

ABSTRACT

Title of Dissertation: WHEN DOES ELLIPSIS OCCUR, AND
 WHAT IS ELIDED?

 Dongwoo Park, Doctor of Philosophy, 2017

Dissertation directed by: Professor Howard Lasnik
 Department of Linguistics
 Professor Omer Preminger
 Department of Linguistics

This dissertation is concerned with how elliptical sentences are generated. To be specific, I investigate when and in what module ellipsis occurs, and what is elided as a result of ellipsis. With regard to the first research question, I propose that XP ellipsis occurs as soon as all the featural requirements of the licensor of XP ellipsis are satisfied during the derivation, rather than in the other modules. An important consequence of this proposal is that the point of XP ellipsis can vary depending on the derivational point where all the featural requirements of the licensor are satisfied in narrow syntax. Concerning the second research question, I suggest that ellipsis is a syntactic operation that eliminates phonological feature matrices of lexical items inside the ellipsis site, preserving the formal feature matrices. Segmental content (i.e. phonological features) is inserted into the phonological feature matrices when lexical items are sent to PF after Spell-out. This insertion does not apply to lexical items whose phonological feature matrices are eliminated, since there is no appropriate

venue which segmental content is inserted into. Thus, they are not pronounced. This implies that even though narrow syntax cannot look into the information of the segmental content inside the phonological feature matrices, it can make reference to the phonological feature matrices in lexical items. This proposal is supported by the fact that elements whose phonological feature matrices have been eliminated can take part in further formal operations that occur after ellipsis, since they still contain formal features. However, unlike the other lexical items, elided interrogative *wh*-phrases do not seem to participate in formal operation occurring after ellipsis. In order to resolve this puzzle, I suggest a prosodic requirement questions must obey, adopting and modifying Richards' (2016) Contiguity Theory.

Standard English copular phrase ellipsis is mainly used to develop the present theory of ellipsis. Cross-linguistic evidence from Indian Vernacular English, Belfast English, Korean, Farsi, British English, and Dutch data is also provided to argue that the present theory of ellipsis is not restricted to English.

WHEN DOES ELLIPSIS OCCUR, AND WHAT IS ELIDED?

by

Dongwoo Park

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Advisory Committee:
Professor Howard Lasnik, co-Chair
Professor Omer Preminger, co-Chair
Professor Norbert Hornstein
Professor Michael Israel
Professor Maria Polinsky

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Chapter 1: Introduction

1.1. What is ellipsis?

In communicating with others, people utilize several technical ways of avoiding repeating the same phrases that have been mentioned in the discourse, in order not to make dialogue or writing stylistically monotonous. One of such strategies involves the use of pronouns, which refer to previously mentioned entities, as illustrated in (1).

(1) When Mary met Tom, she burst into tears.

When the pronoun *she* is introduced, the phonological and semantic information of the pronoun allows us to know that the pronoun is associated with a singular female person who was previously mentioned in the discourse. This makes the pronoun refer to *Mary* in the subordinate sentence.

Another strategy of avoiding the repetition of the same phrase is ellipsis, as illustrated in (2).

(2) John will buy a book, and Bill will, too.

The verb phrase is not phonologically realized, and thus, no phonological hint is provided, unlike pronouns. Nonetheless, the meaning of the unpronounced constituent

can be fully recovered, and the sentence in (2) means that *John will buy a book, and Bill will buy a book, too*. That is, the elliptical sentence conveys exactly the same meaning as its corresponding non-elliptical sentence, even though a part of the sentence is unpronounced.

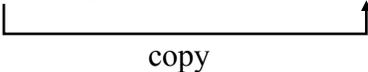
This breakdown of the link between sound and meaning in ellipsis has led researchers to suggest a variety of analyses, in order to illuminate how people generate/understand sentences with an elided constituent. Existing analyses can be divided into two groups depending on whether or not the ellipsis site contains syntactic structure. One school of thought claims that there is no syntactic structure in the ellipsis site (Ginzburg and Sag 2000; Culicover and Jackendoff 2005). That is, the structure of elliptical sentences contains only what you hear. On the other hand, the other school of thought advocates that the ellipsis site contains syntactic structure, even though the elided constituent is not overtly pronounced. I will call this the structural approach. Depending on what structure is contained inside the elided constituent, the structural approach can be split into two sub-analyses. One argues that the elided part is occupied by a null element, while the other claims that the ellipsis site has fully specified syntactic structure identical to the structure of the antecedent. In the latter approach, lexical items contained inside syntactic structure of a full-fledged sentence, which is identical to the antecedent, are not pronounced at PF (Ross 1969, Merchant 2001, Lasnik 2001, van Craenenbroeck and Lipták 2008, Rouveret 2012, among others). As a result, the meaning of the elided part is not recovered through an additional mechanism. This will be called the PF deletion approach. This is represented in (3).

- (3) Tom will buy a book, and Bill will, too.
- a. Narrow syntax: Tom will buy a book, and Bill will buy a book, too.
 - b. PF: Tom will buy a book, and Bill will ~~buy a book~~, too.
 - c. LF: Tom will buy a book, and Bill will buy a book, too.

Meanwhile, the former, which advocates that the ellipsis site is occupied by a null element, has at least two variants: one variant suggests that the elided part is occupied by a null proform, which is interpreted just like an overt pronoun by means of semantics (Wasow 1972; Hardit 1993, 1999; Lobeck 1995, among others; see also Elbourne 2008). This can be represented in (4).

- (4) Tom will buy a book, and Bill will, too.
- a. Narrow syntax: Tom will [buy a book]₁, and Bill will *pro*₁, too.
 - b. PF: Tom will buy a book, and Bill will, too.
 - c. Tom will [buy a book]₁, and Bill will buy a book, too.

The other variant claims that the elided part is occupied by a null element, and the meaning of the ellipsis site is recovered through an operation occurring at LF – the meaning of the antecedent is copied into the ellipsis site at LF. This approach is called the LF copying theory (Fiengo and May 1994; Chung et al. 1995; Wilder 1997, Beavers and Sag 2004, among others). This can be illustrated in (5).

- (5) Tom will buy a book, and Bill will, too.
- a. Narrow syntax: Tom will buy a book, and Bill will *e*, too.
- b. PF: Tom will buy a book, and Bill will, too.
- c. LF: Tom will [buy a book], and Bill will [buy a book], too.
- 
- copy

Although they differ in details, they have one aspect in common: that ellipsis is not an operation that occurs in narrow syntax.

However, recently, a new group of researchers have emerged who suggest that ellipsis is the result of the interaction between a particular syntactic operation and PF. I will call this the derivational approach to ellipsis. First, Baltin (2007, 2012) proposes that ellipsis is the removal of the formal features of lexical items inside the ellipsis site, which occurs during the derivation. When those elements, which have been deprived of their formal features in overt syntax, are sent to PF, vocabulary insertion does not apply to those elements, assuming that vocabulary insertion applies only to lexical items containing their formal features. He argues that ellipsis occurs when the phrase that deletes merges with a head (i.e. at some point of derivation in narrow syntax). Similarly, Aelbrecht (2010) proposes that as soon as an E-feature of the head selecting the phrase that deletes establishes an Agree relation with the ellipsis licensor in the narrow syntax, lexical items inside the ellipsis site are sent to the interfaces. (Note that in this approach, the licensor is not necessarily identical to the head containing an E-feature.) At PF, vocabulary insertion does not apply to the

lexical items inside the ellipsis site owing to the phonological instruction of an E-feature of the sister head of the ellipsis site. These approaches will be discussed in detail in section 2.5. (See also Sailor 2014; Bošković 2014; Park 2016, 2017)¹

1.2. Constraints on Ellipsis (and extraction)

As discussed above, a variety of analyses of ellipsis have been proposed. Nevertheless, these analyses have a point in common: that ellipsis is not always allowed. That is, ellipsis is permitted under certain environments only. In order to illuminate under what circumstances ellipsis is permitted, several constraints have been proposed. In this section, I briefly review the constraints on ellipsis (and extraction) – Parallelism (or, the identity condition), Licensing, and MaxElide.

1.2.1. Parallelism

As discussed above, the unpronounced part of an elliptical sentence conveys the meaning of its antecedent. This is possible since the meaning of the ellipsis site is fully recovered somehow. To guarantee this recoverability, several analyses of ellipsis assume that Parallelism (or the identity condition) is a prerequisite for ellipsis. This constraint requires the unpronounced constituent in the elliptical sentence be identical to its antecedent.

Some argue that the elided constituent must be syntactically or formally identical to its antecedent (Chomsky 1964, 1965; Sag 1976; Williams 1977; Chung et

¹ Besides what I have mentioned, there are other types of analysis of ellipsis. For instance, Tancredi (1992) argues that VP ellipsis is the result of extreme deaccenting of lexical items. Johnson (2001) proposes that VP ellipsis is derived through topicalization of VP followed by deletion of the topicalized VP (see also Aelbrecht and Haegeman 2012, Authier 2012, Funakoshi 2012).

al. 1995; Lasnik 1995; Fox and Lasnik 2003, Merchant 2008, 2013, among others). On the other hand, others propose that the elided constituent and its antecedent must be semantically identical (Dalrymple et al. 1991; Hardt 1992; Ginzburg and Sag 2000; Merchant 2001, Hartman 2011; Messick and Thoms 2016; among others). In this section, I briefly review these two approaches to Parallelism.

1.2.1.1. Syntactic parallelism

Chomsky (1964) suggests that ellipsis is an instance of transformation occurring in syntax, and argues that a transformation associated with ellipsis deletes a constituent which is structurally identical to another constituent.

Lasnik (1995) also argues that formal identity is necessary in order for a constituent to be elided, through explaining the asymmetry in English VP ellipsis (VPE) with auxiliary verbs, as shown in (6).

- (6) a. John slept here, and Mary will ~~sleep here~~, too.
b. *John was here, and Mary will ~~be here~~, too.

In both (6a) and (6b), the antecedent contains the past form of the verb, while the ellipsis site contains the bare form of the verb. However, VP ellipsis is allowed only in (6a). In order to account for this mysterious asymmetry, Lasnik proposes that main verbs are pulled out of the lexicon with a bare form, and come to surface with verbal morphology through Affix Hopping. On the other hand, auxiliary *be* enters syntactic structure fully inflected. Given this, the (un)grammaticality of the sentences in (6) can be explained as follows: In (6a), *slept* is introduced into the derivation with a bare

form *sleep*, and thus, at some stage in the derivation (i.e. before Affix Hopping occurs), *slept* in the first conjunct and *sleep* in the second conjunct are identical. However, in (6b), the auxiliary verb *was* is never identical to *be* in the second conjunct throughout the derivation. Since formal identity in (6b) is not satisfied, VPE cannot occur, unlike in (6a).

In further motivation of a syntactic identity requirement, Merchant (2008, 2013) observes that active-passive mismatch is not allowed in sluicing, as shown in (7).

- (7) a. *Joe was murdered, but we don't know who ~~murdered Joe~~.
b. *Someone murdered Joe, but we don't know who by/ by whom.

In (7), the active sentences are almost parallel to their corresponding passive sentences in semantics. Nonetheless, ellipsis is not legitimate. However, unlike in sluicing, voice mismatch is allowed in VPE.

- (8) a. Actually, I have implemented it [= a computer system] with a manager, but it doesn't have to be ~~implemented with a manager~~.
b. A: Has this ever been tested?
B: There's never been a reason to ~~test it~~.

Merchant proposes that the syntactic identity requirement can account for the asymmetry between (7) and (8) as follows: the structure of verbal domains is VoiceP

> νP > VP, and Voice contains either the [Active]-feature or the [Passive]-feature. In the case of sluicing, the ellipsis site is TP, and thus, it contains VoiceP. This means that Voice inside the ellipsis site is different from its antecedent in a voice feature. Consequently, syntactic parallelism is not satisfied. On the other hand, in VPE, the ellipsis site is νP , and thus, the voice feature resides outside the ellipsis site. In this case, since the ellipsis site and the antecedent are syntactically identical, voice mismatch is allowed.

1.2.1.2. Semantic parallelism

Despite the arguments for the syntactic identity condition on ellipsis, Merchant (2001) argues that an elided constituent and its antecedent must be semantically identical, in order for the meaning of the unpronounced constituent to be recovered in an appropriate way. This is implemented with the notion e-GIVENNESS.

(9) Focus condition on ellipsis (based on Merchant's (2001) focus condition)

A phrase α can be deleted only if α is e-GIVEN.

The definition of e-GIVENNESS can be illustrated in (10), where F-clo represents F-closure, defined in (11).

(10) e-GIVENness

An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo \exists -type shifting,

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

(11) F-closure

The F-closure of α is the result of replacing F(ocus)-marked parts of α with \exists -bound variables of the appropriate type (modulo \exists -type shifting).

Roughly speaking, the semantic identity condition in (10) can be defined as a mutual entailment condition between the antecedent constituent and the elided constituent. If one does not entail the other, ellipsis cannot occur. Here is an example.

(12) ABBY called Chuck an IDIOT after BEN did ~~call Chuck an idiot~~.

