semantic value to the level of ordinary meaning, as in (70b). Consequently, the original semantic value of an echo question in (65B) equals to the question meaning as in (70c). In terms of focus semantic value, the narrow focus on a *wh*-phrase triggers a particular alternative, an anaphoric/deictic counterpart of the *wh*-phrase having the same

semantic type as in (71a'). A deictic/anaphoric counterpart anaphorically refers to an element contextually salient. Compositionally we have (71c) as a focus semantic value for (65B). Accordingly, an echo question (65B) has a single alternative set of two alternatives as in (72).

Then, Beck and Reis account for how the peculiar alternative semantic value relates to the echo property which presupposes that the speaker of an echo question considers what has already given as new. They propose that the narrow focus at issue is evaluated as contrast. Since the speaker of an echo question denies accepting what has been uttered by the previous speaker, it is natural to assume that the focus in echo questions is contrastive (Noh, 1998).

(73) Contrast (Rooth, 1992a)

A constituent X contrasts with a constituent Y iff $[[Y]]_o \in [[X]]_{Alt}$ and $[[Y]]_o \neq [[X]]_o$

In the above example (65), two utterances are in contrast relation since they are in accord with the contrastive focus evaluation in (73).

(74) a. $[[(65A)]]_o \in [[(65B]]_{Alt}$ and $[[(65A)]]_o \neq [[(65B)]]_o$

b. Y ∈ {Tom invited him} and Y ≠ {Who did Tom invite?}

Here, the proposition expressed by (65A) is the constituent Y, which the focus in the echo question picks up by way of contrast. This means that an echo property can be characterized by a particular deictic/anaphoric alternative triggered by a narrow focus, satisfying the contrast focus evaluation as above. Instead of attributing an echo property to the pragmatics, Beck and Reis attempt to embody it into the semantics.

4.1.2 Focus alternatives and QUD

As shown in Chapter 2, an echo question is allowed to have non-identical meaning and structure with its preceding utterance. Although Beck and Reis compositionally analyze the meaning of echo questions, it has not been discussed in their work how different the meaning and structure of an echo question can be from its preceding utterance.

In this regard, I propose that the interaction between an echo question and the QUD (Ginzburg, 1996; Roberts, 1996, 2012; Ginzburg & Sag, 2001; Beaver et al., 2017) needs to be taken into consideration. The effect of context can be accommodated into the derivation of echo questions and their meaning with the notion of QUD, a partially structured set of questions that participants of the discourse are mutually committed to resolving at a given point in time. Beaver et al. (2017) propose an account for information structure realized by focus alternative semantics (e.g., Rooth, 1992a) in terms of QUD, based on the observation that such account is similar to that in

theories of question meaning. That is, the idea that focus is to be interpreted in terms of questions is a "natural extension" of a standard view of questions as denoting sets of alternatives (Beaver et al., 2017, p. 267).

(75) Context: A wedding photographer was taking pictures of Mary and her family.

A: Who smiled?

B: $[\text{Mary}]_F$ smiled.

QUD: {Who smiled?}

(*ibid*., p. 268)

In (75), since the speaker A's utterance is a question itself, it is introduced as a (explicit) *q* into the QUD (Ginzburg and Sag, 2001). The *q* in the QUD has a meaning like $\{\lambda w.\ x\ \text{smiled}_w \mid x \in D_{e(context)}\}$, in which the individuals are restricted into the members of Mary's family due to the context. And the speaker B's utterance has an alternative semantic meaning as $\{\lambda w.\ x\ \text{smiled}_w \mid x \in D_e\}$, which is a superset of the set of alternatives denoted by the QUD. In this case, the speaker B's utterance is *congruent* with its QUD, which indicates that it is (pragmatically) felicitous.

I follow this line of analysis and see whether it can be extended to echo questions. To illustrate, see the situation in (76) below.

(76) Context: Tomorrow is Tom's birthday. His best friends—Mary,

Jane, Merchant, Bill, and Ginzburg—thought that only they were invited. Well, Mary just recognizes that it is not true, and says:

A: Tom invited [Dracula]$_F$.

B: Tom invited [WHOM]$_F$?

QUD: {Who invited Dracula?, Who did Tom invite?, What did Tom do to Dracula?, …}

After the speaker A's utterance, as not being a question itself, not explicit but implicit *q*s are introduced into the QUD related to the context. In the given context in (76), it is clear what the most salient question is, since the original utterance that triggers QUD contains a focused item (Griffiths, 2019). As the object *Draula* in the original utterance (76A) is focused, the question *Who did Tom invite?* is construed as the most contextually salient among other *q*s in the QUD. The speaker B's utterance is then congruent with this QUD because the alternatives of (76B) consisting of {Who did Tom invite?, that Tom invited him}, following Beck and Reis (2018), can be considered as a superset of the *q* in the QUD.

Now, let's see examples in (77), in which the structure and content of an echo question are not strictly identical to the preceding utterance.

(77) Context: Tomorrow is Tom's birthday. His best friends—Mary, Jane, Merchant, Bill, and Ginzburg—thought that only they were invited. Well, Mary just recognizes that it is not true, and says:

A: Tom sent an invitation to [Dracula]$_F$.

B: Tom invited [WHOM]$_F$?

QUD: {Who did Tom invite?, Who sent an invitation Dracula?,
Who did Tom send an invitation to?, What did Tom do?,
What did Tom send to Dracula?, …}

After the speaker A's utterance, implicit *q*s are introduced into the QUD related to the context. According to van der Sandt (1991), the information content of an utterance in a given context consists of the content of the proposition, its implicatures, and presuppositions, excluding all free inferences. Thus, the proposition *Tom invited Dracula* follows from the proposition uttered by the speaker A, and the relevant implicit *q* can be introduced to the QUD. Two questions—*Who did Tom invite?* and *Who did Tom send an invitation to?*—are salient in the context since Dracula is focused in the speaker A's utterance. The speaker B's utterance is congruent with a question *Who did Tom invite?* in the QUD because the alternatives of (77B) consisting of {Who did Tom invite?, that Tom invited him}, can be considered as a superset. In other words, (77B) is a felicitous echo question for the preceding utterance (77A).

An introduction of the notion of QUD accounts for the variance in constructing echo questions by taking the effect of context into consideration. Rather than resorting to a vague constraint indicating that echo questions can take up some content from the preceding utterance, utilizing QUD captures

the effect of context more systematically. By doing so, while following the focus alternative account proposed by Beck and Reis (2018), we can reinforce their proposal by underpinning the relation between focus and the QUD. Before we move on, it must be recalled that while echo questions can vary from their preceding utterances, this mismatch is not allowed for echo fragments, as discussed in Chapter 2. There seems to be a stricter constraint when licensing ellipsis in echo questions.

4.2 Syntax of fragments in echo questions

In section 4.2, I investigate the syntax of echo fragments. First, I discuss whether echo fragments are the result an ellipsis operation, by utilizing the connectivity effects. Next, I discuss the challenges that we can face when applying a movement and deletion approach to echo fragments, and argue for an in-situ deletion approach. Then, I provide examples that cannot be licensed by the semantic identity condition, thereby arguing that solely resorting to the semantic identity condition is not sufficient, and that the identity condition should be subject to the structure of the sentence—syntactic identity condition. Lastly, I discuss how massive fragments are allowed for echo fragments. I argue that the unrestricted vertical focus projection (Büring, 2006) and the relevant focus interpretation rules license massive fragments.

4.2.1 The connectivity effects

Before moving on to the analysis of echo fragments, it should first be discussed whether or not these fragments are the results of an ellipsis operation. Merchant (2001, 2004) makes use of connectivity effects in order to examine whether clausal ellipsis operation is really involved in sluicing and fragment answers. [17] In the same line as Merchant, I utilize the connectivity effects for echo fragments. First, the connectivity effect with respect to Case is provided.

(78) A: Did Dracula phone?

B: WHO / *WHOM?

[17] Merchant (2001) employs German examples to show the connectivity effect under sluicing, since English has relatively poor morphological Cases, as in (i) below. The verb *schmeicheln* 'flatter' assigns dative Case to its object, and *loben* 'praise' accusative Case. The sluiced *wh*-phrases in each example show that the morphological Case of the *wh*-phrase should be identical to that of its correlate.

(i) Case connectivity *under sluicing*

a. Er will jemandem schmeicheln, aber sie wissen nicht {*wer /*wen / wem}.
He wants someone-**DAT** flatter but they know not who-NOM/ACC/**DAT**
'He wants to flatter someone, but they don't know who.'

b. Er will jemanden loben, aber sie wissen nicht {*wer/ wen /*wem}.
He wants someone-**ACC** praise but they know not who-NOM/**ACC**/DAT
'He wants to praise someone, but they don't know who.'

(Merchant, 2001, p. 89)

Similarly, fragment answers in (iiB) show that DP with genitive Case *John's* should be used following its possessive correlate *whose*.

(ii) Case connectivity *under fragment answers*
A: Whose car did you take?
B: John's. / *John.

(Merchant, 2004, p. 678)

An echo fragment exhibits the connectivity effect as shown in (78B); only the nominative *WHO*, which has the same Case with its subject correlate *Dracula*, is grammatical.

A fragment from echo non-*wh*-questions in terms of Case marking also exhibits the connectivity effects, as in (79B).

(79) A: He phoned me.

B: HE / *HIM / *HIS?

The pronoun *HE* which has the same nominative Case as its subject correlate is only grammatical. An accusative *HIM* or possessive *HIS* is inappropriate to echo the correlate *he* in (79A).

In addition to the Case marking, the Binding Theory works as evidence showing connectivity effects. Since it is hard to capture the Binding Principles with *wh*-phrases, we need to resort to examples of echo non-*wh*-questions.

(80) A: John$_i$ will arrive in his$_i$ car.

B: HIS$_i$ / *JOHN$_i$'S?

B': John$_i$ will arrive in HIS$_i$ car?

B": *John$_i$ will arrive in JOHN$_i$'S car?

(adapted from Griffiths et al., 2018)

A fragment in (80B) shows the intolerance of violating Binding Principle C, which requires that a name (or R-expression) be free (i.e., not bound by any c-commanding noun/pronoun) anywhere. If (80B) is not derived from a full-fledged sentence, there is no reason for *JOHN'S* to be ungrammatical since *HIS* and *JOHN'S* refer to the same entity. This indicates that (80B) has the underlying sentence, such as (80B'), to which an ellipsis operation has implemented. In contrast, in (80B"), since *JOHN'S* is bound by the DP *John* that c-commands it, the sentence consequently violates Binding Principle C.

The examples showing connectivity effects in this section suggest that *clausal ellipsis* is involved in the syntactic derivation of echo fragments, similar to sluicing and fragment answers.[18] Taking this into consideration, the syntax of echo fragments is illustrated in the following sections.

4.2.2 The deletion operation

In section 4.2.2, I first provide examples of echo fragments which pose challenges to the movement and deletion approach. Then I defend an in-situ deletion approach built upon Griffiths et al.'s (2018, 2020) idea. In the course of discussion, new empirical findings will be presented.

[18] In the direct interpretation analysis (Ginzburg&Sag, 2001, for example), the categorial parallelism between the echoing expression and its correlate is indicated by specifying the identical tag of CAT(egory) feature.

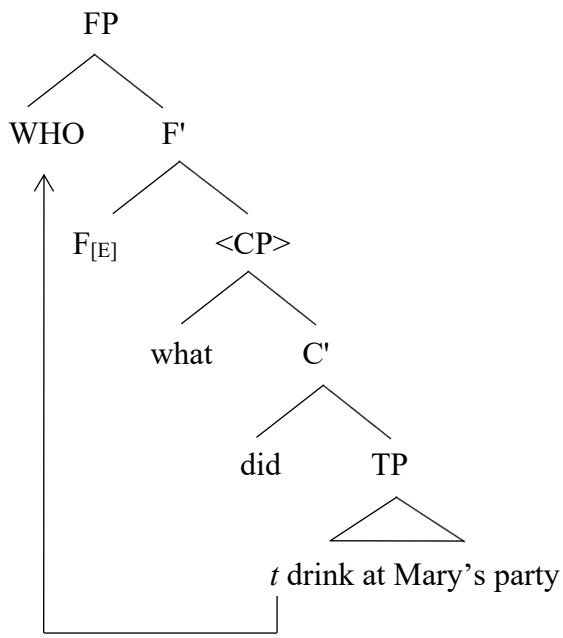
4.2.2.1 Challenges to movement and deletion approach

Implementing MDA to echo fragments may seem correct at the first glance. For example, an echo fragment in (81B), may have a putative structure like (82).

(81) A: What did Dracula drink at Mary's party?

B: WHO ~~<What did *t* drink at Mary's party>~~?

(82) Conjectural structure of (81B) via MDA



Since echo *wh*-phrases can have a correlate from *wh*-questions, a functional projection above CP is needed in order to make a room for the remnant to

escape from the deleting site.[19] The functional head F bears the E feature consisting of [*u*F*]. It allows its complement to be deleted just like the C head in sluicing and the F head in fragment answers. The difference is that CP is targeted for deletion in this case, not TP.

Additionally, an insensitivity of echo fragments to the island effect seems to support MDA. Earlier in Chapter 2, we have seen that echo *wh*-questions do not exhibit island effects since a *wh*-phrase does not undergo movement out of the island to the left periphery of CP. Likewise, an echo fragment does not show island effect, as in (83B). This island insensitivity reminds us of sluicing in that sluicing has an ameliorating effect of islands (Merchant, 2001), as shown in (84).

(83) Island insensitivity *under ellipsis in echo questions*

A: The man that kissed Dracula is coming to dinner.

B: [$_{FP}$ WHOM [$F_{[E]}$ ~~[$_{CP}$ **t* [$_{TP}$ the man that kissed **t* is coming to dinner]]]]~~?

(84) Island insensitivity *under sluicing*

[19] The configuration (82) assumes that there is no extra CP layer for echo questions. If we follow Sobin's (2010) extra C approach, it should have one more layer above CP.

(i) [$_{FP}$ WHO [$F_{[E]}$ [$_{CPEQ}$ [$_{CP}$ what … [$_{TP}$ drink at Mary's party]]]]]?

a. They want to hire someone who speaks a Balkan language, but I don't remember [$_{CP}$ which [$C_{[E]}$ [~~$_{IP}$ they want to hire someone who speaks *t~~]]].

b. *They want to hire someone who speaks a Balkan language, but I don't remember which they want to hire someone who speaks *t.

(Merchant, 2008b)

The embedded sentence (84b) in which a *wh*-phrase is extracted out of the (strong) island is ungrammatical due to the violation of the island effect.[20] This illicit movement leaves a *-marker accompanied by a trace, which indicates PF uninterpretability (Merchant, 2001). In contrast, the sluiced sentence (84a) is grammatical since an ellipsis operation deletes the *-marked trace, which is known as the *island repair effect*. When we follow the suggested MDA schema, the movement of an echo *wh*-phrase generated in islands is expected to leave *-markers accompanied by traces. The deletion operation may delete these *-marked traces, and thus the echo fragment becomes grammatical similar to the island repair effect.

So far, MDA appears to work successfully. When we look more thoroughly, however, we find MDA unsuitable. The following examination casts a doubt on the suggested mechanism. Examples discussed in the last

[20] Strong islands do not allow extraction of a *wh*-phrase out of them. For example, strong islands consist of relative clause island, adjunct island, coordinate construction island, etc.

section only include fragments consisting of a single constituent *wh*-phrase. However, echo fragments that end up being larger or even smaller pose problems. This point has been noted in Griffiths et al. (2018, 2020); here, I elaborate why MDA cannot be extended to ellipsis in echo questions.

What undergoes movement in cases of sluicing and fragment answers is an XP of which the movement is subject to the legitimacy of grammar. A *wh*-phrase in sluicing undergoes movement in order to check its feature such as [wh], and a constituent XP in fragment answers can undergo movement since moving those phrases at issue is allowed according to the grammar. In cases of echo fragments, however, a phrase that is impossible to move in general, such as prefixes, NP, a coordinate phrase, and TP, can be a remnant after the deletion. Representative examples having immovable phrases as echo fragments are given from (85) to (87), repeated from above.

(85) NP smaller than DP

A: The man that kissed Dracula is coming to dinner.

B: man that kissed WHOM?

(86) NP including a sub-word level *wh*-phrase

A: Bill is an orthodontist.

B: WHAT-dontist?

(87) Coordinate phrase

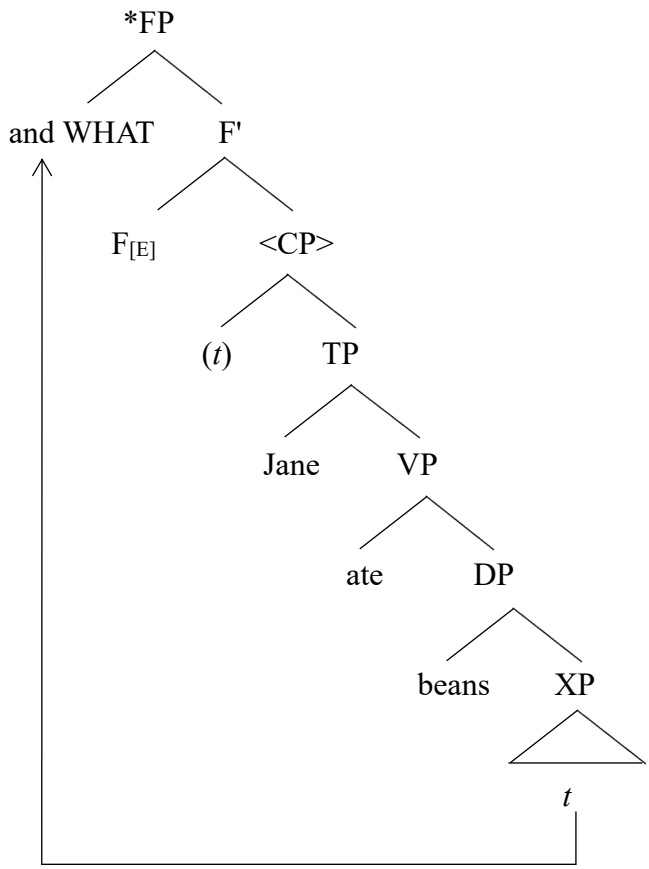
A: Jane ate beans and beef Wellington.

B: and WHAT?

An echo remnant consisting of an NP is permitted as in (85). It is not allowed to move NP alone and construct a standard *wh*-questions leaving a determiner behind. (86) exhibits the same problem: A phrase including a *wh*-phrase below the word level is never allowed to move in general. In similar fashion, a coordinate phrase, which consists of a coordinate conjunction *and* a DP *WHAT* as in (87), can be an echo fragment. It is not possible to move the coordinate phrase *and DP* in normal context. The configuration (88) below illustrates a putative movement of this coordinate phrase. An extra constraint should be stipulated in order for the coordinate phrase to move and escape from the ellipsis site; otherwise, this is an illicit derivation.[21]

[21] In this configuration, whether XP *and WHAT* moves via Spec, CP before reaching its final landing site is not crucial. Thus, I put a potential trace at Spec, CP in the parentheses.

(88) Conjectural structure of (87B) via MDA



In short, for MDA to successfully cover all of these instances, individual rules that allow the movement of aforementioned immovable phrases are required. We need to contrive additional constraints on movement which are restricted to each particular construction. Supposing movement of echo *wh*-phrases only to explain ellipsis is an ad hoc method. Instead, an alternative approach needs to be applied.

Moreover, I emphasize the point noted by Merchant (2001): Merchant himself suggests that sluicing and echo fragments (*fragment questions in echo*

functions, in his term) need to be distinguished due to their distinct syntactic behaviors. He refers to an inversion of a sluiced *wh*-phrase with a preposition (also known as *Swiping*, an acronym for Sluiced *Wh*-word Inversion with Prepositions in Northern Germanic) as evidence. Here I attempt to elaborate his suggestion which has not been examined in detail in his work.

(89) a. Lois was talking (to someone), but I don't know *who to*.

b. *Lois was talking (to someone), but I don't know *who to* he was talking.

c. Lois was talking (to someone), but I don't know *to who(m)* he was talking.

(adapted from Merchant, 2001)

(90) A: Lois was talking (to someone).

B: Really? Who to?

(*ibid*., p. 65)

In a sluicing example (89a), the sluiced *wh*-phrase *who* and a preposition *to* is inverted. This inversion is ungrammatical under full-sentential status as shown in (89b); the fully uttered sentence must exclude the inversion, so as to be grammatical as in (89c). Main-clause sluicing (or matrix sluicing) also

allows swiping as in (90B).[22] However, this inversion is now allowed for an echo fragment, as illustrated in (91). In cases of echo fragments, a *wh*-word and preposition cannot be inverted.

(91) A: Lois was talking to Dracula.
B: To WHO(M)?
B': *WHO(M) to?

In order to explain the swiping, scholars including van Craenenbroeck (2004, 2010) and Radford and Iwasaki (2015) have appealed to splitting up the CP layer into multiple projections. It should be noted that this cartographic approach does follow MDA and even requires extra movements of *wh*-phrase in CP projections. (92) shows a simplified derivation of the swiping example in (89a), in terms of van Craenenbroeck's (2004) double CP projections.