The antecedent of the elided constituent VP (i.e. VP_A) is [_{VP} call Chuck an idiot]. The result of \exists -type shifting of the antecedent VP (i.e. VP_A') can be represented in (13a).

The F-closure of the of elided VP (i.e. VP_E), is illustrated in (13b)

- (13) a. $VP_A' = \exists x.x$ called Chuck an idiot.
b. $F\text{-clo}(VP_E) = \exists x.x$ called Chuck an idiot.

Since the VP_A' entails the $F\text{-clo}(VP_E)$, (i) in the definition of e-GIVENNESS in (10) is satisfied. (ii) in (10) is also satisfied, because the VP_E' (i.e. the result of \exists -type shifting of the elided VP) entails the $F\text{-clo}(VP_A)$.

- (14) a. $VP_E = \exists x.x$ called Chuck an idiot.
b. $F\text{-clo}(VP_A) = \exists x.x$ called Chuck an idiot.

Now, consider the following sentence where VP ellipsis is not licensed.

- (15) *ABBY called Chuck an IDIOT after BEN did ~~insult Chuck~~.

In (15), the result of \exists -type shifting of the VP_E and the $F\text{-clo}(VP_E)$ can be represented in (16a) and (16b), respectively.

- (16) a. $VP_E' = \exists x.x$ insulted Chuck.
b. $F\text{-clo}(VP_E) = \exists x.x$ insulted Chuck.

Since neither (16a) entails the $F\text{-clo}(VP_A)$, shown in (14b), nor (16b) entails the VP_A' , illustrated in (13a), VP in (15) cannot be elided.

The view that semantic identity is necessary for ellipsis has been developed by many other researchers (see Takahashi and Fox 2005; Hartman 2011; Messick and Thoms 2016, among others).

1.2.2. Licensing

Even though Parallelism (or the identity condition) between the elided constituent and the antecedent constituent is satisfied, there are some cases where ellipsis is not permitted, as illustrated in (17).

- (17) a. *I heard John criticized Mary, and Bill heard ~~John criticized Mary~~, too.
b. *The president requires that every state prepare for an earthquake, and the governor requires that every city ~~prepare for an earthquake~~, as well.

In (17), the antecedent constituent and the elided constituents are syntactically/semantically identical. In order to explain the ungrammaticality in (17), researchers have suggested that an appropriate functional head which licenses ellipsis is needed (Zagona 1982, 1988a, 1988b; Saito and Murasugi 1990; Lobeck 1990, 1993, 1995; Potdam 1996; Johnson 2001; Martin 2001; Merchant 2001, 2004; Gergel 2006; Aelbrecht 2010; Baltin 2007, 2012, among others). According to their analyses, the sentences in (17) are ungrammatical since there is no appropriate licenser.

It has been argued that functional heads with a particular property/feature can function as the licenser of ellipsis. For instance, Martins (1994) suggests that only functional heads bearing a strong feature, which motivates head movement of verbs, can license V-stranding VP ellipsis. On the other hand, Lobeck (1990, 1995) and Saito and Murasugi (1990) argue that only agreeing functional heads, which contain a feature for Agree, can license ellipsis of their complements (e.g. C with the [+wh]-feature, T with the [+Tns]/[+Agr]-feature, and D with the [+Poss]/[+Plural]-feature).

Let us take NP ellipsis as an example (This type of ellipsis is called \bar{N} -ellipsis in Saito and Murasugi 1990). In (18), NPs with a particular feature, selected by D, can be elided.

- (18) a. John's [~~NP talk~~] was short, but Mary's [_{NP} talk] was too long.
b. Although she might buy these [~~NP books on art history~~], Mary said she wouldn't buy those [_{NP} books on art history]. (Lobeck 1990:350)

In (18a), D bears the [+Poss]-feature, assuming that genitive case is assigned by D with the [+Poss]-feature. On the one hand, in (18b), D contains the [+Plural]-feature. On the other hand, Ds which do contain neither the [+Poss]-feature nor the [+Plural]-feature (e.g. *the, a, this*) do not allow the elision of their complement NP, as shown in (19).

- (19) a. *Sue toyed with the idea of buying a [_{NP} windsurfer], then decided she didn't want a [~~NP windsurfer~~] after all.
b. *Although John doesn't like this [_{NP} brand of frozen pizza], he likes that ~~brand of frozen pizza~~. (Lobeck 1990:351)

Even though it is necessary to discuss if these approaches are correct, there seems to be a consensus that ellipsis is permitted only when a certain functional head is (locally) present in the sentence. This requirement is not restricted to English. According to Aelbrecht (2010), in Dutch, the complement of deontic modals can be

elided, while that of epistemic modals cannot, as illustrated in (20) and (21), respectively.

(20) a. Jessica wil niet gaan werken morgen, maar ze moet
Jessica wants not go work tomorrow but she must
~~gaan werken morgen.~~

go work tomorrow

‘Jessica doesn’t want to go to work tomorrow, but she has to.’

b. Je hoeft niet te helpen, maar je mag altijd ~~helpen.~~

you need not to help but you may always help

‘You don’t need to help, but you are always welcome to.’

(21) a. Arne zegt dat hij niet de hele taart heeft opgegeten,

Arne says that he not the whole pie has up.eaten

maar hij moet wel ?*(de hele taart hebben opgegeten),

but he must PRT the whole pie have up.eaten

want ze is weg.

for she is always

‘Arne says he didn’t eat the whole pie, but he must have, for it’s gone.’

b. Klaas zegt dat hij al klaar is met zijn huiswerk,
Klaas says that he always ready is with his homework
maar hij kan toch niet *(al klaar zijn met zijn huiswerk).
but he can PRT not always ready his with his homework
'Klaas says that he's done with his homework, but he can't be.'

The contrast between (20) and (21) indicates that deontic modals are the ellipsis licensor.

This dissertation does not deal with the exact nature of licensing. Nonetheless, the reason licensing remains important to my analysis is that a part of this dissertation discusses the relation between the derivational point where all the featural requirements of the licensor of XP ellipsis are satisfied and the timing of XP ellipsis. In section 2.4.3, I argue that when the featural requirements of the licensor of XP ellipsis are satisfied determines the timing of XP ellipsis. This can account for why an element base-generated inside the ellipsis site is able to be pronounced out of the ellipsis site in some cases, but not in other cases.

1.2.3. MaxElide

Another condition on ellipsis (and extraction) that has been widely assumed is MaxElide. Merchant (2001) and Lasnik (2001) note that sluicing and VP ellipsis exhibit a crucial asymmetry in island violation repair by ellipsis, as shown in (22) and (23), respectively.

- (22) a. They want to hire someone who speaks a Balkan language, but I don't know which₁ ~~they want to hire someone who speaks t₁~~.
- b. It appears that a certain senator will resign, but which senator₂ ~~it appears that t₂ will resign~~ is still a secret.
- c. Saily asked if somebody was going to fail Syntax One, but I can't remember who₃ ~~she asked if t₃ was going to fail Syntax One~~.
- d. She said that a biography of one of the Marx brothers is going to be published this year, but I don't remember which₄ ~~she said that a biography of t₄ is going to be published this year~~.
- (23) a. *They want to hire someone who speaks a Balkan language, but I don't know which₁ they do ~~want to hire someone who speaks t₁~~.
- b. *It appears that a certain senator will resign, but which senator₂ it does ~~appears that t₂ will resign~~ is still a secret.
- c. *Saily asked if somebody was going to fail Syntax One, but I can't remember who₃ she did ~~asked if t₃ was going to fail Syntax One~~.
- d. *She said that a biography of one of the Marx brothers is going to be published this year, but I don't remember which₄ she did ~~say that a biography of t₄ is going to be published this year~~.

Lasnik (2001) also points out that *wh*-extraction out of the ellipsis site in VPE is restricted even when there is no island violation, whether *wh*-phrases move either

across a clause boundary or within a clause, as illustrated in (24) (See also Fox and Lasnik 2003).

- (24) a. *They said they heard about a Balkan language, but I don't know which
Balkan language₅ they did ~~say they heard about~~ *t*₅.
- b. ??They studied a Balkan language but I don't know which Balkan
language₆ they did ~~study~~ *t*₆.

Postulating a general ban on *wh*-extraction in VPE is not tenable, since, as illustrated in (25), *wh*-extraction out of the ellipsis site in VPE is permitted.

- (25) a. I know what I like and what₁ I don't ~~like~~ *t*₁. (Johnson 2001)
- b. I think you should adopt one of these puppies, but I can't predict which
one₂ you actually will ~~adopt~~ *t*₂. (Schuyler 2001)
- c. Who will Bill kiss, and who₃ will John ~~kiss~~ *t*₃. (Messick and Thoms 2016)

In order to account for the ungrammaticality of the sentences in (23) and (24), Merchant (2001) suggests that there is a ban on eliding constituents smaller than the biggest deletable constituent when *wh*-phrase is extracted out of the ellipsis site. On the basis of this, Merchant (2008) proposes an inviolable constraint, called MaxElide. MaxElide can be defined as in (26).

(26) MaxElide

Let XP be an elided constituent containing an \bar{A} -trace. Let YP be a possible target for ellipsis. YP must not properly contain XP ($XP \not\subset YP$).

Informally speaking, this constraint requires that ellipsis targets the largest constituent between/among the deletable phrases containing an \bar{A} -trace. The contrast between (23) and (25) can be explained with MaxElide as follows: In (23), the ellipsis site contains an \bar{A} -trace. However, the ellipsis site is not the largest deletable constituent containing an \bar{A} -trace. This is because sluicing is possible as shown in (22). This is an infringement of MaxElide. On the other hand, the examples in (25) differ in this regard, in that there is no larger deletable constituent containing an \bar{A} -trace than the phrase that is elided, which obeys MaxElide. In the same vein, the sentences in (24) are ungrammatical, since sluicing is possible, as shown in (27).

- (27) a. They said they heard about a Balkan language, but I don't know which
Balkan language₅ ~~they said they heard about~~ t_5 .
- b. They studied a Balkan language but I don't know which Balkan language₆
~~they studied~~ t_6 .

Even though Merchant's MaxElide can account for the contrast between (23) and (25), it is controversial if MaxElide effects can be accounted for through other conditions on ellipsis without the formulation of MaxElide. This is because extraction facts cannot be fully covered by MaxElide in (26). For instance, Lasnik and Park

(2013) point out that the formulation of MaxElidce faces an empirical problem. MaxElide predicts that the sentences in (28) would be grammatical, contrary to fact (See Merchant 2008).

- (28) a. *Abby said they heard about a Balkan language, but I don't know what kind of language₁ Ben did ~~say they heard about~~ *t*₁.
- b. *Abby heard a lecture about a Balkan language, but I don't know what kind of language₂ Ben did ~~hear a lecture about~~ *t*₂.

In the sentences above, a contrasting element is located outside the ellipsis site. Due to this, sluicing is not possible. Thus, the ellipsis site in each sentence in (28) is the largest deletable phrase containing an \bar{A} -trace. This indicates that the ill-formedness of those sentences is not due to MaxElide. Given this, some researchers argue that MaxElide effects must be explained in another way without the formulation of MaxElide (see Lasnik and Park 2013; Messick and Thoms 2016).

1.3. Overview of this work

So far, I have briefly reviewed how the meaning of the elided constituent can be fully recovered, what is needed for recoverability, how or by what ellipsis and extraction out of the ellipsis site is licensed. The proposal advanced in this dissertation is based on the derivational approach to ellipsis. By introducing and analyzing novel English data that exhibit an unexplained restriction in extractability, I investigate when ellipsis occurs and what is elided as a result of ellipsis.

Chapter 2 introduces two novel puzzles related to English copular phrase ellipsis (CoPE) in which the ellipsis site contains the copula and a predicate AP. Firstly, the embedded CoPE does not allow extraction of object *wh*-phrases out of the ellipsis site, while matrix CoPE does. Secondly, unlike embedded CoPE, embedded regular VPE permits extraction of object *wh*-phrases. In order to resolve the first puzzle, I propose the timing of ellipsis based on the derivational approach to ellipsis as follows: XP ellipsis occur as soon as all the featural requirements of the licensor of XP ellipsis are satisfied. Additionally, I suggest that the contrast between embedded CoPE and embedded regular VPE in extractability follows from the difference in the size of the domain of verbs – the domain of the copula, which is semantically vacuous, does not contain VoiceP, while the extended domain of regular verbs, which have a semantic contribution, does.

In Chapter 3, I propose that ellipsis is a syntactic operation that eliminates phonological feature matrices (PFMs) of lexical items inside the ellipsis site, assuming that every lexical item contains formal feature matrices (FFMs) and PFMs. Since elements inside the ellipsis site are deprived of their PFMs, vocabulary insertion does not apply to those elements at PF. That is, segmental content (i.e. phonological features) responsible for sound of lexical items cannot be inserted into elements that have been deprived of PFMs. One prediction made by this proposal is that elements that lack their PFMs as a result of ellipsis can take part in further syntactic/formal operations triggered by formal features. This is because elided elements still contain FFMs. Additionally, I propose a prosody constraint all *wh*-questions must obey, adopting and modifying Richards' (2016) Contiguity. This can

successfully rule out a type of elliptical sentences that seems to be a counterargument to the present analysis.