(92) a. [$_{TP}$ Lois was talking [$_{PP}$ [$_{P}$ to] [$_{whP}$ who]]
b. [$_{CP2}$ [$_{PP}$ [$_{P}$ to] [$_{whP}$ who]] [C2$_{[E]}$ [$_{TP}$ Lois was talking t_{PP}]]]
c. [$_{CP1}$ [$_{whP}$ who] [C1 [$_{CP2}$ [$_{PP}$ [$_{P}$ to] t_{whP}][C2$_{[E]}$ [$_{TP}$ Lois was talking t_{PP}]]]]]

[22] Main-clause sluicing, unlike embedded sluicing, is one kind of sluicing which appears in the matrix clause without a lexical item such as verb *know*. Main-clause sluicing and embedded sluicing exhibit almost the same behaviors with respect to syntax; that is, what cannot take place in embedded sluicing is also impossible in main-clause sluicing.

d. [$_{CP1}$ [$_{whP}$ who] [C1 [$_{CP2}$ [$_{PP}$ [$_{P}$ to] t_{whP}][C2$_{[E]}$ [~~$_{TP}$ Lois was talking t_{PP}~~]]]]]

(adapted from Radford & Iwasaki, 2015)

First, as in (92b), PP *to who* moves to the left edge of the lower CP, namely CP2, which is related to focus. Then *wh*P *who* moves to the edge of the higher CP, namely CP1, which is concerned with clause type. This secondary movement of *who* strands a preposition *to* in Spec, CP2, illustrated in (92c). Finally, TP undergoes sluicing, and the final outcome of the derivation is an inversion of preposition and a *wh*-phrase, *to who* as in (92d), which is different from *to who* in the full-fledged sentence (92a).[23]

One might be tempted to apply a similar approach to the fragment in echo questions. However, it incorrectly predicts that (91B') is grammatical, contrary to the fact. In addition to the evidence from massive fragments, the contrast with swiping also signals that Merchant's movement and deletion approach cannot be extended. Instead, I argue for an in-situ deletion approach.

4.2.2.2 In-situ deletion

I have pointed out potential problems of MDA when applied to echo fragments. In this section, I argue for an alternative approach, in-situ deletion,

[23] For more refined analyses of swiping in terms of cartographic approach, refer to van Craenenbroeck (2010) and Radford and Iwasaki (2015).

according to which the constituent having focus survives deletion in their base-generated position. The deletion targets an elliptical clause, and then the materials that are not focused, which are considered as *given*, are deaccented and deleted further as an extreme case (Tancredi, 1992; Rooth, 1992b; Chomsky & Lasnik, 1993; Abe, 2015, 2016; Ott & Struckmeier, 2016, Griffiths, 2019).

As we have seen earlier, in echo questions, the echoing part gets phonologically rising pitch accent (L+H*) and a narrow focus. By the nature of echo questions, materials except for the focused part (i.e., *wh*-phrase) are already *given* in the context, and the focused part is considered as *new* although its answer is already given in the context.[24] When materials are already given in the preceding utterance, they bear lower intonation subsequently. The given materials with this lower intonation "may optionally delete" (Chomsky & Lasnik, 1993, p. 564).

Abe (2015, 2016) and Griffiths (2019) argue for the similar idea for sluicing and fragment answers, according to which ellipsis targets a constituent CP, and the constituent marked with focus survives the deletion without appealing to movement of the focused constituent.[25] As we have

[24] There has been another concept of givenness introduced: Merchant's *e-givenness*. It indicates mutual entailment relation between antecedent clause and elliptical clause. Here in this study, *given* indicates a rather simple concept—already uttered in the immediately preceding sentence.

[25] Despite arguing for an in-situ deletion analysis, how the focused constituent is determined varies between Abe (2015, 2016) and Griffiths (2019).

already seen, Griffiths et al. (2020) also argues for an in-situ deletion and posits an extra functional head H to license the deletion of reprise fragments.

I argue that, in the course of ellipsis, there is no need to posit an extra head to license deletion. Since echo fragment only occurs immediately after the preceding utterance, no introduction of extra materials which undermine the givenness is allowed. The application of deletion is generalized below:

(93) In-situ deletion of ellipsis in echo questions

$[_{CP} \dots X[\dots [whP]_F \dots]_{FOC} \dots] \rightarrow [_{CP\emptyset} \dots X[_{\varphi} \dots [whP]_F \dots]_{FOC} \dots]$

φ = phonological realization, $\emptyset$ = non-pronunciation

$X_{\mathbf{FOC}}$ = FOC-marked constituent

(93) indicates that the deletion applies to the matrix clause, which can be extended to CP, and the actual deletion applies to the materials surrounding FOC. The FOC survives deletion and becomes a remnant.

It should be noted that in (93), I use CP and FOC-marking instead of TP and F-marking. The deletion should be applied to CP since echo questions can have standard (*wh*-)questions as their antecedent clause, as in (94). The idea of deleting CP beyond TP layer is not novel; it has been proposed in literature such as Abe (2015, 2016) and Bruening (2015).

(94) A: Who is the man that kissed Dracula?

B: ~~Who is the man that kissed~~ $[WHOM]_F$?

Next, FOC-marked constituent is necessary to allow the possibility of massive fragments, as in (95B).

(95) A: Who is the man that kissed Dracula?

B: ~~Who is the man~~ [kissed [WHOM]$_{F}$]$_{FOC}$?

So far, I have marked the remnant that survives deletion with a subscript F, indicating that it is a focused constituent. However, what actually survives deletion is the FOC-marked constituent, which is the highest F-marked constituent as stated in (96). A FOC-marked constituent must include a narrowly focused part (i.e., *wh*-phrase) that projects the focus up to it.

(96) FOC (Focus of a sentence)

An F-marked constituent not dominated by any other F-marked constituent.

(Selkirk, 1996)

More detailed account on FOC is given later in this chapter. In the following section, I discuss the identity condition concerned with the impossibility of structural mismatches in ellipsis of echo questions.

4.2.3 The identity condition

It has been controversial in the ellipsis literature whether ellipsis is a semantic phenomenon or a syntactic phenomenon. This controversy is directly connected to the question as to what kind of identity condition works on ellipsis. The identity condition is crucial in ellipsis in that it determines what is *given* and thus can be elided. In this section, I first briefly review Merchant's (2001) semantic identity condition, and then present problematic examples. I provide novel empirical findings that pose significant challenges to the semantic identity condition, which include structural mismatches between the antecedent and elliptical clause, such as voice alternation, internal argument alternation, and derivational nominal alternation. Accordingly, I argue that ellipsis is only allowed in echo questions that exhibit the same syntactic structure (and concomitant semantic meaning) except for the focused phrase.

4.2.3.1 Semantic identity is insufficient

Many researchers have argued that identity condition on ellipsis is semantic in nature (Merchant, 2001, 2004; Aelbrecht, 2010; Abe, 2015; 2016). Their fundamental idea is that the antecedent phrase and the elliptical phrase are semantically identical except for the focused phrase. What "semantically identical" indicates depends on theories, and among them, I introduce the renowned semantic identity condition proposed by Merchant

(2001), which appeals to the mutual entailment relation by means of *e-givenness*, as in (97). Relevant notions are also provided below.

(97) *e-given*ness

An expression E counts as e-given iff E has a salient antecedent A and, modulo ∃-type shifting,

(i) A entails F-clo(E), and

(ii) E entails F-clo(A)

(98) F(ocus)-closure

The F-closure of α, written F-clo(α), is the result of replacing F-marked parts of α with ∃-bound variables of the appropriate type (modulo ∃-type shifting).

(99) Focus condition of TP-ellipsis

A TP α can be deleted only if α is *e-given*.

An example of sluicing is illustrated below. It shows that TP_A and TP_E are in a mutual entailment relation because TP_A entails F-clo(TP_E) and vice versa as in (100b). Thus, TP_E is e-given and deletion can be operated consequently.

(100) a. [$_{TP_A}$Tom invited someone], but I don't know who [$_{TP_E}$~~Tom invited *t*~~].

b. F-clo(TP_A) = $\exists x$. Tom invited x

F-clo(TP_E) = $\exists x$. Tom invited x

If we apply this mechanism to ellipsis in echo questions, it seems that we get a similar result. I assume that the correlate in the antecedent is also focused because the correlate and focused constituent in echo questions are set into the contrast relation upon speaker B's uttering (Noh, 1998). Accordingly, the fragment in (101B) has a semantic formula of focus as in (102).

(101) A: Tom invited [Dracula]$_F$.

B: ~~Tom invited~~ [WHOM]$_F$?

(102) a. F-clo(TP_A) = $\exists x$. Tom invited x

b. F-clo(TP_E) = $\exists x$. Tom invited x

Considering this simple case, the semantic condition seems to be appropriate for ellipsis in echo questions in a similar way to sluicing examples. However, there exist instances that cannot be accounted for in terms of the semantic identity condition.

4.2.3.1.1 Voice alternation

Here, I provide examples of echo fragments showing structural mismatches (or alternations) between the antecedent and the elliptical clause, thereby arguing that the semantic identity is not enough to cover all instances of ellipsis in echo questions.

Fully uttered echo questions are allowed to have different voice from the preceding utterance. An active utterance can be echoed by a fully uttered passive echo question as in (103B); likely, a passive utterance is echoed by a fully uttered active echo question as in (104B).

(103) Active-passive alternation

A: Cleopatra ate chicken.

B: Chicken was eaten by WHOM?

B': ~~Chicken was eaten~~ *by WHOM?

B'': WHO ~~ate chicken~~?

(104) Passive-active alternation

A: Cleopatra was bitten by my dog.

B: Your dog bit WHOM?

B': ~~Your dog bit~~ *WHOM?

B'': WHO ~~was bitten by your dog~~?

The two full sentential clauses of (104B) and (105B), where voice mismatch is realized, are perfectly acceptable as echo questions. However, as shown in (103B'), the fragment *WHOM* accompanied by a preposition *by* signaling passive voice, is ungrammatical.[26] On the other hand, the fragment *WHO* in (103B") which has a nominative Case identical to its correlate *Cleopatra* is appropriate. In similar fashion, the fragment *WHOM* in (104B') which carries an accusative Case, is illicit *WHO* in while (104B") having a nominative Case is licit. Since active and passive clauses are truth-conditionally identical or "mutually entailing, and allow for the relevant inferences" (Merchant, 2013, p. 10), it is puzzling why voice alternation is not allowed under ellipsis if we resort to the semantic identity condition.

4.2.3.1.2 Internal argument alternation

Along with the voice mismatch, the impossibility of alternation in internal arguments also poses a problem for the semantic identity. Internal argument alternation takes place in sentences where there exist more than two internal arguments for one predicate: the direct object and prepositional (or oblique) objects. The alternation between oblique dative and double object construction, including 3-place predicates such as *serve*, *pass*, *give*, *buy*, *make*, etc., is a representative of this type. Internal argument alternation is

[26] I found that Griffiths et al. (2020) also independently make an observation with respect to voice mismatch and internal argument alternation.

allowed in full sentential echo questions in the same way as voice alternation. Relevant examples are given below:

(105) *give*

a. He gave Cleopatra chocolate.

b. He gave chocolate to Cleopatra.

buy

a. He bought Cleopatra a car.

b. He bought a car for Cleopatra.

The verb *give* and *buy* are typical three predicate verbs that allow dative alternation as shown in (105). The two alternants, a and b, have the same meaning but different surface forms.[27] In full-fledged echo questions, one

[27] Some research such as Krifka (1999) and Pinker (1989) argues that two variants of dative alternation have different but related meanings. For example, each variant of the verb *give* in (i) has the corresponding meaning as in (ii), indicating that the meaning slightly differs from each other.

(i) a. Martha gave an apple to Myrna.
b. Martha gave Myrna an apple.
(Hovav&Levin, 2008)

(ii) a. Martha CAUSES an apple TO GO TO Myrna.
b. Martha CAUSES Myrna TO HAVE an apple.
(adapted from Krifka, 1999; following Pinker, 1989)

The oblique dative form as in (ia) expresses caused 'motion' while the double object construction as in (ib) expresses caused 'possession'. However, I assume that the truth-conditional meaning is identical between two variants, and the slight difference in meaning is obtained via other mechanisms such as implicature. See relevant studies for further discussion.

variant can be echoed by the other as in B examples of (106). In cases of echo fragments, however, if one alternant occurs in the antecedent, the same alternant should be uttered as in B" examples. Otherwise, ellipsis cannot be licensed. The antecedent and elliptical clauses should have the identical alternants in order for the deletion applies.[28]

(106) *give*

A: He gave Cleopatra chocolate.

B: He gave chocolate to WHOM?

B': ~~He gave chocolate~~ *to WHOM?

B": ~~He gave~~ WHOM ~~chocolate~~?

buy

A: He bought Cleopatra a car.

B: He bought a car for WHOM?

B': ~~He bought a car~~ ?*for WHOM?

B": ~~He bought~~ WHOM ~~a car~~?

[28] Such alternation is not allowed in cases of sluicing either. Only the identical variant is grammatical as in (ib) and (iib).

(i) *give*
a. He gave someone chocolate, but I don't know who(m).
b. *He gave someone chocolate, but I don't know to who(m).

(ii) *buy*
a. He bought someone a car, but I don't know who(m).
b. *He bought someone a car, but I don't know for who(m).

This point is reinforced by the relevant examples in (107) below in which the verb *embroider* is used. The verb *embroider*, as well as *issue* and *provide*, are known to have object alternations with two different prepositional phrases. Such alternation is not allowed under ellipsis in echo questions as in (108).[29]

(107) a. They embroidered the American flag with peace signs.

b. They embroidered peace signs on the American flag.

(108) A: They embroidered the American flag with peace signs.

B: They embroidered peace signs on WHAT?

B': ~~They embroidered peace signs~~ *on WHAT?

B": ~~They embroidered~~ WHAT ~~with peace signs~~?

(adapted from Merchant, 2008a)

The fragment *on WHAT* in (108B) is not allowed because the other variant of the argument is used. This demonstrates that the elided phrase should involve the same alternant uttered in the antecedent phrase, as in (108B"). Since two variants of internal argument alternation share the same

[29] Such alternation is not allowed in sluicing either.

(i) a. They embroidered something with peace signs, but I don't know what.
b. *They embroidered something with peace signs, but I don't know what on.
(Merchant, 2008a)

meaning, the fact that internal argument alternation is not allowed under ellipsis in echo questions implies that semantic identity is not sufficient.

4.2.3.1.3 Derivational nominal alternation

The last instances that undermine the semantic identity condition are found in examples including derived nominals. Derivational nominals are nouns that are derived from verbs with their meaning preserved (although there may exist a slight difference in nuance). For example, a noun *destruction* is derived from a verb *destroy*, and *election* from *elect*. Compared to the voice alternation and the internal argument alternation, following examples are relatively extreme cases of alternation since the categorical selection of the verb is completely changed. (109) illustrates this alternation.

(109) a. He remembers that he destroyed Rome.

b. He remembers his/the destruction of Rome.

(110) A: He remembers that he destroyed Rome.

B: ?He remembers his/the destruction of WHAT?

B': ~~He remembers his/the destruction~~ *of WHAT?

In (109a), the verb *remember* selects for a clause as its complement while that of (109b) selects for a DP. DP *Rome* preserves its thematic role as a theme

between alternation (Adger, 2003), and these two sentences are considered to have the same meaning. A fully uttered echo question (110B) is felicitous despite having a different syntactic structure from its antecedent (110A). If semantic identity is on the right track, (110B) can be a target of ellipsis and produce (110B') as a remnant. However, this is not the case; the fragment *of WHAT* in (110B') is illicit. This unacceptability gives rise to the same question we had with two other alternations—voice alternation and internal argument alternation: the semantic identity is not sufficient to license ellipsis in echo questions.

In summary, if the semantic identity condition is on the right track, the aforementioned structural mismatches between antecedent and elliptical clauses are incorrectly predicted to be licit due to their same semantic meaning. However, the impossibility of mismatches indicates that echo questions that have the same meaning but different structures from their antecedent clauses cannot be targets for the deletion.

4.2.3.2 Syntactic identity is required

We have discussed that resorting to only semantic identity cannot explain the behaviors of echo fragments. I argue that the syntactic identity is required. The necessity of syntactic identity has been discussed for various elliptical constructions in the literature (Fiengo & May, 1994; Chung, 2006; Merchant, 2008a, 2013; Tanaka, 2011; Rudin, 2019). Previous studies have noted that

in cases of clausal ellipsis such as sluicing and fragment answers, aforesaid mismatches are not ever allowed. As echo fragments do not tolerate these mismatches either, I argue that ellipsis in echo questions is another type of clausal ellipsis that necessitates the syntactic identity condition.

As Merchant notes, voice mismatch is impossible in sluicing construction as in (111) while it is possible in VP ellipsis as in (112).

(111) *Someone shot Ben, but I don't know by whom <~~Ben was shot *t*~~>.

(112) This problem was to have been looked into, but obviously nobody did ~~<look into this problem>~~.

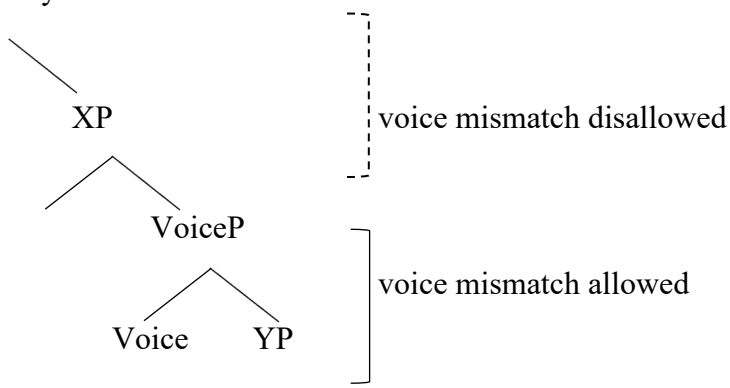
(Merchant, 2008a)

Although the syntax of active and passive is obviously disparate, voice mismatch is allowed under VP ellipsis, unlike clausal ellipsis (i.e., sluicing). Merchant (2008a, 2013) ascribes the difference to the distinct features on a Voice head. He follows the theory introducing a Voice head that is separate from the verbal head V and asymmetrically c-commands it. Under the assumption that a Voice head apart from V head exists, voice morphology realized on a verb is a morphological reflex of a syntactic agreement between these two heads. The voice feature on the Voice head is valued within two features—active and passive—in the lexicon. The author insists that the

different feature of the Voice head leads to the difference in syntactic structure.

When the ellipsis targets a structure larger than Voice phrase such as clause (i.e., TP or CP), the elliptical phrase must include VoiceP. This leads to an intolerance of voice mismatch between the antecedent and the elliptical clause because the two Voice heads have different voice features. On the other hand, when the ellipsis targets a structure smaller than VoiceP such as VP, voice mismatch is allowed since Voice head is not included in the elliptical site. This is illustrated in the configuration (113) reproduced from Merchant (2013, p. 13).

(113) Legitimacy of voice mismatch

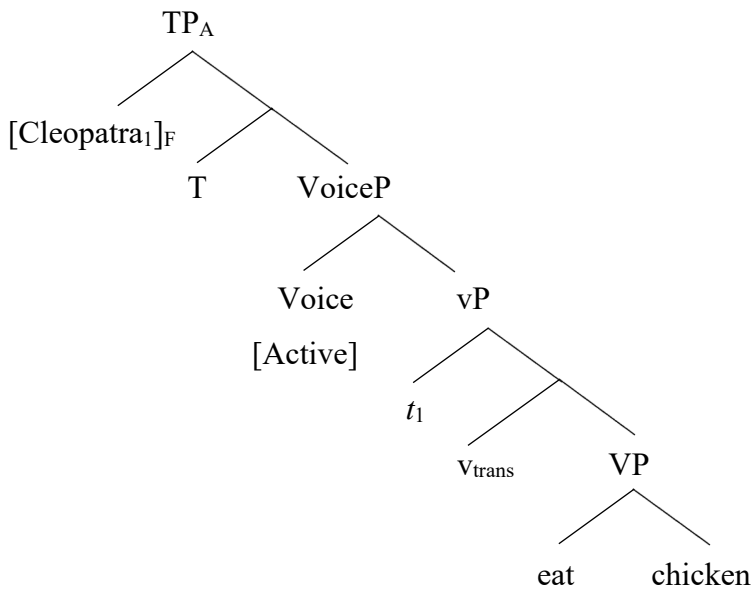


I adopt a similar line of reasoning for ellipsis in echo questions. Under the assumption that echo fragments result from clausal ellipsis, it is not tolerant of voice mismatch since clausal ellipsis targets a structure higher than VoiceP. To illustrate, see examples in (114) showing mismatch in active-passive alternation. Examples showing active-active match is given in (115) for the

comparison.[30] Following Merchant (2013), I assume that v_{trans} is a head introducing an external argument (Kratzer, 1996) and *by*-agent phrase is generated in Spec, vP_{trans} similar to the agents of transitive verbs. The covert Q-operator is considered to be attached to a *wh*-phrase following Beck and Reis (2018), which is sometimes omitted in the following tree structures for reasons of space.