Chapter 4 presents cross-linguistics evidence compatible with the proposals made in chapter 2 and 3. I first investigate the extractability contrast between Korean and Farsi light verb stranding ellipsis, where the complement of the light verb located in *v* is elided. This supports that the timing of ellipsis rests on the derivational point at which all the featural requirements of the ellipsis licenser are satisfied. Additionally, I argue that Korean light verb stranding ellipsis and British English *do* construction where the complement phrase of *do*, namely VP, is elided, lend further support to the proposal that only PFMs are eliminated from the lexical items as a result of ellipsis, and that elided elements are eligible for further formal operations which occurs after ellipsis. Lastly, it is argued that the prosody constraint proposed in chapter 3 also applies to *wh*-scrambling out of the ellipsis site in Korean light verb stranding ellipsis.

Finally, chapter 5 provides concluding remarks.

Chapter 2: When does ellipsis occur?

2.1. Introduction

In this chapter, I make a novel proposal regarding the timing of ellipsis under the derivational approach to ellipsis, by using English copular phrase ellipsis (CoPE), which has received less attention than other types of ellipsis from researchers. I will discuss the structure of English copular constructions I assume throughout this dissertation in section 2.1, and introduce novel puzzles in English CoPE with respect to the extractability of object *wh*-phrases out of the ellipsis site in section 2.2. In section 2.3, I propose that the timing of XP ellipsis depends on the derivational point where all the featural requirements of the licenser of XP are satisfied. That is, depending on the point where all the featural requirements of the licenser are satisfied, the timing of ellipsis of XP can vary. On the basis of this proposal, I resolve the puzzles of English CoPE introduced in section 2.2. This analysis is also supported by subject *wh*-phrase extraction in Standard English CoPE, predicate ellipsis in Standard English, and object *wh*-phrase extraction in two non-Standard English variants – Indian Vernacular English and Belfast English. Section 2.4 briefly reviews and critiques existing derivational approaches, showing that the puzzles mentioned in section 2.2 cannot be accounted for with those approaches. In section 2.5, several theoretical implications of the analysis of English CoPE will be provided. 2.6 presents concluding remarks.

2.2. The structure of copular constructions

Regular transitive sentences and unergative sentences are exemplified in (1a) and (1b), respectively. In each sentence, the subject receives an Agent θ -role related to the verbs – *John* in (1a) is a criticizer and *Bill* in (1b) is a walker.

- (1) a. John criticized the person who edited this book.
b. Bill walked slowly.

On the other hand, the subjects in (2) do not receive a θ -role associated with the copular verbs. The copula *be* is semantically vacuous and functions just as a syntactic linker, which connects the subject and the predicate.

- (2) a. John is a good teacher.
b. Bill was proud of his father.

In the case of the sentences in (1), the subjects are base-generated outside the c-command domain of the lexical verbs. Meanwhile, Stowell (1978) suggests that the subject and the predicate of copular constructions exemplified in (2) are generated within a small clause located below the copular verb. The subject raises to its surface position over the copula to satisfy the Extended Projection Principle (EPP). This is represented in (3). In (3b), the predicate *a singer* and its subject *John* form a small clause. The subject moves to SpecTP, as illustrated in (3c).

- (3) a. John is a singer.
 b. [TP is [SC [John] [a singer]]]
 c. [TP [John₁] is [SC t₁ [a singer]]]

Because of this property of the copula, Stowell analyzes the copula as a raising verb.

Italian provides evidence that Stowell's analysis is correct. According to Burzio (1986), the reflexive *si* can occur with non-derived subjects, but not with derived subjects.² In (4a), the experiencer subject of the transitive verb can host *si*. On the other hand, the subject in the passive sentence, which is base-generated in the complement position of the verb, cannot, as shown in (4b).

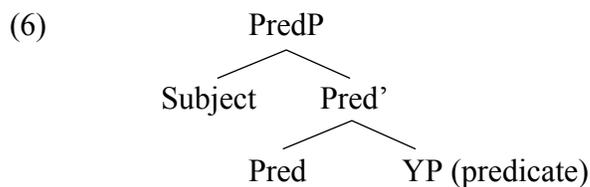
- (4) a. Essi₁ si₁ amano.
 they self love
 'They love themselves.'
- b. *I ragazzi₂ si furono posti t₂ di fronte
 the kids self were seated.PL in front of
 'The kids were placed before each other'

² Under the VP-Internal Subject Hypothesis, subjects (in English) are located in a derived position, since they have to move from their base position to Spec,TP in order to satisfy the EPP on T. I assume here that 'non-derived subjects' refers to external arguments of verbs that are generated outside the c-command domain of verbs, while derived subjects are arguments generated in a position within the c-command domain of verbs.

Now, consider the following sentence containing the copula *erano*. The subject cannot occur with *si*, which indicates that the subject is generated in the post-copular position (i.e., it is base-generated within the c-command domain of the copula).

- (5) * Essi₃ si₃ erano fedeli.
 they self were faithful
 ‘They were faithful to themselves.’

On the basis of the analysis that copular verbs are raising verbs (see also Couquaux 1981 for French), Bowers (1993) argues that the small clause containing the subject and the predicate of copular constructions is Predication Phrase (PredP) headed by a functional projection Pred. This head is a mnemonic for *predication*. Pred takes a maximal projection serving as a predicate as its complement, while the subject of the predicate is base-generated in the specifier position of PredP. This can be schematized as in (6).



Under Bowers’ analysis, the maximal projection YP can be VP, AP, NP, and PP. That is, all the lexical categories (i.e., V, A, N and P) do not directly assign a θ -role to their subjects, but need a functional head Pred in order to take a subject. This theory can

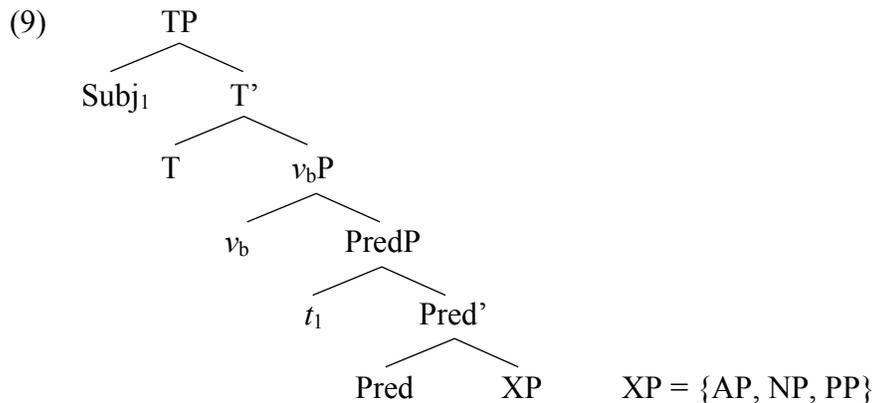
explain the predication structures of lexical categories in a uniform way. However, Baker (2003) argues that, unlike the other lexical categories, VPs do not need Pred to introduce their external arguments, while APs, NPs and PPs do. One argument comes from the following contrast.

- (7) a. Bill₁ is [_{PredP} *t*₁ unhappy] and [_{PredP} *t*₁ in trouble].
b. I consider John₂ [_{PredP} *t*₂ crazy] and [_{PredP} *t*₂ a fool]. (Bowers 1993)
- (8) a. *Eating poisoned food made Chris sick and die.
b. *A hard blow to the head made Chris fall and an invalid. (Baker 2003)

At first glance, the conjoined predicates in (7a) are AP and PP, and those in (7b) are AP and NP. Bowers accounts for how they are conjoined in (7) as follows: two PredPs containing AP and PP are conjoined in (7a), and two PredPs dominating AP and NP are conjoined in (7b). The fact that the sentences in (8) are ill-formed provides evidence that VPs are not contained in PredP, unlike APs, NPs and PPs. Otherwise, it is expected that the sentences in (8) would be grammatical, contrary to fact. Following Baker, I will assume that APs, NPs and PPs are selected by Pred, while VPs are not.³ The structure of verbal domains will be discussed in detail in section 2.4.3.

³ In Bowers (1993), the original category of the functional head that takes a predicate complement is Pr. However, I will use Pred instead, in order to emphasize the distinction whereby the head relevant to predication does not take a VP complement.

We have seen that APs, PPs, and NPs may serve as predicates selected by Pred, and that their subjects are base-generated in Spec,PredP. In copular constructions, the copula *be* occurs with PredP. Even though they differ in certain details, Moro (1997), Baker (2003) and Mikkelsen (2005) assume that the copula selects PredP.⁴ In the following discussion, I adopt the structure of copular constructions suggested in Mikkelsen (2005), whereby PredP is selected by the functional head v_b in which the copular verb is base-generated, and T selects v_b P. Mikkelsen assumes that v_b is a subtype of unaccusative v . The difference between regular v and v_b is that the former takes a VP complement, while the latter a PredP complement. The structure of copular constructions is illustrated in (9).



⁴ The base position of the copula is not uncontroversial. Den Dikken (2006) proposes that the copula is generated in Pred functioning as a RELATOR. Here, I have adopted the assumption that the copula is generated outside PredP, since this assumption is more compatible with the aforementioned empirical data from Italian showing that subjects in copular constructions are generated in the post-copular position. That is, if the copula were generated in Pred, it would not be compatible with the generalization that, in Italian, subjects generated below verbs cannot occur with reflexive *si*, while subjects generated higher than verbs can.

When T merges with v_bP , the subject obligatorily moves to [Spec,TP] to satisfy the EPP. The copular verb undergoes head movement to T only when no auxiliary verb is located in T. If T is occupied by a modal, it does not move to T. This is shown in (10).

- (10) a. John is not fond of his teacher.
b. John might not be fond of his teacher.

Given that sentential negation *not* demarcates the verbal domain whether it is an adverb located in the highest position of the verbal domain or a head of NegP (or ΣP) taking the highest projection of verbal domain as a complement (Pollock 1989; Laka 1990; Baltin 1993, among many others), the sentences in (10) indicate that the copula verb stays inside the verbal domain when a modal is located in T.⁵

To summarize, in copular constructions, the copula takes a PredP complement. Pred is a functional head that selects AP, NP, or PP as a complement, and the subject of the predicate is generated in the specifier position of PredP. The copula is base-generated in v_b , a type of unaccusative little v , and selects PredP. When T merges with v_bP , the subject undergoes movement to Spec,TP in order to satisfy the EPP requirement. The copula undergoes movement only when T is not occupied by a modal. In the case where a modal is located in T, the copula remains in its base position.

⁵ A substantial body of work (Bjorkman 2011, Iatridou and Zeijlstra 2013, Harwood 2015, inter alia) suggests that scope bearing modals are base-generated lower than T, and move to T. However, in this dissertation, I adopt the assumption that modals are base-generated in T.

2.3. English copular phrase ellipsis and extraction puzzles

In the previous section, we investigated the structure of copular constructions to the extent relevant to CoPE. On the basis of this, consider the following sentences.

- (11) a. John might be proud of his sister, and Nate might, too.
b. Although Nancy will be fond of this book, Bill won't.
c. I believe that Mary will be proud of her father, but Tom believes that she won't.
d. Most people think that John might be fond of seafood, but I think that he might not.

In these sentences, the ellipsis sites contain the copula *be*. Assuming that the modals in (11) are located in T and that there is no additional maximal projection between TP and v_bP , the ellipsis site should be the sister node of the modal. Given the structure of copular constructions in (9), we can conclude that the ellipsis site in English CoPE, exemplified in (11), is v_bP .

The first puzzle in CoPE is that matrix vs. embedded CoPE exhibits an asymmetry with respect to extraction of object *wh*-phrase out of the ellipsis site: object *wh*-extraction out of the ellipsis site is not allowed when the embedded v_bP is elided, while it is allowed when the matrix v_bP deletes. This is illustrated in (12) and (13), respectively.⁶

⁶ I tested these sentences with thirteen native speakers of American English. Ten of them report a significant contrast between sentences like (12) and sentences like (13) – the former are unacceptable, while the latter are acceptable. Two speakers report

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

Researchers advocating the non-derivational approaches to ellipsis have argued that ellipsis and extraction out of ellipsis site are subject to two conditions – the Identity Condition/Parallelism, and MaxElide (Merchant 2001, 2008, 2013; Lasnik 2001; Takahashi and Fox 2005; Hartman 2011, Lasnik and Park 2013, Griffiths and Lipták 2014; Messick and Thoms 2016, inter alia). There are several definitions of Parallelism. Additionally, there is not yet a full consensus on whether Parallelism should be evaluated syntactically or semantically. Nonetheless, suppose

that sentences like (12) are marginal and sentences like (13) are totally acceptable. The remaining speaker judges that they are all unacceptable.

first that Parallelism is a semantic constraint. Let us use Takahashi and Fox's (2005) definition of Parallelism, stated in (14)-(15).