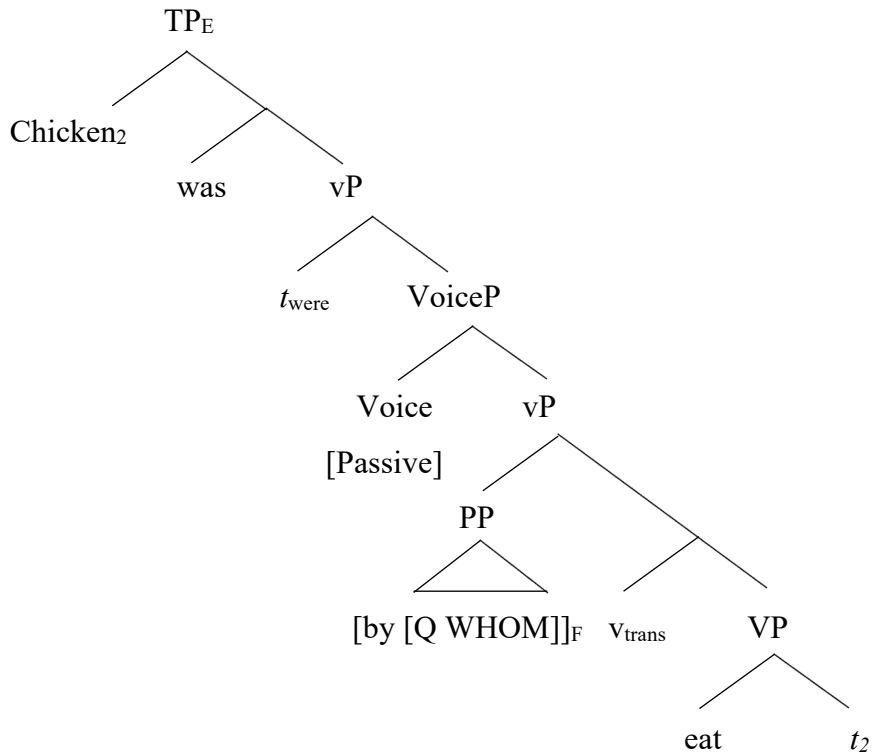
(114) Active-passive mismatch

A: Cleopatra ate chicken.



[30] In syntactic tree structure, I use the term *whP* rather than *DP* for a *wh*-phrase node.

B: ~~Chicken was eaten~~ *by WHOM?



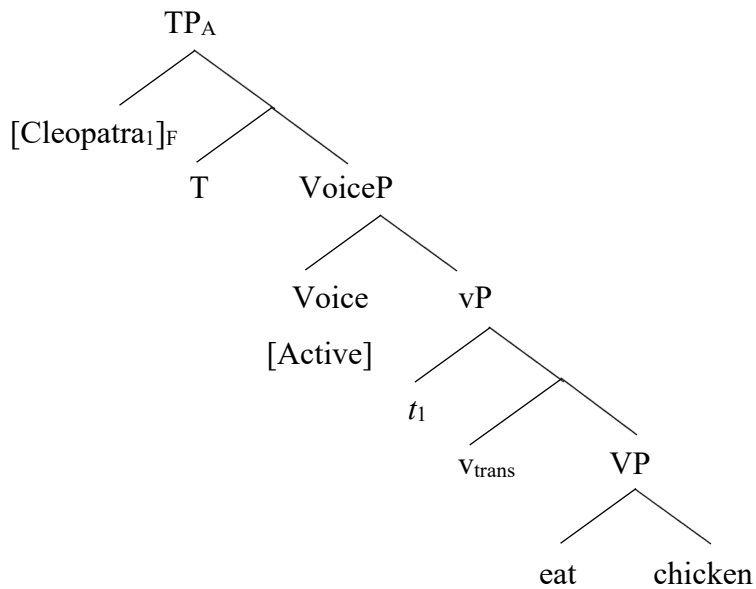
In (114), the Voice head of the antecedent and elided clause bears different features—active and passive, respectively. Having the different voice feature from its antecedent, an echo question (114B) cannot be identified as an ellipsis site. In Merchant (2013), he provides sluicing examples in Greek where voice distinction is realized only synthetically (= without auxiliary verb *be*) via morphological changes, thereby adhering to the featural difference as the cause of violation of syntactic identity. I argue that in cases of English, the presence of passive auxiliary verb *be* also triggers the violation of

syntactic identity. Therefore, the syntactic identity can be determined in terms of both syntactic structure and feature valuation in this case.

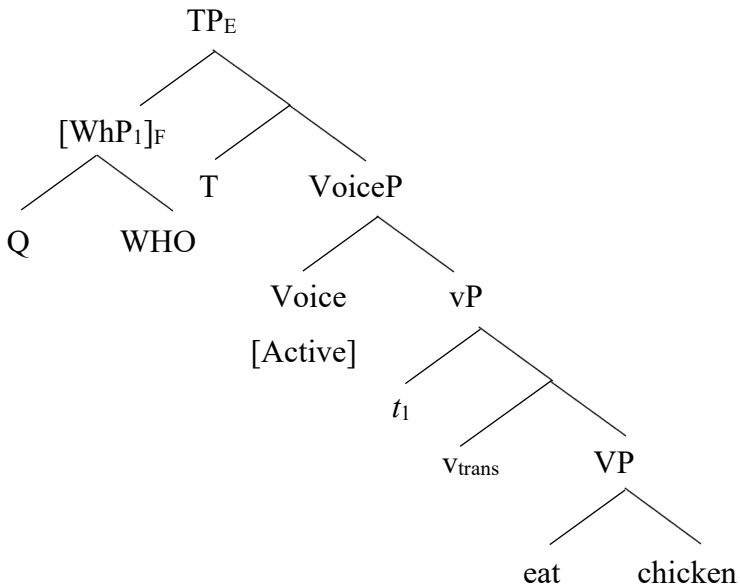
In contrast, in active-active match in (115), every syntactic object, except for the focused phrase *Cleopatra* and a *wh*-phrase *WHO,* is identical between the antecedent and elliptical clause. Thus, ellipsis is licensed successfully.

(115) Active-active match

A: Cleopatra ate chicken.



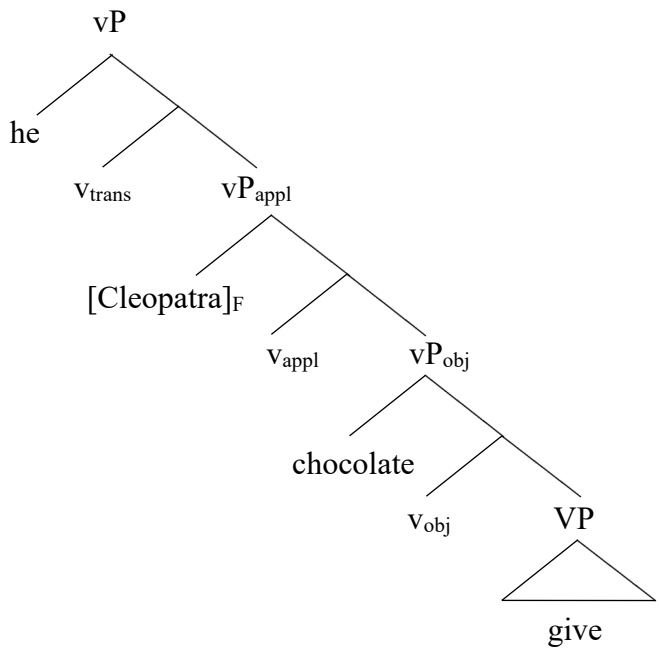
B: WHO ~~ate chicken~~?



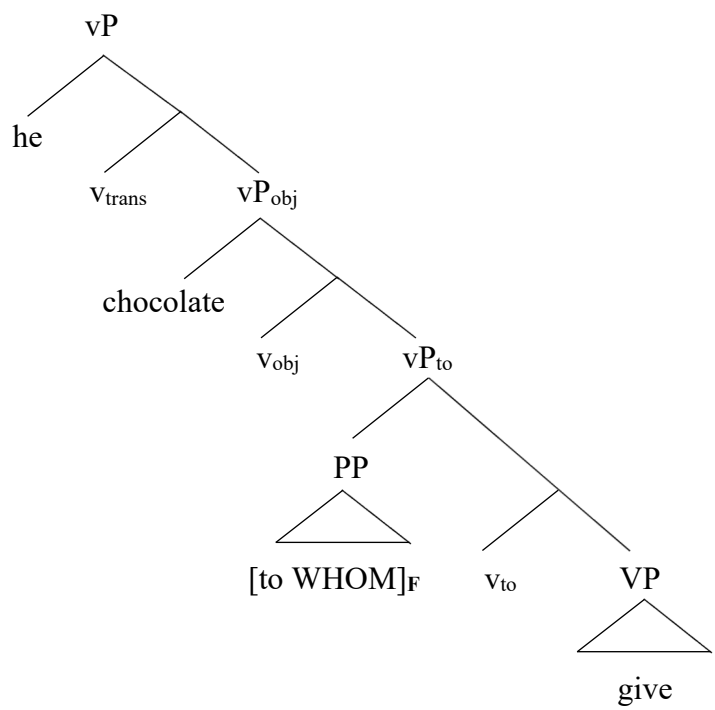
Another structural mismatch, the internal argument alternation, also corroborates the syntactic identity condition. Relevant examples and configurations are given in (116). If internal argument alternations are realized via different syntactic heads, then syntactic structure between the antecedent and the elided clause must be distinct. I follow Merchant's (2013) assumption that v_{obj} introduces the direct object and v_p introduce arguments related to each preposition. For example, v_{to} selects for PP headed by *to*. For double object construction, following Marantz (1993), I assume that the goal DP is introduced by v_{appl} (applicative head) which asymmetrically c-commands vP_{obj} and VP.

(116) Mismatch in internal argument alternation

A: He gave Cleopatra chocolate.



B: ~~He gave chocolate~~ *to WHOM?



Since the antecedent and elided clause consequently have the different syntactic heads and structures, (116B) fails to be identified as an ellipsis site: the syntactic identity is violated.

The parallel is easily found in cases of the derivational nominal alternation. The antecedent and elliptical clauses obviously have different syntactic structures since there occurs a change in syntactic categories from the verb to noun. Moreover, if we follow the proposed syntactic identity condition, swiping is correctly predicted to ungrammatical under ellipsis in echo questions.

(117) A: Lois was talking to Dracula.

B: ~~Lois was talking~~ to WHO(M)?

B': ~~Lois was talking~~ *WHO(M) to?

I argue that the ungrammaticality of (117B') is ascribed to the proposed syntactic identity condition. The syntactic identity condition is not satisfied since the matrix clause in (117B') does not have the same syntactic structure with the antecedent clause in (117A). It fails to be considered as an ellipsis site; only (117B) can be.

So far in this section, I have provided empirical evidence that a clause showing structural mismatches—such as voice alternation, internal argument alternation, and derivational nominal alternation—with its antecedent clause

cannot be licensed as a possible ellipsis site even though they have the identical semantic meaning (truth-conditionally).[31] Based on this observation, I argue for the syntactic identity condition on ellipsis in echo questions, which is stated as below:

[31] There are also in-situ *wh*-questions that are used to query for specific information (i.e., non-echoic use) rather than ask for clarification.