(14) For ellipsis of EC [elided constituent] to be licensed there must exist a constituent, which reflexively dominates EC, and satisfies the parallelism condition in (15). [Call this constituent the parallelism domain (PD).] (Rooth 1992)

(15) *Parallelism*

PD satisfies the parallelism condition if PD is semantically identical to another constituent AC, modulo focus-marked constituents.

According to the condition in (14), in principle, the PD may be either the elided constituent itself or larger. According to the definition of Parallelism in (15), in the case where the elided constituent contains a variable whose binder is located outside the elided constituent, the PD must be larger than the EC. In Takahashi and Fox's analysis, the EC is not semantically identical to its antecedent when it contains a variable whose binder is placed outside the EC (i.e., a rebinding configuration). Then, in order for the Parallelism in (15) to be satisfied, the PD must be larger than EC, so that it can contain the binder.

On the basis of this, Takahashi and Fox define MaxElide as follows:

(16) MaxElide

Elide the biggest deletable constituent reflexively dominated by the PD.

Hartman (2011) argues that all types of movement leave traces, and that A-traces, \bar{A} -traces, and the traces of head movement are all interpreted as bound variables for the purpose of (15). According to this, the LF representation of (12a) is the one given in (17).

- (17) I don't know [_{CP} what λx . [_{TP} Bill λy . shouldn't [_{vbP} be [_{PredP} y proud of x]]]]
... idea about [_{CP} what λm . [_{TP} he λn . should [_{vbP} be [_{PredP} n proud of m]]]].

In (17), the underlined part of the representation is a PD. The PD is semantically identical to its antecedent (modulo Vehicle Change of *Bill* to *he* (Fiengo and May 1994)), and thus, this sentence obeys Parallelism. Assuming that a focused element *should* cannot be elided, the largest deletable constituent in this example is v_bP , which means that MaxElide is also satisfied in (12a). This is also true in the other sentences in (12). Consequently, semantic Parallelism and MaxElide do not seem to be able to account for the ungrammaticality of the sentences in (12).

Now, suppose that elided constituents must be syntactically identical to their antecedent constituents. Then, the syntactic representation of (12a) would be as follows:

- (18) I don't know [_{CP} what₁ [_{TP} John₂ shouldn't [_{vbP} be [_{PredP} t₂ proud of t₁]]]], but
 ... idea about [_{CP} what₃ [_{TP} he₂ should [_{vbP} be [_{PredP} t₂ proud of t₃]]]].

The syntactic structure of the elided constituent is identical to that of its antecedent. Additionally, the elided part in this example is the largest deletable constituent. Thus, both Parallelism and MaxElided are satisfied in (12a).⁷ The other sentences in (12) also obey these two constraints.

The second puzzle is that while object *wh*-phrase extraction is not permitted in embedded CoPE, as already mentioned in (12), it is allowed in embedded regular VPE. Extraction out of the ellipsis site is freely allowed in both the matrix clause and the embedded clause in regular VPE, as illustrated in (19).

⁷ Messick and Thoms (2016) suggest that only \bar{A} -traces and traces of head movement, but not A-traces, are interpreted as bound variables, and that every trace of a *wh*-element left at phase edges must be a bound variable. Additionally, they reject MaxElide. If this is correct, and if *v_bP* headed by the copula is a phase (Deal 2009; see also Legate 2003 and Sauerland 2003), the LF representation of (12a) and (12b) can be illustrated as in (i) and (ii), respectively.

- (i) I don't know [_{CP} what λx. [_{TP} John shouldn't [_{vbP} x. λx' be [_{PredP} proud of x']]]]
 ... idea about [_{CP} what λm. [_{TP} he should [_{vbP} m. λm' be [_{PredP} proud of m']]]].
- (ii) ... wonders [_{CP} what λx. [_{TP} Tom will [_{vbP} x. λx' be [_{PredP} fond of x']]]], she does
 not wonder [_{CP} what λm. [_{TP} Dan will [_{vbP} m. λm' be [_{PredP} fond of m']]]].

They adopt Griffith and Lipták's (2014) definition of Parallelism, stated in (iii).

(iii) Scopal Parallelism in Ellipsis

Variables in the antecedent and elided clause must be bound from parallel positions.

The variables in the antecedent constituents and the elided constituents in (i) and (ii) are bound from parallel positions, and thus, Parallelism is satisfied. Thus, Messick and Thoms' analysis cannot explain the ungrammaticality of the sentences in (12), either.

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

To recapitulate, there are two puzzles in English CoPE. First, CoPE in embedded clauses does not allow object *wh*-phrase extraction out of the ellipsis site, while CoPE in matrix clauses does, as illustrated in (12) and (13). I have shown that the unavailability of object *wh*-phrase extraction out of the ellipsis site in embedded CoPE cannot be accounted for with the existing conditions on ellipsis and extraction - Parallelism and MaxElide. Second, embedded CoPE does not allow object *wh*-phrase extraction, while embedded regular VPE as well as matrix regular VPE allows object *wh*-phrase extraction, as shown in (19).

2.4. The timing of ellipsis

As I mentioned in section 1, a variety of ellipsis theories have been proposed in the generative literature. One of them is the traditional PF deletion theory, which assumes that elliptical sentences are full-fledged sentences and a constituent already present in the discourse is deleted. On this approach, ellipsis occurs in the phonological component of the grammar. That is, ellipsis is a PF operation. (Sag 1976, 1977; Merchant 2001; Lasnik 2001 *inter alia*). On the other hand, the LF copying theory presumes that an unpronounced constituent is a phonologically null element in narrow syntax (Williams 1977; Chung et al. 1995; *inter alia*). In order for the elliptical sentences to be fully interpreted, the meaning of the antecedent is copied

into the unpronounced constituent at LF. On this view, ellipsis is not deletion of sound.

However, a growing body of work argues that ellipsis occurs derivationally. That is, ellipsis is a result of particular operations that occur in the narrow syntax. Additionally, whether a constituent can be extracted out of the ellipsis site or not is determined by the interplay between the timing of movement of extracted elements and the timing of ellipsis (Baltin 2007, 2012; Aelbrecht 2010; Sailor 2012; Boskovic 2014; Park 2016, 2017 *inter alia*). To be specific, extraction of an element out of the ellipsis site is possible only when it can be located outside the ellipsis site at the point of ellipsis. On the other hand, if the putative moving element is still inside the ellipsis site when ellipsis occurs, extraction is impossible. In derivational approaches to ellipsis, it is also assumed that the licenser of XP ellipsis is a functional head. The fact that a head can undergo head movement in particular circumstances leads us to ask exactly when XP ellipsis occurs in cases where the licenser of XP undergoes head movement.

In this chapter, I argue that head movement can affect the timing of ellipsis, adopting and developing the view that ellipsis occurs derivationally in overt syntactic structure. To be specific, when the licenser of XP ellipsis undergoes head movement, XP ellipsis can be delayed. The remainder of this section is organized as follows. In 2.4.1. I propose that the licenser of English CoPE is identical to that of regular verb phrase ellipsis (VPE). 2.4.2 briefly reviews the mechanisms of head movement, which are relevant to the proposal that will be advanced in section 2.4.3. Then, in

2.4.3, I suggest a novel derivational approach to the timing of ellipsis, which can resolve the aforementioned extraction puzzles in English CoPE.

2.4.1. The licensor of English CoPE

In English verb phrase ellipsis (VPE), a phrase containing a lexical verb, its complements, and low adjuncts can be unpronounced under identity with a phrase that is already present in the discourse, as illustrated in (20) (Hankamer and Sag 1976; Sag 1980; Zagana 1988; Lobeck 1995; Merchant 2001, among others).

- (20)
- a. John must finish his homework by tomorrow, and Bill must, too.
 - b. Mina might not criticize John's novels, but Tom might.
 - c. Although Dan wants to invite Tom to his party, he won't.
 - d. John wanted to stay home, but he didn't.
 - e. Mary walks quickly, and Bill does, too.

Regarding the licensing mechanism of VPE, it is widely assumed that an overt element in T/Infl is the licensor of VPE (Lobeck 1995; Zagana 1988). I will call this the overt-T approach.

Now, let us discuss whether the overt-T approach is able to account for the (un)availability of VPE occurring inside subjunctive complements. Subjunctive complements are selected by a limited set of predicates, such as *be necessary*, *demand*, and *insist*. As illustrated in (21), T in subjunctive complements is not occupied by an overt element.

- (21) a. It is necessary that the company hire more employees.
 b. The doctor demands that John live with his family.
 c. John insists that they be more discreet.

Moreover, no overt modal can be base-generated in subjunctive T, as illustrated in (22a-b). Periphrastic *do* is not in subjunctive complements, either, as shown in (22c-d).

- (22) a. *The police require that the spectator must stand behind the barricade.
 b. *He demanded that the successful candidates can speak German.
 c. ?*Mom demanded that you do be careful.
 d. *Jack asks that we don't cut down his bean stalk just yet. (Potsdam 1996)

The auxiliary verb *be* is not permitted to move to T in subjunctive complements. This contrasts with the auxiliary verb *be* in finite clauses which moves to T from a lower position (for inflectional purposes) when T is not occupied by another auxiliary verb. This is shown by the fact that the auxiliary verb *be* cannot be moved over sentential negation or adverbs that demarcate the verbal domain.

- (23) a. *In the interest of matrimonial bliss, the counselor suggests that you be not keeping secrets from your wife.
 b. *Humility requires that one be not proud.
 c. *The sales manual requires that all agents be definitely paying attention to the customers' complaints and taking note of them during the exchange.

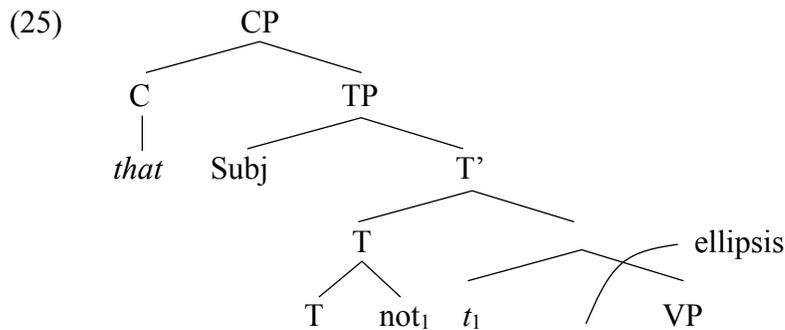
- d. *It is recommended that you be normally approved by the committee before coming to the seminar. (Potsdam 1996)

Assuming that T in subjunctive complements is occupied by an independent zero subjunctive modal, which is phonologically null (Roberts 1985; Potsdam 1996), the overt-T approach straightforwardly accounts for the ungrammaticality of (24a), as follows: since the zero modal is not overt, VPE is not licensed. Interestingly, however, when sentential negation is followed by the ellipsis site, VPE is allowed, as illustrated in (24b).

- (24) a. *We think that Mary should present her case to the committee and we will ask that Bill, too.
b. We think that Mary should present her case to the committee but we will ask that Bill not. (Potsdam 1996)

In both (24a) and (24b), T is occupied by a zero modal, which is phonologically null. The only difference between (24a) and (24b) is the absence/presence of sentential negation *not* in the subjective complements. This seems to indicate that the licenser of VPE in this case is not the subjective zero modal, but sentential negation. If this is so, (24b) seems to be a problem for the overt-T approach, since VPE can be licensed even when T is occupied by a phonologically null element. To resolve this problem, Baltin (1993) proposes that sentential negation in this case can move and be adjoined to T. After movement of negation, T becomes overtly filled, and thus, VPE can be

licensed. Assuming that sentential negation *not* is base-generated below T, VPE in subjunctive complements in (24b) is schematized in (25).⁸



Following Baltin (1993), I assume in this dissertation that sentential negation in subjunctive complements can undergo movement, putting aside the exact mechanism related to negation raising in subjunctive complements.⁹

However, the overt-T approach is incompatible with the approach I am pursuing in this dissertation for the following two reasons. Consider the following sentences.

⁸ In Baltin (1993), sentential negation is an adverb adjoined to VP (see also Wurmbrand 2001).

⁹ Besides subjunctive complements, we can find another case where sentential negation can undergo movement to T. Consider the following interrogative sentences.

- (i) a. Why must he not know that?
- b. Must not the assumptions that determine our political regulations be called illusions, as well?
- c. Might not the growth of that element be justly attributed to the presence of this people in our midst? (Corpus of Contemporary American English)

In (ia), negation remains in its base-generation position and the modal alone undergoes T-to-C movement. On the other hand, in (ib) and (ic), negation is located above TP. In order to generate these sentences, negation must move to T and complex T consisting of the modal and negation then undergo T-to-C movement. At this stage, it is not clear why sentential negation can optionally undergo movement to T.

- (26) a. John eats Korean cuisine every Sunday, but they don't.
b. Tom doesn't like singing, but they do.

In (26), the present 3rd person plural morpheme is base-generated in T. In the narrow syntax, it is a phonologically null element, assuming that *do*-support occurs at a post-syntactic component (Lasnik 1995, Bobaljik 1995, among others). If non-overt T were not able to license VPE, then under the derivational approaches to ellipsis, it is predicted that ellipsis in (26) would not be possible. This is because at the point of ellipsis in the narrow syntax, overtly unrealized elements are base-generated in T.

Additionally, in this dissertation, I (partially) adopt the Halle and Marantz's (1996) vocabulary insertion approach. All the lexical elements in narrow syntax do not contain their segmental content (i.e. phonological features) in narrow syntax. Rather, I assume that lexical items contain empty phonological feature matrices in the narrow syntax, and segmental content is inserted into the phonological feature matrices of the lexical items at PF, based on their formal/syntactic features. If ellipsis occurs as the derivation proceeds, then the narrow syntax does not know if T as the ellipsis licensor is phonologically realized or not. Consequently, when a derivational approach to ellipsis is combined with a late-insertion approach, the condition that the ellipsis licensor of VPE must be overt becomes incoherent.

In what follows, I refine the licensing condition in order to make it compatible with the assumptions I entertain in this dissertation in the service of a novel derivational approach. If lexical items do not contain any segmental content in narrow

syntax, a question that arises here is how we can make the distinction between T that can license VPE (e.g. T in declarative sentences) and T that cannot (e.g. T in subjunctive complements). I propose that the former is filled with a morphological element in the narrow syntax, while the latter is not morphologically filled. That is, in (24a), T in subjunctive complement is not occupied by any element. On the other hand, in (24b), negation moves to T, and thus, T comes to be filled.

Given this, the licensing condition on VPE can be stated as in (27), and “morphologically filled” can be described as in (28).

(27) The Licensing condition on VPE (to be modified)

The elided constituent must be c-commanded by morphologically filled T.

(28) T is morphologically filled when a morpheme is base-generated in T.¹⁰

With this condition, the grammaticality of (24a) and (24b) can be explained as follows: In (24a), T is not filled by any morpheme, and thus, VPE is not licensed. On the other hand, in (24b), since T is filled with sentential negation as a result of negation raising, VPE is licensed.

However, when T is too distant from the ellipsis site of VPE, VPE is not licensed, even though T is filled with a morpheme, as illustrated in (29). Even though the ellipsis site is c-commanded by *shouldn't*, the sentence is ungrammatical.

¹⁰ I assume here that tense affixes and modals are base-generated in T. Even though verbs do not move to T in English, tense affixes surface on verbs. This is possible if we adopt the operation Affix Hopping.

- (29) *Picasso is painting the walls but the landlord shouldn't know that I asked
that he. (Potsdam 1996)

In order to rule out elliptical sentences whose licenser is too distant from the ellipsis site such as (29), we need to incorporate a locality condition on VPE licensing into (28). When we assume that ellipsis occurs derivationally in the syntactic structure, it is not unnatural to assume that ellipsis is also subject to the conditions that are normally obeyed in the narrow syntax. I argue here that the locality constraint on VPE licensing can be reduced to Chomsky's (2001) Phase Impenetrability Condition (PIC), following Aelbrecht (2010).

Chomsky proposes that, in the case where HP is a strong phrase and ZP is the next higher phase, HP is interpreted/evaluated at ZP. In this case, the PIC can be stated as in (31).

- (30) [_{ZP} Z ... [_{HP} [H YP]]]

- (31) Phase Impenetrability Condition (PIC)

The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations.

The complement of the strong phase head *H*, namely *YP*, is Spelled-out when the next strong phase head *Z* is introduced into the derivation. Once *Z* enters the derivation, *YP* is accessible to any operation in narrow syntax.

Given this, the consequences of the interaction between ellipsis licensing and the PIC are as follows: If the ellipsis site of *VPE* is accessible from the licensor during the derivation, *VPE* is licensed. On the other hand, if the ellipsis site is not accessible from the licensor, then *VPE* is not licensed. The following sentences suggest that the locality condition on *VPE* can be reducible to the PIC.

- (32) a. John made a desk by himself, and Bill did, too.
b. Mary paid the bill, even though she was not supposed to.
c. *Since John painted the wall, Mary couldn't request that he.
d. *I will make Bill do the dishes, and Tom will make Jack.

In order to account for the (un)grammaticality of the sentences in (32), I assume the following: First, external arguments are base-generated in *Spec, VoiceP* (Alexiadou et al. 2015). Second, the highest phrase of the extended projection of lexical verbs with an external argument is *VoiceP*, which is distinct from *vP* (Marantz 1997; Alexiadou et al. 2006, Merchant 2008, 2013, Harley 2013, 2013).¹¹ Additionally, *VoiceP*, but not *vP*, is a phase when the extended projections of lexical verbs contain *Voice* (Baltin 2007, 2012; Legate 2014). Lastly, the ellipsis site of *VPE* is *vP*, rather than

¹¹ In this dissertation, the extended projection/domain of lexical verbs refers to either *VoiceP* if the structure contains a *VoiceP* layer, or *vP* when a *VoiceP* layer is not present in the structure.

VoiceP or VP (Merchant 2008, 2013; Aelbrecht 2010). On the basis of these assumptions, the elliptical sentences in (32) can be represented as in (33). The phase boundaries that are relevant to the current discussion are underlined, and the possible licensors that meet the requirements in (28) are italicized.

- (33) a. ... and [_{CP} C [_{TP} Bill [_{T'} *did* [_{VoiceP} [_{vP} ~~make a desk by himself~~]]]]], too.
- b. ... even though she was not [_{VoiceP} supposed [_{TP} *to* [_{VoiceP} [_{vP} ~~pay the bill~~]]]].
- c. ... *couldn't* [_{VoiceP} [_{vP} request [_{CP} that [_{TP} he ϕ [_{VoiceP} [_{vP} ~~paint the wall~~]]]]]].
- d. ... and Tom *will* [_{VoiceP} [_{vP} make [_{VoiceP} Jack [_{vP} ~~do the dishes~~]]]].

In (33a), as the derivation proceeds, Voice merges with the ellipsis site *vP*. Even though Voice is a phase head, its complement is not spelled-out, since a phase is evaluated/interpreted only at the next higher phase. The functional head *T*, which is filled with the past morpheme, merges with VoiceP, and it c-commands *vP*. At this point, *vP* is accessible from the licensor. Thus, *T* can license the elision of *vP*. In (33b), the embedded *vP* is visible from the morphologically filled *T*, namely infinitive *to*, and thus, VPE is licensed during the derivation. On the other hand, in (33c), the only possible licensor of VPE is the modal in the matrix clause, given the licensing condition on VPE in (28). Note that *T* in subjunctive complements is not morphologically filled, and thus, it cannot serve as the licensor of embedded VPE. The modal in the matrix clause, however, cannot look inside the embedded TP, since the embedded TP has already been spelled-out when Voice in the matrix clause merges with the matrix *vP*. Thus, VPE is not licensed. This is also true in (33d). Since

the embedded *v*P has already been spelled-out when matrix Voice is introduced into the derivation (i.e., before the licenser *will* is introduced into the derivation), the embedded *v*P is not accessible from the licenser, and thus, VPE is not licensed.

When the licensing condition in (28) is integrated with the locality condition on VPE licensing discussed above, the modified licensing condition on VPE can be formulated as follows:

(34) Licensing Condition on VPE

The elided constituent must be c-commanded by morphologically filled T which is accessible from the ellipsis site in narrow syntax.

Now, let us discuss the licensing condition on CoPE. Interestingly, CoPE exhibits the same syntactic behaviors as VPE. Subjunctive T cannot license CoPE, but sentential negation inside subjunctive complements can license it, as shown in (35a) and (35b).

- (35) a. *John requires that Bill be proud of his success, and he requires that Tom, as well.
b. ?John requires that Bill be proud of his success, but Mary requires that Tom not.

The (un)acceptability of the sentences in (35) can be accounted for with the constraint in (34) as follows: In (35a), the ellipsis site is accessible from T inside the subjunctive

complement, but T is not filled by any morpheme. Meanwhile, T in the matrix clause that is filled by the present-tense morpheme cannot look into the ellipsis site, since the embedded vP has already been Spelled-out. Thus, there is no morphologically filled T from which the ellipsis site is accessible in (35a). Due to this, the sentence (35a) fails to meet the condition in (34). On the other hand, in (35b), there is a morphologically filled instance of T that the ellipsis site is accessible from. It is the embedded T to which sentential negation is adjoined. Due to this, vP ellipsis inside the subjunctive complement is permitted.¹²

This indicates that CoPE is also governed by the licensing condition on VPE. I suggest that this is because VPE and CoPE target the same projection, namely vP . For this reason, it can be said that the constraint in (34) is in fact the *licensing condition on vPE* , as stated in (36).

¹² In section 2.4.3, I will demonstrate that vP headed by the copula verb *be*, a subtype of unaccusative vP , is a phase, adopting Deal (2009). Adopting this view, the licensing condition on VPE in (34) can account for the ungrammaticality of the sentence in (i).

- (i) *It is necessary that John be proud of himself, and it is also necessary that Bill, as well.

Since T in the subjunctive complement is not morphologically filled, it cannot serve as the licenser of ellipsis in (i), even though the ellipsis site is accessible from it. On the other hand, T in the matrix clause is filled by the copula (through head movement). However, at the point where T is filled by the copula, the ellipsis site is not visible from the morphologically filled T. This is because the embedded TP including the ellipsis site has already been Spelled-out when the matrix v_b , in which the copula is base-generated, is introduced into the derivation.

(36) Licensing condition on vPE

The elided constituent must be c-commanded by morphologically filled T which is accessible from the ellipsis site in narrow syntax.

To summarize, I have modified the filled-T approach to VPE licensing, in order to make it compatible with a derivational approach to ellipsis. Additionally, I have argued, using data from subjective clauses, that the licensing condition on VPE also applies to CoPE.

2.4.2. Head movement

Head movement has been one of the more controversial topics in generative grammar. In terms of where head movement occurs, some researchers advocate the view that head movement is a PF operation (Chomsky 2001; Harley 2004), while others support the view that head movement is a syntactic operation (Lechner 2006, 2007a; Roberts 2010; Funakoshi 2014; Preminger 2016. See also Matushansky 2006; Harizanov 2014; Barrie and Mathieu 2016). The former view predicts that head movement would never be accompanied by some semantic effect and it could not interact with syntactic operations. On the other hand, on the latter view, it is predicted that head movement can induce semantic effects and can interact with other syntactic operations.

Another controversy related to head movement is whether the higher head to which a moving head attaches is what motivates head movement, or alternatively, a moving head contains the property responsible for triggering movement. The former view assumes that head movement as well as phrasal movement is triggered by an

EPP feature carried by a Probe (Pesetsky and Torrego 2001; Matushansky 2006; Preminger 2016). On the other hand, on the latter view, head movement occurs in order to satisfy a featural/morphological requirement of the moving head, which can be met by overt movement (Lasnik 1999; Aelbrecht and Harwood 2015; Harwood 2015; Messick and Thoms 2016).

In section 2.4.2.1, I provide empirical evidence demonstrating that head movement can affect LF representations and interact with operations occurring in the narrow syntax. This supports the view that head movement is a syntactic operation. In section, 2.4.2.2, I briefly review the view that it is the moving head that contains a property motivating head movement, which is necessary for explaining the aforementioned extraction puzzles.

2.4.2.1. Head movement as a syntactic operation

Roberts (2010) demonstrates that head movement can have LF effects by observing the interaction between head movement and negative polarity item (NPI) licensing. NPIs cannot appear without a negation marker that licenses them. Regarding the NPI licensing condition, there is a consensus that an NPI has to be asymmetrically c-commanded by an appropriate licensor. In the GB era, it was assumed that NPIs are licensed in the narrow syntax. However, in minimalist syntax, there is no independent level of S-structure. Thus, it is now widely accepted that the NPI licensing condition must be an LF condition. Given this, the NPI licensing condition can be formulated as in (37).

(37) The NPI Licensing Condition

NPIs must be asymmetrically c-commanded by their licensors at LF.

An interesting property of NPIs is that they do not reconstruct, even though the reason for this anti-reconstruction effect of NPIs is not clear. This can be seen in passivization and topicalization, as illustrated in (38a) and (38b), respectively.

- (38) a. *Anyone wasn't seen by John.
b. *Anything about it, nobody said.

Movement of the constituent containing the NPI out of the scope of the licensor in (38) destroys the NPI licensing context. However, there are some cases where phrasal movement of NPI licensors can feed NPI licensing. This is illustrated in (39).

- (39) a. *After the meeting, it seemed to anybody that nobody was satisfied with the outcome.
b. After the meeting, nobody seemed to anybody to be satisfied with the outcome.

Interestingly, head movement can also feed NPI licensing. Let us consider the contrast in (40).¹³

¹³ One might claim that it is not negation raising to C but auxiliary inversion occurring in interrogatives that creates a NPI licensing context in (40b), given the following contrast.

(40) a. *I know why anyone didn't help us.

b. Why didn't anyone help us?