(i) A: Well, anyway, I'm leaving.
B: OK, so you'll be leaving WHEN exactly?

(ii) A: We're going to buy a house.
B: Uh huh. And you're going to pay for it with WHAT?
(Ginzburg&Sag, 2001, p. 281)

According to Ginzburg and Sag (2001), it is infelicitous to utter an information-seeking in-situ *wh*-question out of the blue. The speaker A's utterance establishes a presupposition of a particular kind. In each B's utterance, thus, the speaker B is asking for the new information that is related to the content salient in the context. In these cases, an in-situ *wh*-phrase bears an accent (not exactly the same rising pitch accent that echo *wh*-questions bear, though), which seems similar to echo *wh*-questions discussed so far.

(iii) A: Well, anyway, I'm leaving.
B: When (exactly)?

(iv) A: We're going to buy a house.
B: With what?

Since non-echoic in-situ *wh*-questions are possible, one might think that fragments in (iiiB) and (ivB) might be derived from those sentences. However, it should be noted that the proposed analysis assumes that an entire matrix clause should be concerned when calculating syntactic identity condition. The utterances of the speaker A and B in (i)-(ii) have different syntactic structures, which thus cannot license ellipsis in B's utterances. Instead, I argue that (iiiB) and (ivB) belong to *sprouting*, a subtype of sluicing construction. Unlike merger-type sluicing, *wh*-remnants in sprouting do not have a corresponding correlate from the antecedent clause. Since it is a subtype of sluicing, it is derived via movement and deletion approach rather than an in-situ approach proposed in the present study. Thus, (iiiB) and (ivB) do not pose challenges to the proposed analysis. Refer to Chung et al. (1995) and Chung (2006) for further account of sprouting.

(118) Syntactic identity condition on ellipsis in echo questions

(i) An ellipsis site is the matrix clause (i.e., TP/CP_E) which is identified with its salient antecedent clause (i.e., TP/CP_A) iff they are syntactically identical except for the focused phrase.

(ii) XP_E is syntactically identical to XP_A if they have the same syntactic structure and feature valuation.

Again, it should be emphasized that in (118), I assume that an ellipsis site can be extended to the matrix CP, not confined to TP since echo questions can have a standard (*wh*-)question as a preceding utterance, whose projection amounts to CP.

Before closing the section, we have some points worth noting. As might be expected, ellipsis cannot take place in echo questions that are different in terms of both meaning and sentence structure from the preceding utterance.

(119) A: I sent an invitation to Dracula.

B: You invited WHOM?

B': WHOM? (= *You sent an invitation to WHOM?*)

(≠ *You invited WHOM?*)

B": *invited WHOM?

One might say that a fragment *WHOM* in (119B') can be uttered as an echo question having the same meaning with (119B). However, it is construed as

You sent an invitation to WHOM? rather than *You invited WHOM?*. (119B) fails to behave as an ellipsis site since it is neither syntactically nor semantically identical to the antecedent clause. A massive fragment in (119B") bolsters this argument in that it should be predicted as grammatical if (119B) is a possible ellipsis site to which in-situ deletion can operate. That is to say, the deletion takes place only in the sentences which are syntactically identical to the preceding utterance.[32]

4.2.4 Licensing massive fragments

In the preceding sections, we have discussed the deletion operation and the identity condition on ellipsis in echo questions. Yet, there remains another respect we need to take into account. We have seen that echo fragments can

[32] In Ginzburg and Sag (2001), they provide examples that seem to be possible counterexamples to the proposed analysis. The authors use the term reprise for the utterances that are reactive to the previous utterance to some degree. Accordingly, instances that do not belong to echo fragments are provided in terms of reprise sluice. To illustrate, see examples below.

(i) A: Did Mary phone you?
B: When? (= What time *t* are you asking whether Mary phoned me at *t*?)

(ii) A: Who should easily be able to get a job?
B: Where? (= What place *l* is A asking about who should easily get a job in *l*?)
(Ginzburg&Sag, 2001, p. 298)

They note that these examples pose challenges to the structural analysis which assumes a reconstruction of the elliptical clause, since it is hard for fragments in each B's utterance to have some semantic or syntactic parallelism with the antecedent clause A. These fragments do not have correlates from the antecedent and are used to seek for new information. I thus do not consider them as echo fragments. They also do not belong to sprouting either. Despite pointing out this critical aspect, Ginzburg and Sag themselves put aside a related account. They simply suggest that the meaning of B's utterances involve an illocutionary force. Since this construction is beyond the scope of the present study, I suppose that a certain pragmatic licensing condition is in need to account for such phenomenon, which I leave for future research.

be bigger than a single focused phrase—massive fragments. In this section, the possibility of massive fragments will be examined in detail. Griffiths et al. (2018) suggest that unrestricted vertical focus projection proposed in Büring (2006) can explain the phenomenon, but they left the relevant discussion unaddressed. I develop my analysis based on their suggestion.

Echo questions must contain a narrowly focused element having a rising pitch accent. Generally speaking, there exists a certain relation between focus and accent (= intonational prominence): when a word is accented, it gets focus. Selkirk (1996) defines it as the Basic Focus Rule in (120), which is a standard view on the relation of accent and focus.

(120) Basic Focus Rule

An accented word is F-marked.

When the rule is applied to echo questions, we get an expected result. In (121), the accented *wh*-phrase *WHOM* is F-marked, whereas other elements apart from it are not.

(121) A: He kissed Dracula.

B: He kissed [WHOM]$_F$?

L+H*

Now, focus projection comes into play. The pitch accent of a focused word not only indicates the information structure (i.e., what is given or new)

of the word itself, but also that of the phrases dominating it. This can be realized via focus projection from the focused word to the dominating constituents above it. It has been noted that focus projection is syntactically unconstrained (Schwarzschild, 1999; Büring, 2006). Not only heads and internal arguments, but also other constituents such as adjuncts, external arguments (= transitive subjects), indirect objects, and even conjuncts in a coordinate phrase can project focus. Büring (2006) defines it unrestricted vertical focus projection as stated in (122).[33]

(122) Unrestricted vertical focus projection

a. Any sub-constituent can project focus.

b. F-marking on X licenses F-marking on any category Y dominating X.

(Büring, 2006)

The focus is projected upward following this rule, and the highest focused constituent becomes a FOC, focus of a sentence.[34]

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[33] A traditional (or standard) view of focus projection is as follows:

(i) (Standard) Focus Projection
a. F-marking of the head of a phrase licenses the F-marking of the phrase.
b. F-marking of an internal argument of a head licenses the F-marking of the head.
(Selkirk, 1996)

This standard focus projection principle allows only heads and internal arguments to project focus they carry. Other elements cannot project their focus according to this rule.

[34] Previous studies have posited rules related to focus and its projection to explain the pattern of focus in standard question-answer pairs and sentences including contrastive phrases. Refer to Büring (2006) for the relevant account.

(123) FOC (Focus of a sentence)

An F-marked constituent not dominated by any other F-marked constituent.

(*ibid*.)

If we apply it to echo questions, we can get a focus schema as in (124). Here, the verb *kissed* does not need to be F-marked since the focus from DP *WHOM* is directly projected to its mother VP *kissed WHOM*, which becomes FOC consequently.

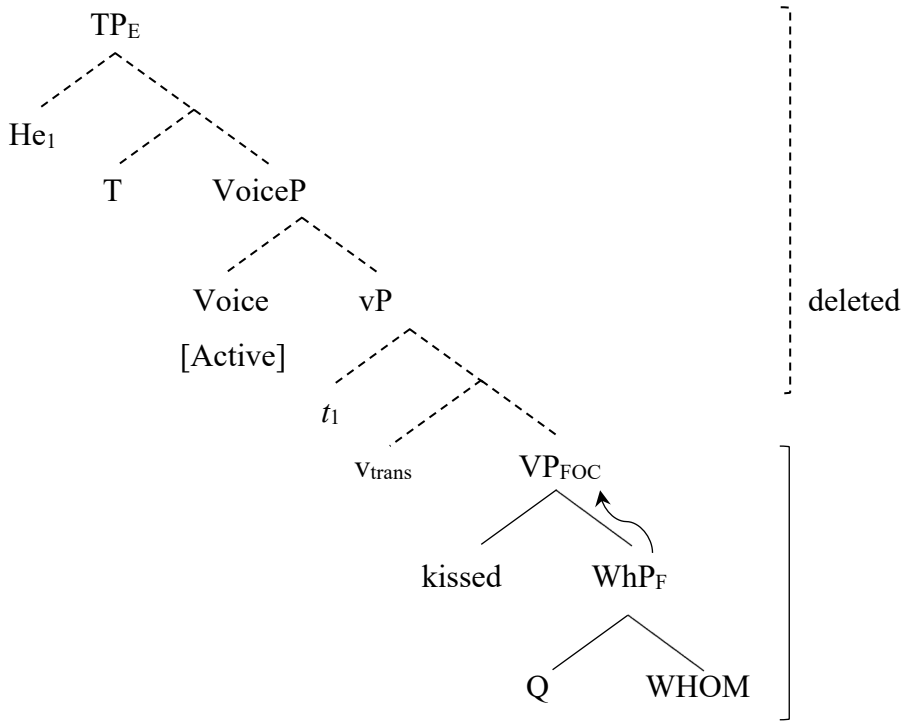
(124) A: He kissed Dracula.

B: He [kissed [WHOM]$_{F}$]$_{FOC}$?

Assuming that focus projection occurs before in-situ deletion, FOC resulting from the focus projection survives deletion. To illustrate, see below.

(125) Unrestricted focus projection and in-situ deletion of (124B)

a. ~~He~~ [kissed [WHOM]$_F$]$_{FOC}$?



A tree structure in (125) shows that the focus is projected from an internal argument *WHOM* and that the subsequent in-situ deletion operates on the ellipsis site, (124B). Due to the focus projection from an object, VP *kissed WHOM* becomes FOC, the highest focused constituent. When the deletion applies, this FOC survives deletion and remains as a remnant.

Next, the focus projection from an adjunct phrase and the subsequent deletion are illustrated below, with a brief tree structure.

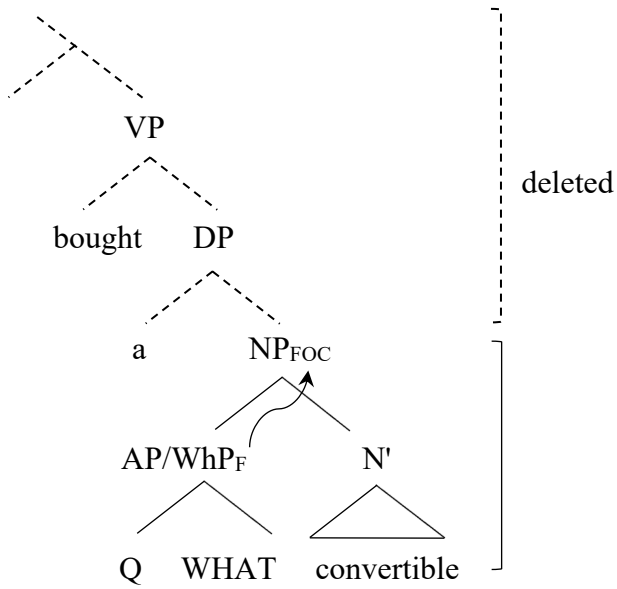
(126) A: I bought an amethyst convertible yesterday!