(Kayne 2000)

Roberts (2010) assumes that *n't* contraction is a syntactic operation - negation cliticizes to T from a lower position in the narrow syntax. Given this, we can say that the NPI licenser *n't* in (40b) is located in C as a result of raising of negation to C along with the auxiliary verb. This can account for the contrast in (40) as follows: In (40a), the licenser is located in T through cliticization, but the NPI is not in the scope of the licenser. On the other hand, in (40b), negation moves to C through head movement preceded by cliticization of negation to T. In this configuration, the NPI is in the scope of the licenser. Given that the NPI licensing condition is an LF condition, and that head movement can create an NPI licensing environment, the discussion above demonstrates that head movement can affect LF. This indicates that head movement is a syntactic operation, rather than an operation that occurs at PF.

Another argument for syntactic head movement comes from noun incorporation (Baker 1988). Noun incorporation is exemplified by the following sentences.

-
- (i) a. *I wonder why anyone helps us.
b. Did anyone help us?

However, consider the contrast between (40b) and (ii).

- (ii) *Why did anyone help us?

Lasnik (p.c.) points out that this asymmetry indicates that the NPI in (40b) is not licensed by subject-auxiliary inversion, but by negation which moves to C. This is because there is no negation in the sentence, even though subject-auxiliary inversion occurs in (ii).

(41) Niuean

a. Volu nakai he tau fānau e fua niu?
grate Q ERG-PL-children ABS-fruit coconut

‘Are the children grating (the fruit of the) coconut?’

b. Volu niu nakai e tau fānau?
grate-coconut Q ABS-PL-children

‘Are the children grating coconut?’

(42) Southern Tiwa

a. Seuan-ide ti-mũ-ban.
Man-SUF 1sS:A-see-PAST

‘I saw the man.’

b. Ti-seuan-mũ-ban
1sS:A-man-see-PAST

‘I saw the man.’

The object in (41a) is absolutive-marked and separated from the verb by the ergative-marked subject. On the other hand, in (41b), the object is incorporated into the verb, and it is not case-marked, and the remaining, unincorporated argument is marked with absolutive, rather than ergative as in (41a). A similar situation holds in Southern Tiwa, as illustrated in (42). The direct object in (42a) stands alone, while in (42b), it is incorporated into the verb.

Unlike direct objects, the subjects of transitive verbs cannot be incorporated into the verbs, as illustrated in (43) and (44).

(43) Niuean

- a. Fā totou he tau faiaoga e tau tohi
HAB-read ERG-PL-teacher AB-PL-book
'(The) teachers often read books.'
- b. *Fā totou faiaoga e tau tohi.
HAB-read-teacher ABS-PL-book
'Teachers often read books'

(44) Southern Tiwa

- a. Hliawra-de \emptyset -k'ar-hi yede.
lady-SUF A:A-eat-FUT that
'The lady will eat that'
- b. * \emptyset -hliawra-k'ar-hi yede
A:A-lady-eat-FUT that
'The lady will eat that' (OK as 'She will eat that lady.')

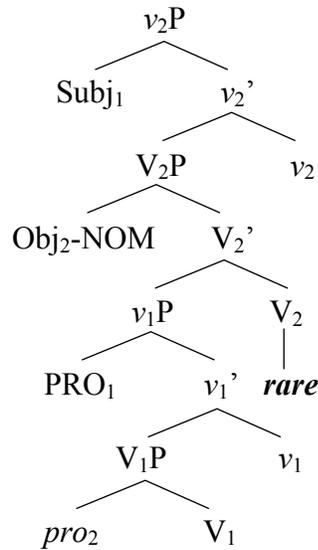
Given these facts, Baker proposes that noun incorporation involves the head of noun phrase adjoining to a c-commanding verb. That is, incorporation is an instance of head movement occurring in the narrow syntax. On this approach, the reason why direct objects of transitive verbs, but not subjects of transitives cannot, is simple.

Assuming that downward movement (i.e., lowering) is prohibited, the heads of direct objects c-commanded by V can move into verbs through head movement, while the heads of subjects are outside the domain of verbs, and thus, movement into verbs is not permitted. This syntactic restriction cannot be explained if it is assumed that head movement is a PF operation. That is, if head movement were a PF operation, it is not clear why the subject of the transitive verbs in (43b) and (44b) could not be incorporated into their adjacent verbs.

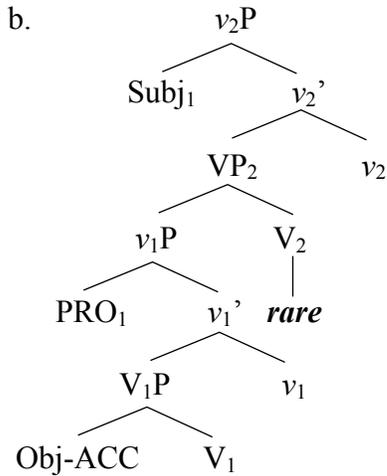
Next, adopting and refining Funakoshi's (2014) suggestion that head movement feeds syntactic movement in Japanese, I present an additional argument that verb movement is syntactic movement. In Japanese, the direct object of a non-stative predicate can occur with the accusative marker, but not with the nominative marker. On the other hand, a stative predicate can occur with a nominative-marked object, but not with an accusative-marked object. This is illustrated in (45).

- (45) a. Taro-ga zyoozuni sakna-o/*ga tabe-ru.
 Taro-NOM properly fish-ACC/NOM eat-PRES
 ‘Taro eats fish properly.’
- b. Taro-ga sakana-ga/*o negate-da.
 Taro-NOM fish-NOM/ACC not.like-COP
 ‘Taro does not like fish.’
- (Funakoshi 2014)

(47) a.



b.



In these two syntactic structures, the suffix $-(rare)e$ ‘can’ selects v_1P , which is responsible for accusative case assignment. In (47a), the overt object is base-generated outside the domain of v_1 . Thus, it cannot get accusative case from v_1 . Rather, it gets nominative from T. On the other hand, in the case of the accusative marked object, it is base-generated inside the domain of the case assigner, namely v_1 , as illustrated in (47b). (I refer readers to Funakoshi (2014) for detailed information about other analyses of the case alternation in this construction.) Funakoshi (2014) also discusses sentences where nominative objects seem to be conjoined with accusative objects, as illustrated in (48).

- (48) a. Taro-ga tyoosyoku-ni [ringo-o mit-tu] to [banana-ga
Taro-NOM breakfast-for apple-ACC three-CL and banana-NOM
ni-hon] tabe-rare-ru.
two-CL eat-can-PRES.
'Taro can eat three apples and two bananas for breakfast.'
- b. Taro-ga tyoosyoku-ni [ringo-ga mit-tu] to [banana-o
Taro-NOM breakfast-for apple-NOM three-CL and banana-ACC
ni-hon] tabe-rare-ru.
two-CL eat-can-PRES.
'Taro can eat three apples and two bananas for breakfast.'

Funakoshi points out that the conjunction of nominative objects and accusative objects is not allowed when the suffix *-(rare)* does not occur with the predicate, as shown in (49). This demonstrates that the conjunction pattern in (48) cannot be attributed to conjunction itself, but to the presence of the potential suffix *-(rare)*.

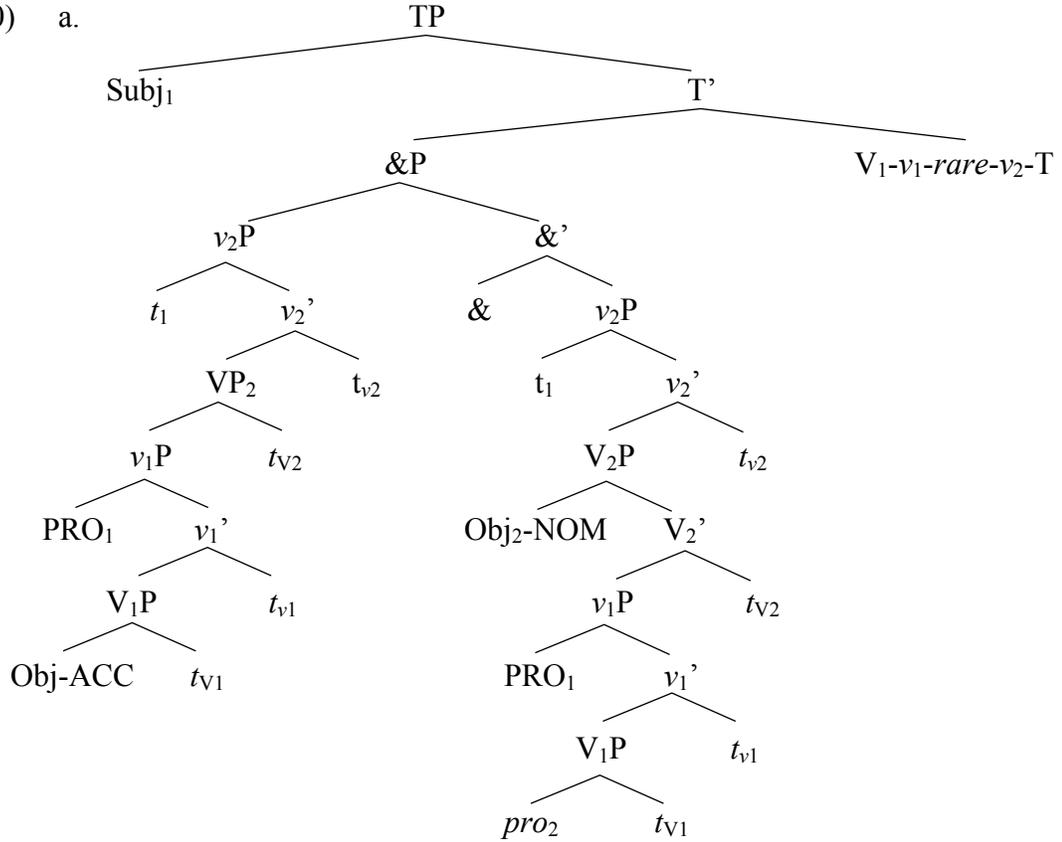
- (49) a. *Taro-ga tyoosyoku-ni [ringo-o mit-tu] to
Taro-NOM breakfast-for apple-ACC three-CL and
[banana-ga ni-hon] tabe-ru.
banana-NOM two-CL eat-PRES.
'Taro eats three apples and two bananas for breakfast.'

b. *Taro-ga tyoosyoku-ni [ringo-ga mit-tu] to
 Taro-NOM breakfast-for apple-NOM three-CL and
 [banana-o ni-hon] tabe-ru.
 banana-ACC two-CL eat-PRES.

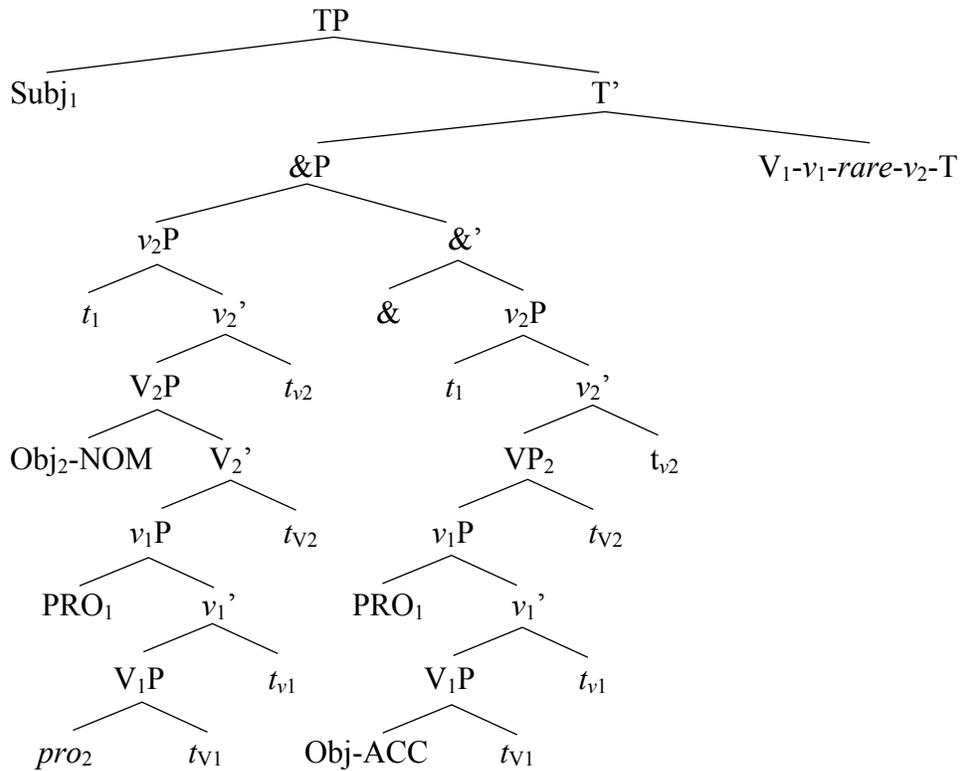
‘Taro eats three apples and two bananas for breakfast.’

Assuming that the difference in case marking in (46) reflects a structural difference as mentioned above, Funakoshi proposes that the unusual conjunction in (48) is generated via head movement of verbs. The structures of (48a) and (48b) can be represented as (50a) and (50b), respectively, based on Takano’s structures (The floating quantifiers are omitted for the sake of simplicity).

(50) a.



b.