B: You bought a [[WHAT]$_F$ convertible]$_{FOC}$ yesterday?

B': You [bought a [WHAT]$_F$ convertible]$_{FOC}$ yesterday?

(127) Unrestricted focus projection of (126B) and in-situ deletion

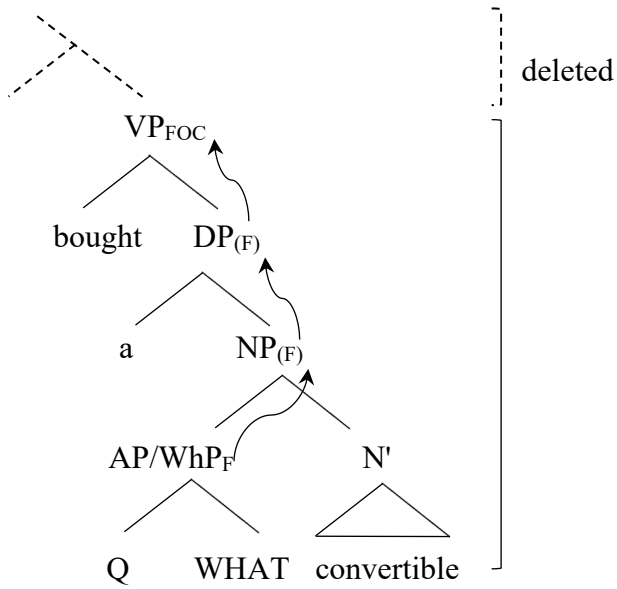
a. ~~You bought a~~ [[WHAT]$_F$ convertible]$_{FOC}$ ~~yesterday~~?



Owing to the unrestricted focus projection, focus from an adjunct AP *WHAT* can be projected to the dominating node NP. The NP *WHAT convertible* thus becomes a FOC, the highest focused constituent not dominated by any focused constituent. Focus can be projected even further above, resulting in even more massive fragment as in (128).

(128) Unrestricted focus projection of (126B') and in-situ deletion

a. ~~You~~ [bought a [WHAT]$_F$ convertible]$_{FOC}$ ~~yesterday~~?



Here, the focus from AP *WHAT* is projected up to VP *bought a WHAT convertible*, which becomes a FOC and survives deletion. Intermediate constituents such as NP and DP do not have to be F-marked.

According to the proposed in-situ deletion, the materials that undergo deletion are considered as given. I adapt the focus interpretation rules proposed in Büring's (2006) to account for how F-marking and FOC are interpreted with respect to the givenness.

(129) Focus interpretation (*to be revised*)

a. F-marked constituent but not FOC: *New* in the discourse

b. constituent without F-marking: *Given*

c. FOC can be either given or new

(Büring, 2006)

First, the focus interpretation in (129a) requires that the F-marked constituent that is not FOC to be new in the discourse. We have seen that a narrowly focused element is the only F-marked constituent in echo questions and signals that the speaker considers it as new. Hence the rule correctly applies to the interpretation of the echoing element. When no focus projection applies, the F-marked constituent itself is FOC, the highest focused constituent in the sentence. Next, (129b) indicates that constituents without F-marking are considered given. Since materials other than a narrowly focused element in echo questions are already uttered in the antecedent clause, they are not F-marked and interpreted as given.

The interpretation of FOC as in (129c), however, is not compatible with the proposed in-situ deletion. In the proposed analysis, what survives deletion is a FOC, the highest F-marked constituent: FOC, thus, should not be considered given. I propose that it is natural to consider FOC as not given in echo questions because it must contain a narrowly focused element which is obviously new. More specifically, it can be entirely new (when no focus projection is implemented, and thus F-marked constituent itself is a FOC) or partly new (when focus projection is implemented). Revised focus interpretation rules for echo questions are given as follows:

(130) Focus interpretation for echo questions

a. F-marked constituent: *New* in the discourse

b. constituent without F-marking: *Given*

c. FOC: (i) *entirely new* when no focus projection applies.

(ii) *partly new* when focus projection applies.

Since FOC is not considered given, it can successfully survive deletion and become a massive fragment; conforming to the predictions made so far.

More comprehensive examples demonstrating massive fragments are given below.

(131) A: The man that kissed Dracula is coming to dinner.

B: ~~The man that kissed~~ $[\text{WHOM}]_{F/FOC}$ ~~is coming to dinner~~?

B': ~~The man that~~ $[\text{kissed } [\text{WHOM}]_{F}]_{FOC}$ ~~is coming to dinner~~?

B'': ~~The man~~ $[\text{that kissed } [\text{WHOM}]_{F}]_{FOC}$ ~~is coming to dinner~~?

B''': ~~The~~$[\text{man that kissed } [\text{WHOM}]_{F}]_{FOC}$ ~~is coming to dinner~~?

C: *~~The man that~~ $[\text{kissed } [\text{WHOM}]_{F} \text{ is}]_{FOC}$ ~~coming to dinner~~?

In (131B), *WHOM* is not only F-marked but also FOC because no projection is employed. FOC is entirely new and survives deletion. From (131B') to (131B'''), it is shown that FOC is partly new and survives deletion; it remains as a massive fragment. Focus projection has to operate along the syntactic

structure. The non-constituent fragment as in (131C) is ungrammatical because the sequence *kissed WHOM is* is not dominated by the same node.[35]

To sum up the proposed analysis in the present study, ellipsis in echo questions operates as follows:

(132) Ellipsis in echo questions

(i) When an echo question is syntactically identical to the immediately preceding utterance except for the focused phrase, the entire matrix clause (i.e., TP/CP) can be an ellipsis site.

[35] At first appearance, main-clause sluicing (or matrix sluicing) and echo fragments seem similar in that neither are accompanied by a lexical item introducing a *wh*-phrase such as *know*, and that there is an interaction between two speakers. This seeming similitude leads us to assume that both types of ellipsis should be accounted for in the same way. However, massive fragments are not allowed under matrix sluicing as shown in (i).

(i) A: I kissed someone yesterday.
B: (Really?) Who?
B': *Kissed who?

I argue that focus projection is not plausible in matrix sluicing because a *wh*-phrase in this case does not get a narrow focus and a rising pitch accent (L+H*). One might point out that a *wh*-phrase in matrix sluicing also gets focused and projects its focus (not exactly a narrow focus, though). Nevertheless, in standard *wh*-questions, the *wh*-phrase should be positioned in the left periphery of the clause (i.e., Spec, CP), the highest position in the syntactic structure, where the *wh*-phrase presumably gets focused. If focus were projected from the *wh*-phrase, the entire sentence would become FOC since the dominating node of the *wh*-phrase is CP, the entire clause itself.

(ii) a. $[_{CP}[\text{Who}]_F\ [_{C'}$ ~~did you kiss *t* yesterday~~$]]$?
b. $[_{CP}[\text{Who}]_F\ [_{C'}$ did you kiss t yesterday$]]_{FOC}$?

Therefore, even though the focus is projected from a standard *wh*-phrase, the only possible massive fragment is the entire sentence itself, as in (iib). We cannot derive a massive fragment like (iB') in the case of matrix sluicing.

(ii) Focus from the narrowly focused constituent can be projected upward along the syntactic structure, up to the highest focused constituent, FOC.

(iii) The deletion targets the ellipsis site, and FOC survives the deletion in its base-generated position.

5. Consequence and remaining issues

In Chapter 5, I first present the consequence of the proposed analysis. The proposed analysis can be applied to ellipsis in multiple echo questions, and this strengthens the in-situ deletion analysis of echo fragments. After that, I briefly discuss issues that still need to be further investigated.

5.1 Consequence: Ellipsis in multiple echo questions

I argue that the proposed analysis can successfully explain the possibility of ellipsis in multiple echo questions, where more than one echo *wh*-phrase occur.

(133) A: Cleopatra talked about beef Wellington.

B: WHO talked about WHAT?

B': WHO about WHAT?

B": WHO ~~talked~~ about WHAT?

When uttering (133B), the speaker B requests clarification of both participants of the described situation, *Cleopatra* and *Dracula*. A similar phenomenon has been captured and examined in sluicing, which is referred to as *multiple sluicing*, presented in (134).

(134) a. ?Someone talked about something, but I can't remember *who about what.*

b. ?*Someone saw something, but I can't remember *who what*.

With respect to the multiple sluicing, Lasnik (2014) argues that there is a strong preference for the second *wh*-phrase to be a PP as in (134a), rather than a DP as in (134b). With an assumption that the first *wh*-phrase undergoes standard *wh*-movement while the second one undergoes extraposition (or rightward movement), the ungrammaticality of (134b) having DP as a second *wh*-phrase is ascribed to the constraint on extraposition of DP in general. That is, DP should be "heavy" in order to be extraposed while PP doesn't have to be.

(135) a. Mary spoke yesterday [$_{PP}$ to him].

b. *Mary saw yesterday [$_{DP}$ Harry].

c. Mary saw yesterday [$_{DP}$ her old friend Harry].

(modified from Lasnik, 2014, p. 8)

DP *Harry* in (135b), for example, cannot be extraposed since it is not heavy enough while DP *her old friend Harry* in (135c) can. However, there is no such constraint for extraposing a PP; (135a) is grammatical by itself despite not being heavy. One might be tempted to apply Lasnik's analysis to the case

of multiple echo fragments such as (133B') above, where the second *wh*-phrase is PP. Even so, consider examples below.

(136) A: Cleopatra saw Ramesses.

B: WHO saw WHOM?

B': ?WHO WHOM?

B": ?WHO ~~saw~~ WHOM?

(137) A: Cleopatra bought beef Wellington for me.

B: WHO bought WHAT for you?

B': WHO WHAT?

B": WHO ~~bought~~ WHAT ~~for you~~?

According to my native informants, multiple echo fragments that have a DP as the second *wh*-phrase are grammatical as in (136B') and (137B'), unlike multiple sluicing examples. This grammatical difference is correctly predicted since no movement of *wh*-phrases occurs in the proposed analysis, according to which the focused constituents survive deletion in their based-generated positions. In other words, the constraints which are imposed on the extraposition have nothing to do with in-situ deletion analysis.

5.2 Remaining issues

In this section, I present issues regarding massive fragments that still require further explanation. First, I examine the massive fragments which are considered grammatical despite showing structural mismatches. I then see whether a massive fragment without its head pronounced is illicit, as reported in Griffiths et al. (2018, 2020).

5.2.1 Massive fragments showing mismatches

One may say that the grammaticality of massive fragments showing structural mismatches is improved because they contain more information (or contents). For example, in (138B') where active voice is echoed by passive voice, the judgment seems to be slightly improved when a fragment becomes bigger including a verb (note that it is still not grammatical, however).

(138) A: Cleopatra ate chicken.
B: *by WHOM?
B': ?*eaten by WHOM?

However, examples in (139) indicate that it is not always the case. As shown in (139B') where passive voice is echoed by active voice, this massive fragment does not present any improvement in judgment even though it includes a verb and thus more information.

(139) A: Cleopatra was bitten by a dog.

B: *WHOM?

B': *bit WHOM?

Even so, when we look at the even bigger fragments, we can find a different pattern. For example, the massive fragment (140B") is marginally grammatical unlike others such as (140B-B').

(140) A: I like the man that Dracula introduced to me.

B: *by WHOM?

B': ?*introduced to you by WHOM?

B": ?the man that was introduced to you by WHOM?

I claim that this is because in (140B"), every material originated within the highest *v*P is pronounced. That is, when the core arguments related to the argument structure of the verb—an agent, a patient (or theme), and a goal in this case—are all included in the massive fragment, this somewhat weakens the syntactic identity condition and allows for structural mismatches.

To recapitulate, I assume that there is no clear proportional relationship between the grammaticality of a massive fragment and the amount of information it contains. Rather, the syntactic identity condition is prone to be weakened and the meaning of a fragment showing structural mismatches can

be recovered when it includes all the core arguments originated within the highest *v*P. I leave more accurate account for the future research.

5.2.2 Implausible massive fragments

There is another issue regarding the massive fragments. Griffiths et al. (2018, 2020) report that a massive fragment without its head pronounced is illicit. They point out that remnants of an ellipsis should be a constituent with a pronounced head; an echo fragment must contain its pronounced head. Thus, all the B' examples below are illicit because they lack the head V *gave*. In contrast, all the B" examples are licit because they contain the head V.

(141) Double object construction

A: He gave Cleopatra chocolate.

B: ~~He gave~~ [WHOM]$_{F/FOC}$ ~~chocolate~~?

B': *~~He gave~~ [$_{VP}$ WHOM$_{F}$ t_{gave} chocolate]$_{FOC}$?

B": ~~He~~ [$_{VP}$ gave [$_{VP}$ WHOM$_{F}$ t_{gave} chocolate]]$_{FOC}$?

A: He gave me a fire-breathing dragon.

B: ~~He gave you~~ [WHAT]$_{F/FOC}$?

B':*~~He gave~~ [$_{VP}$ you t_{gave} WHAT$_{F}$]$_{FOC}$?

B": ~~He~~ [$_{VP}$ gave [$_{VP}$ you t_{gave} WHAT$_{F}$]]$_{FOC}$?

(142) Oblique dative form

A: He gave chocolate to Cleopatra.

B: ~~He gave chocolate to~~ $[\text{WHOM}]_{F/FOC}$?

B': ?*~~He gave~~ $[_{VP}$ chocolate t_{gave} to $\text{WHOM}_F]_{FOC}$?

B'': ~~He~~ $[_{VP}$ gave $[_{VP}$ chocolate t_{gave} to $\text{WHOM}_F]]_{FOC}$?

A: He gave a fire-breathing dragon to me.

B: ~~He gave~~ $[\text{WHAT}]_{F/FOC}$ ~~to you~~?

B':*~~He gave~~ $[_{VP}$ WHAT_F t_{gave} to you$]_{FOC}$?

B'': ~~He~~ $[_{VP}$ gave $[_{VP}$ WHAT_F t_{gave} to you$]]_{FOC}$?

Additionally, Griffiths et al. report that fragments lacking the tense head T are illicit for the same reason, as in (143B').

(143) A: What did Dracula drink?

B: ~~What did~~ $[\text{WHO}]_{F/FOC}$ ~~drink~~?

B': *~~What did~~ $[_{TP}$ WHO_F t_{did} drink$]_{FOC}$?

B'': ~~What~~ $[_{C'}$ did $[_{TP}$ WHO_F t_{did} drink$]]_{FOC}$?

They argue that F-marking is retained when F-marked element is moved as illustrated in (144) and (145) below. When copies in a movement-chain are pronounced, they should be "pronounced with the prosodic reflex of F-marking, a pitch accent" (Griffiths et al., 2018, p. 19). The fragment must

contain its pronounced head which is F-marked and therefore carries a pitch accent.

(144) A fragment lacking *V head*

a. *~~He gave~~ [$_{VP}$ [WHAT]$_F$ t_{gave} to you]$_{FOC}$?

b. ~~He~~ [$_{VP}$ [gave]$_F$ [$_{VP}$ [WHAT]$_F$ t_{gave} to you]]$_{FOC}$?

(145) A fragment lacking *T head*

a. *~~What did~~ [$_{TP}$ [WHO]$_F$ t_{did} drink]$_{FOC}$?

b. ~~What~~ [$_{C}$' [did]$_F$ [$_{TP}$ [WHO]$_F$ t_{did} drink]]$_{FOC}$?

(adapted from Griffiths et al., 2018, 2020)

However, I argue that their analysis is invalid. According to the unrestricted vertical focus projection, F-marking on XP does not require its head X to be F-marked. Thus, the head V of VP and the head T of TP above do not need to be F-marked, contrary to their analysis, and hence, they do not exhibit pitch accent for prosodic reflex. In fact, since every fragment already contains the *wh*-phrase that is the only obvious bearer of a pitch accent, there is no need for an extra pitch bearer. Moreover, my native informants consistently report that fragments lacking T head are grammatical while those lacking V head are not. I suspect that the difference is due to the different characteristics of the two heads, which I leave for future studies.

6. Conclusion

In this thesis, I have investigated the syntax and semantics of fragments in English echo questions. In terms of the semantics, I argued that the effect of context should be taken into consideration when deriving echo questions. This has been carried out by resorting to the relation between the focus alternative semantics for echo questions (Beck & Reis, 2018) and the notion of QUD on the basis of Beaver et al. (2017). Accordingly, the variance in constructing echo questions can be formulated more systematically.

Then, I discussed the syntax of fragments in echo questions. I have argued that fragments carrying the same meaning and function with full sentential echo questions are truly the results of an ellipsis process: It is a grammatical phenomenon. By demonstrating both similitude and dissimilitude it has with other elliptical constructions, I argued that the clausal ellipsis occurring in echo questions needs a different explanation from other constructions.

To account for the process of ellipsis in echo questions, I examined both the deletion operation and the identity condition. In respect of the deletion operation, I argued against the movement and deletion approach (Merchant 2001, 2004, etc.), providing empirical evidence that (i) echo fragments can consist of immovable XPs, such as elements smaller than DP and constituents much bigger than DP, and (ii) swiping is not allowed for echo fragments. Rather than imposing individual stipulations on immovable phrases, I developed the analysis building on Griffith et al.'s (2018, 2020) in-situ

deletion analysis. Under the assumption that ellipsis occurs at PF and that what is considered given is deaccented and thus reduced as an extreme case, the highest focused constituent (i.e., FOC) survives deletion.

With respect to the identity condition, I have proposed that, in order for the ellipsis to be licensed, the syntactic structure of the antecedent and the elliptical clause should be identical except for the focused phrase. By providing novel examples that undermine the semantic identity condition, I argued for the syntactic identity condition.

Unlike other elliptical constructions, ellipsis in echo questions is characterized by its possibly massive fragments. It is essential to note that massive fragments are strong evidence that the Merchant-style movement and deletion approach cannot be extended. I have adopted Büring's (2006) unrestricted vertical focus projection rules and adapted his focus interpretation rules to license massive fragments. Any focused element can project its focus, which amounts to FOC, the highest focused constituent in the sentence. This FOC remains as a (massive) fragment after deletion.

Moreover, the proposed analysis has been reinforced with an ellipsis in multiple echo questions, which shows different patterns with multiple sluicing that assumes movement mechanism. Although there remain some issues to be studied further, the proposed analysis in the present thesis can provide a comprehensive account of the syntax and semantics of fragments in English echo questions.

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국문초록

영어 메아리 질문 조각문의 통사와 의미

본 논문의 목적은 영어의 메아리 질문(echo questions)의 조각문(fragment)에 대한 구조와 의미를 살펴 보는 것이다. 본 논문의 저자는 수문 구문(sluicing), 조각 대답(fragment answers)등의 생략 구문과는 다른 양상으로 나타나는 메아리 질문의 조각문 또한 절 생략(clausal ellipsis)의 결과이며, 메아리 질문에서의 생략을 설명하는 데에는 초점 구문(focused phrase)의 절 주변부(clause periphery)로의 이동을 배제한 제자리 삭제(in-situ deletion) 접근법이 필요함을 주장한다.

먼저, 본 저자는 Beck and Reis (2018)에 기반하여 메아리 질문의 의미는 초점의 역할을 통해 도출된다고 주장한다. 나아가, 의미 형성과정 설명에 있어 QUD(Question Under Discussion) 개념을 도입할 것을 제안한다. 메아리 질문은 선행 발화와 구조와 의미가 완전히 동일하지 않을 수 있는데, Beaver, Roberts, Simons, and Tonhauser (2017)의 논의를 따라 그 다름의 정도를 QUD (Roberts, 1996, etc.)로 설명할 수 있음을 보이고, 이는 초점의 역할을 강조하는 본 논문의 주장과 병립할 수 있음을 설명한다. 메아리 질문의 의미는 생략 후

조각문 상태에서도 유지되기 때문에, 그 의미 형성 과정을 논의하는 것은 중요하다.

조각문의 통사 구조와 관련해서, 본 저자는 먼저 메아리 질문의 생략에서는 일반적으로는 이동할 수 없는 구문들(immovable phrases)을 포함해 잔여구(remnant)가 다양한 크기로 나타날 수 있음을 기반으로 Merchant (2001, 2004)등이 주장한 이동 후 삭제(movement and deletion) 접근법에 반대하고 제자리 삭제 접근법을 지지한다. 또한, 본 저자는 의미적 동일성 조건만으로 인허될 수 없는 구조적 불일치와 관련된 새로운 예문들을 제공함으로써, 메아리 질문의 생략에서는 통사적 동일성 조건이 필요하다고 제안한다 (Merchant, 2008a). 마지막으로 Büring (2006)의 비제한적 초점 투사(unrestricted focus projection)는 좁은 초점을 받은 성분(narrowly focused element)이 단독으로 등장하는 것보다 크기가 큰 거대 조각문(massive fragments)을 가능하게 한다고 주장한다.

주요어 : 생략 현상, 메아리 의문문, 통사적 동일성 조건, 제자리 삭제, 비제한적 초점 투사

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