In (50), not direct objects, but v_2 Ps are conjoined. V_1 , v_1 , V_2 , and v_2 move to T in an Across-The-Board (ATB) fashion. As a result, the main predicate and the potential affix can be located in a position higher than the verbal domain.

Funakoshi also rules out several possible alternatives. The first alternative is that v_2 Ps are conjoined, and then both the main predicate and the potential affix in the first conjunct are deleted under identity (see Fukui and Sakai 2003). On this view, the simplified structure of (48a) would be represented as follows:

(51) Taro-NOM [[v_{2P} apple-ACC three-CL ~~eat can~~] and [v_{2P} banana-NOM two-CL eat can]].

Now, consider the sentence in (52), which is an example of a cleft. The grammaticality of this sentence indicates that the deletion approach illustrated in (51) is not tenable. The accusative marked object, the nominative marked object, and the conjunct are moved to their surface position, assuming that clefted elements are extracted out of the clause preceded by the topic marker *wa* (Hiraiwa and Ishihara 2012).

(52) Taro-ga tyoosyoku-ni tabe-rare-ru no-wa [[ringo-o mit-tu] to
 Taro-NOM breakfast-for eat-can-PRES C-TOP apple-ACC three-CL and
 [banana-ga ni-hon]] da.
 banana-NOM two-CL COP

‘It is three apples and two bananas that Taro can eat for breakfast.’

(Funakoshi 2014)

If the deletion approach were right, the conjunctor *to* ‘and’ would have to be able to move along with a subpart of each conjunct, as illustrated in (53). That is, even though two v_2 Ps including the main predicate and the potential affix are conjoined, what is moved is two direct objects contained inside the v Ps and the conjunct. The problem with this analysis is that it is not easy to explain how the conjunct and the two direct objects can undergo movement separately to a single surface position. This raises a myriad of problems, including the need for movement of non-constituents and/or allowing movement to non-c-commanding position.

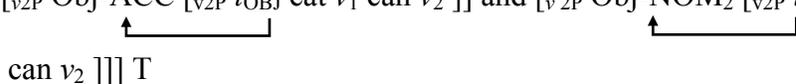
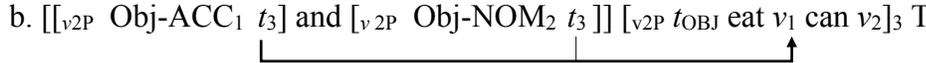
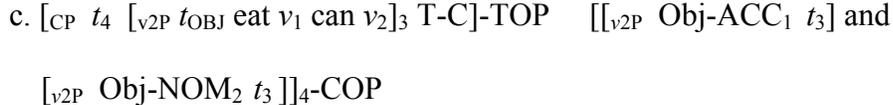
(53) Taro-NOM [[v_2 P t_1 ~~eat can~~] t_2 [v_2 P t_3 eat can]]-C-TOP
 [apple-ACC three-CL]₁ [and]₂ [banana-NOM two-CL]₃-COP

Meanwhile, the grammaticality of (52) can be easily explained if head movement in the narrow syntax is assumed. The predicate and the potential suffix in each conjunct are moved to a position out of the conjunction node through head movement in an

ATB fashion, and then, the conjunction node (i.e. a constituent containing the conjunct and the two v_2 Ps) moves to its surface position, as illustrated in (54).

- (54) Taro-NOM t_5 eat- v_1 -can- v_2 -T C-TOP [[v_2 P [v_2 P [v_1 P [v_1 P apple-ACC three-CL t_{v1}] t_{v1}] t_{v2}] t_{v2}] and [v_2 P [v_2 P banana-NOM two-CL [v_1 P [v_1 P *pro* t_{v1}] t_{v1}] t_{v2}] t_{v2}]]]5-da.

Another possible alternative Funakoshi introduces but rejects is a remnant phrasal movement approach. Based on Takano's structures, suppose that two v_2 Ps are conjoined in (48a), and that the object of each conjunct is adjoined to each of the v_2 P, as represented in (55a). Suppose that the two v_2 Ps excluding the adjoined direct object move out of the conjunction node in an ATB fashion, and subsequently, the conjunction node containing the adjoined objects is clefted, as represented in (55c). Then, we can generate the word order in (48a), as illustrated in (55).

- (55) a. [[v_2 P Obj-ACC [v_2 P t_{OBJ} eat v_1 can v_2]] and [v_2 P Obj-NOM₂ [v_2 P t_{OBJ} eat v_1 can v_2]]] T

 b. [[v_2 P Obj-ACC₁ t_3] and [v_2 P Obj-NOM₂ t_3]] [v_2 P t_{OBJ} eat v_1 can v_2]₃ T

 c. [CP t_4 [v_2 P t_{OBJ} eat v_1 can v_2]₃ T-C]-TOP [[v_2 P Obj-ACC₁ t_3] and [v_2 P Obj-NOM₂ t_3]]₄-COP


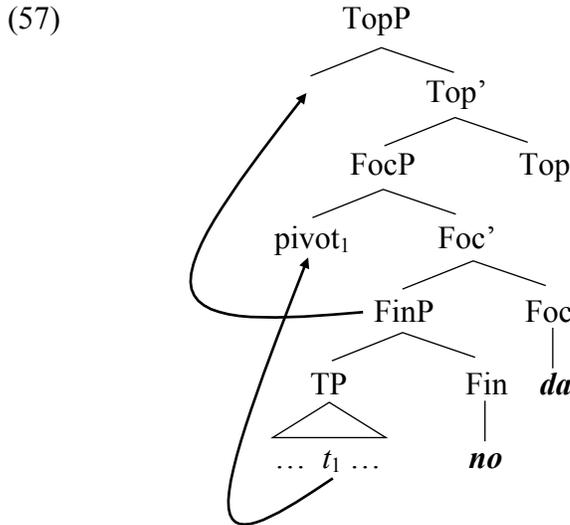
However, this approach cannot account for the grammaticality of (56).

(56) Tyoosyoku-ni t_1 tabe-rare-ru no-wa [[Taro-ga ringo-o mit-tu]
 Breakfast-for eat-can-PRES C-TOP Taro-NOM apple-ACC three-CL
 to [Hanako-ga banana-ga ni-hon]]_i da.
 and Hanako-NOM banana-NOMtwo-CL COP
 (lit.)‘What ate for breakfast was [John three apples] and [Hanako two bananas]’

Under the remnant phrase movement approach, the sentence (56) should be generated as follows: since each conjunct contains the subject, TPs must be conjoined. The subject and the object in each conjunct are adjoined to each TP as a result of scrambling. Then, TPs excluding the adjoined subject and the object undergo rightward movement as remnant movement in an ATB fashion. Subsequently, higher TP containing the adjoined subjects and objects is clefted. However, Funakoshi rejects this possibility, because Tanaka’s analysis has to assume that string vacuous scrambling of subject and object scrambling is permitted, which is prohibited in Japanese (Hoji 1985; Fujii 2004; Takita 2009). On the other hand, the sentence in (56) can be easily accounted for with the head movement approach as follows: TP are conjoined and the predicate and the potential suffix *-rare* undergo head movement up to C in an ATB fashion. Subsequently, the conjunction TP node is clefted to its surface position.

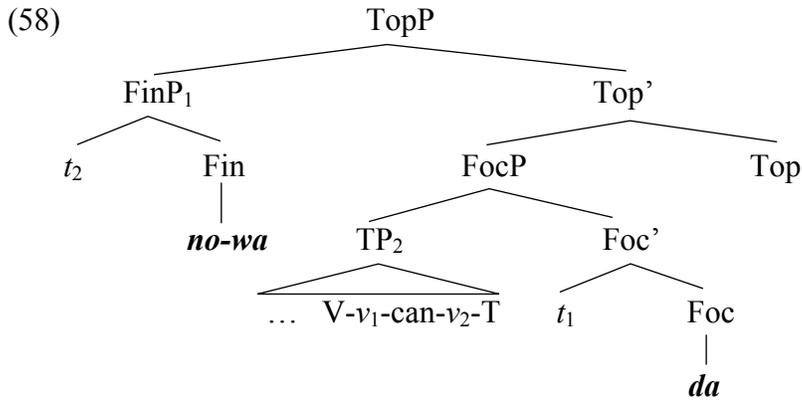
A noteworthy point is that (56) tells us not only that Japanese has head movement, but also that head movement occurs in the narrow syntax, rather than at PF. Hiraiwa and Ishihara (2012) propose that cleft sentences are created through

focus movement of the pivot to [Spec,FocP] followed by remnant movement of FinP containing the trace of the pivot to [Spec,TopP], as illustrated in (57).



Recall that in order to generate the sentence (56) under the head movement approach suggested by Funakoshi (2014), complex head T containing the predicate and the potential suffix must move to a higher head (i.e. Fin in (57)) in an ATB fashion, since each conjunct contains the subject. Suppose now that this movement occurs at PF. That T undergoes head movement to Fin, where the complementizer *no* is located, at PF entails that FinP as well as TP has already been spelled-out at the point of head movement, since a target to which a moving head is adjoined also must be visible at PF. If this is so, it is predicted under the PIC (Chomsky 2001) that movement of FinP to Spec,TopP should be prohibited, since any element which has already been sent to the interfaces is not accessible to any operation occurring in the narrow syntax. One way to avoid this problem would be to assume that T-to-Fin movement occurs after

FinP moves to Spec,TopP. However, this approach faces a non-trivial problem. Suppose that head movement of T to Fin occurs from the configuration illustrated in (58), where FinP is located in Spec,TopP in the narrow syntax.



In this configuration, the complex T can not move to Fin, because Fin does not c-command the complex T. Consequently, there is no way to generate the sentence in (56) under the assumption that head movement of the predicate and the potential affix occurs at PF.

To sum up, head movement can have certain LF effects and interact with other syntactic movement. Given this, we can conclude that head movement occurs in the narrow syntax.

2.4.2.2. What triggers head movement?

Although they differ in certain details, views on what motivates head movement can be bifurcated into two main camps: One school of thought assumes that the Probe (i.e. a higher head c-commanding the moving head) contains a property that motivates head movement, based on Chomsky's (2000) Probe-Goal system (Pesetsky and

Torrego 2001; Matushanksy 2004; Preminger 2016, among others). For instance, based on Travis' (1984) Head Movement Constraint, Pesetsky and Torrego (2001) propose the Head Movement Generalization, given in (59).

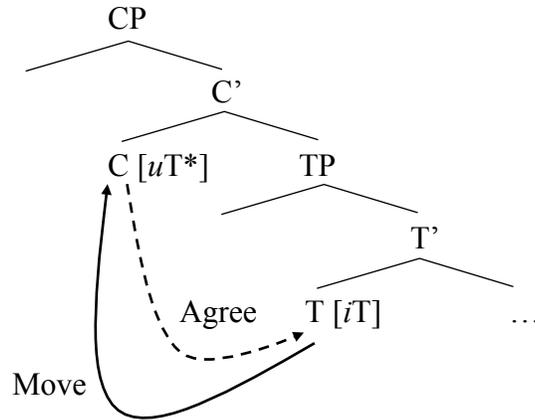
(59) Head Movement Generalization

Suppose that a head H attracts a feature of XP as part of a movement operation.

- (i) If XP is the complement of H, copy the head of XP into the local domain H.
- (ii) Otherwise, copy XP into the local domain of H.

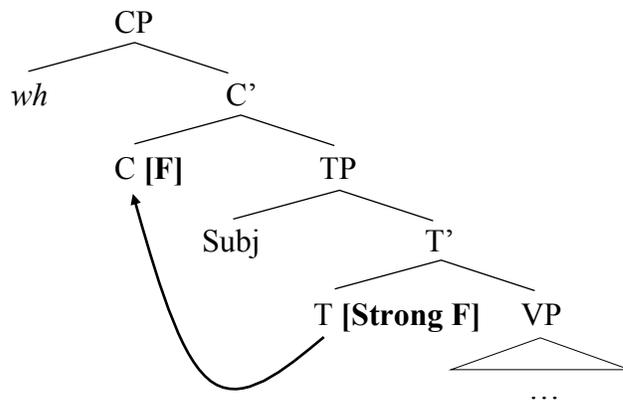
Given this, they argue that interrogative C in the matrix clause bears an uninterpretable T feature (i.e. [uT]-feature) with the EPP property. When the matrix interrogative C merges with TP, the [uT]-feature on C Agrees with the [iT]-feature on T. Since TP is the complement of the interrogative C, the EPP property on [uT]-feature attracts the head of TP into C. On the other hand, the uninterpretable T feature located on embedded interrogative C does not have the EPP property, and thus, T-to-C movement does not occur. T-to-C movement in matrix clauses can be represented as in (60). I will call this the Probe-driven head movement approach.

(60)



On the other hand, the other school of thought assumes that head movement is driven by a requirement of the moving head. For instance, Lasnik (1999) argues that a moving head bears a strong feature. The head moves to a higher head that bears a matching feature in order to check the strong feature.

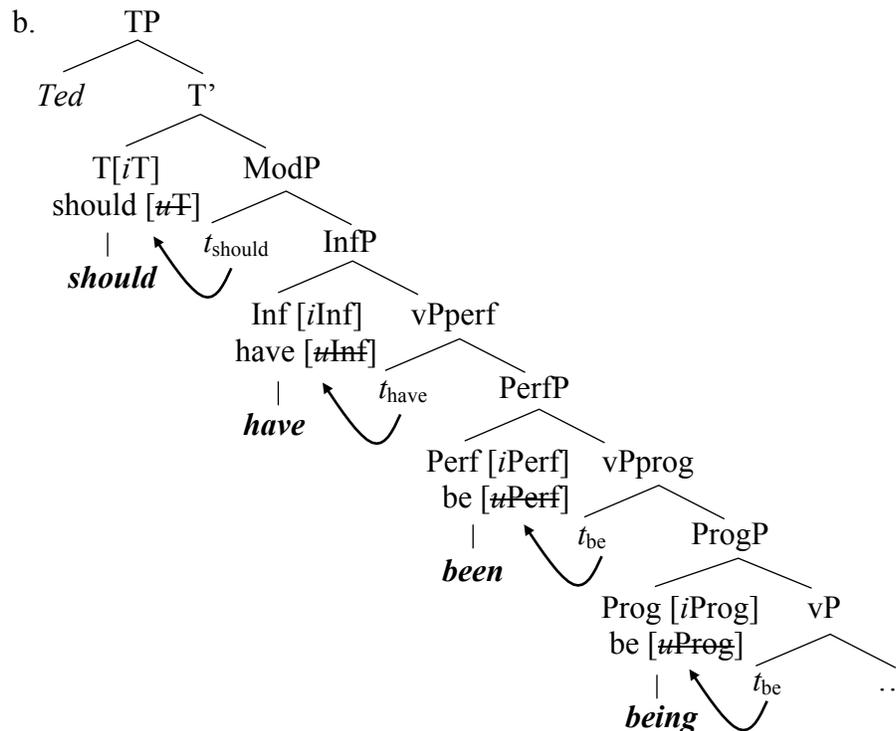
(61)



Adopting and modifying Lasnik's approach, Aelbrecht and Harwood (2015) and Harwood (2015) suggest that all auxiliary verbs contain an uninterpretable inflectional feature which motivates head movement. Every auxiliary verb, bearing an uninterpretable inflectional feature as a Probe, tries to find a Goal containing a

matching interpretable feature in its c-command domain. However, it cannot find an appropriate Goal, and the derivation is in danger of crashing. In this case, following Bošković (2007), they assume that in order to salvage the derivation, each auxiliary verb undergoes head movement to find an appropriate Goal, located higher than its base position. After movement, an appropriate Probe-Goal configuration is created. As a result of Agree, the uninterpretable inflectional feature on each auxiliary can be deleted. This is illustrated in (62). (The spelled-out form of each auxiliary verb after head movement is boldfaced.) I will call this the Goal-driven head movement approach.

(62) a. Ted should have been being trained by a lion tamer.

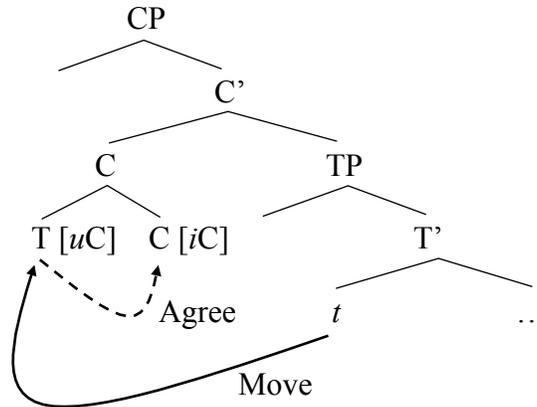


In this dissertation, I assume that elements undergoing head movement bear an uninterpretable inflectional feature which must be deleted via Agree with an interpretable categorial feature on another head, adopting the proposal by Aelbrecht (2010) that an uninterpretable inflectional feature of a head corresponds to a categorial feature of another head.¹⁴ The reason I adopt the Goal-driven head movement approach rather than the Probe-driven head movement will be discussed in detail in section 2.6.1.

In the case of T-to-C movement in matrix interrogatives, I suggest that what motivates head movement is the uninterpretable inflectional feature [μ C] on T, which corresponds to the interpretable categorial feature on C (i.e. [i C]), and that this feature is contained only in matrix T, but not in embedded T, in Standard English interrogative sentences. The uninterpretable inflectional feature on matrix T is deleted by Agree with the interpretable categorial feature [i C]. T cannot find a head containing [i C] in its domain, and thus, in order to salvage the derivation as a Last Resort, T undergoes movement to C and enters into an Agree relation with C. Then, the [μ C]-feature on T is deleted. This is illustrated in (63).

¹⁴ Aelbrecht (2010) proposes that each head is a feature bundle with an elaborated feature structure which contains categorial features, inflectional features, and selectional features. Inflectional features can be either interpretable or uninterpretable. In the case where an inflectional feature is uninterpretable, it has to enter into an Agree relation with the categorial feature contained in another syntactic object, in order for it to be deleted in the narrow syntax. The idea that an uninterpretable inflectional feature of a head corresponds to a categorial feature of another syntactic object, and that the two head must enter into an Agree relation to delete the uninterpretable inflectional feature, is also adopted in Merchant (2013).

(63)



On the other hand, embedded T does not contain the [uC]-feature, and thus, it does not undergo movement to T.

In this approach, there are two types of T – T with the [uC]-feature and T without the [uC]-feature. A question that arises here is how we can rule out derivations where embedded T contains the [uC]-feature, and where matrix T does not bear the [uC]-feature. I believe that selection plays a role in resolving this issue. Embedded interrogative C only selects T without the [uC]-feature, while matrix interrogative C always selects T containing the [uC]-feature. I think this is possible through some mechanism distinguishing an embedded C from a matrix C. For instance, an embedded interrogative C and a matrix interrogative C can be represented as $C_{E(MBEDDED)}$ and $C_{M(ATR IX)}$, respectively. This means that whether an interrogative C is used as an embedded C or a matrix C is encoded in it when it is pulled out of the lexicon. This is supported by the idiosyncratic properties of interrogative complementizers. In the case of the phonologically null interrogative complementizer, it can be used in embedded and matrix questions. On the other hand,

the overt interrogative complementizers *if* and *whether* never appear in matrix questions.

If this analysis is correct, CM always selects TP headed by T with the [*u*C]-feature, while CE selects TP head by T without the [*u*C]-feature. This is represented as in (64) and (65), respectively.¹⁵

(64) CPM[+Q] → CM[+Q] TP[*u*C]

(65) CPE[+Q] → CE[+Q] TP

To summarize, I assume that T-to-C movement is motivated by the uninterpretable inflectional feature [*u*C] contained in T. I assume furthermore that there are two types of interrogative complementizers - CE, and CM. The former takes TP headed by T which lacks a feature motivating T-to-C movement, while the latter selects TP headed by T bearing that feature. This is possible through the selection restriction of each interrogative complementizer.

¹⁵ Omer Preminger (p.c.) points out a problem of this approach – a head cannot select for the ‘absence of a feature’. One way of avoiding this problem is to adopt a +/- notation alongside the *i*C/*u*C notation, as formulated in (i) and (ii).

(i) CPM[+Q] → CM[+Q] TP[+*u*C]

(ii) CPE[+Q] → CE[+Q] TP [-*u*C]

If (ii) is right, it must be assumed that an undeleted uninterpretable feature with the negative value does not cause the derivation to crash, similar to valued uninterpretable feature in Pesetsky and Torrego (2001). However, for the sake of simplicity, I will assume that T undergoing movement bears the [*u*C]-feature, while T which does not move to C does not contain the [*u*C]-feature.

2.4.4. Analysis

In the previous section, I discussed the following properties of head movement: First, head movement occurs in the narrow syntax. Second, a moving head contains an uninterpretable inflectional feature that forces it to move to a higher head bearing a corresponding interpretable categorial feature. Given these, we can account for the extraction puzzles in English CoPE, detailed in (66).

(66) Extraction puzzles

- a. CoPE in embedded clauses does not allow object *wh*-phrase extraction out of the ellipsis site, while CoPE in matrix clauses does, as illustrated in (12) and (13) (repeated here as (67) and (68), respectively).
- b. Embedded CoPE does not allow object *wh*-phrase extraction as shown in (67), while embedded regular VPE, as well as matrix regular VPE, allows object *wh*-phrase extraction as illustrated in (14), repeated here as (69).

- (67)
- a. *I don't know what Bill *shouldn't* be proud of, but I have a good idea about what he *should*.
 - b. *I know what *John* might be proud of, but I don't know what *Bill* might.
 - c. *Although Mary wonders what *Tom* will be fond of, she doesn't wonder what *Jina* will.
 - d. ?*Although John doesn't wonder what Mary *will* be fond of, Bill does wonder what she *won't*.

- (68) a. What *shouldn't* Bill be proud of, and what *should* he?
 b. What will *Tom* be fond of, and what will *Mary*?
 c. Who *might* John be proud of, and who *mightn't* he?
 d. Who might *Tom* be fond of, and who might *Mina*?
- (69) a. Who will *Bill* kiss and who will *John*?
 b. I don't know who John *won't* criticize, but I have a good idea about who he *will*.

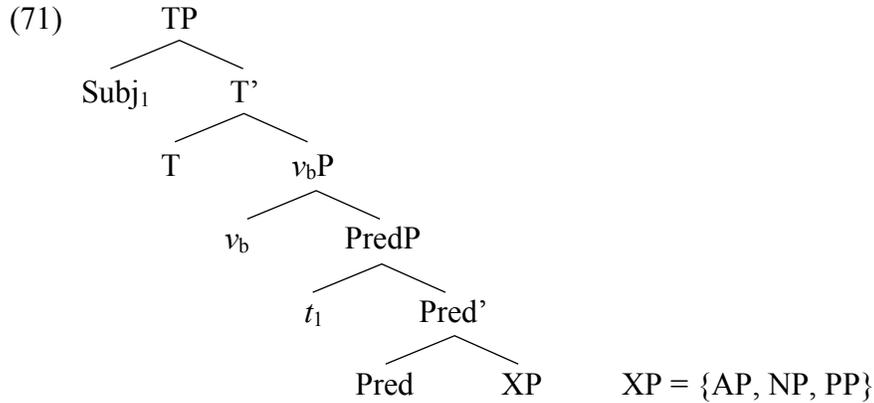
In order to resolve the extraction puzzles, I propose the following constraint on the timing of ellipsis.

(70) **The timing of ellipsis**

XP ellipsis occurs as soon as all the featural requirements of the licensor of XP ellipsis are satisfied.

The constraint in (70) entails that the timing of XP ellipsis can vary depending on the point where all the featural requirements of the licensor of XP ellipsis are satisfied.

This constraint on ellipsis can account for the unavailability of *wh*-extraction in the sentences in (67) as follows: Recall first that the copular constructions have the syntactic structure illustrated in (9), repeated here as (71), and that the ellipsis site of CoPE containing the copula is v_bP , selected by T.



On the basis of the licensing condition on v PE, given in (36), repeated here as (72), we can conclude that the licenser of CoPE in (67) is the modal in T.

(72) Licensing condition on v PE

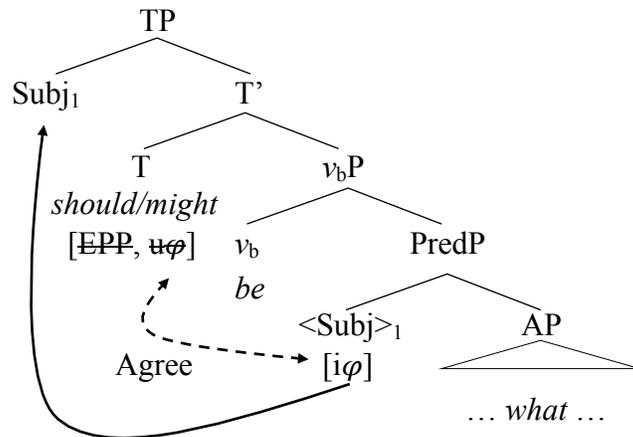
The elided constituent must be c-commanded by morphologically filled T which is accessible from the ellipsis site in narrow syntax.

The embedded modals in (67) have two featural requirements, one of which is Agree in ϕ -features, and the other of which is the EPP.¹⁶ These requirements are satisfied as soon as the modals are introduced into the derivation – the uninterpretable ϕ -features Agree with the interpretable ϕ -features on the subject, and the (classic) EPP on T attracts the subject to Spec,TP. According to the constraint on the timing of ellipsis in (70), v_b P ellipsis can occur as soon as these two requirements of the modal in T are

¹⁶ Here, I assume that the EPP is D-feature which attracts a DP (i.e., [uD*]), following Chomsky (1995) and van Urk and Richards (2015). This contrasts with other approaches to the EPP. Chomsky (2000) and Lasnik (2001) suggest that the EPP is a requirement that the specifier position of certain functional heads must be filled. Additionally, Craenenbroeck and den Dikken (2006) argue that the EPP is a PF condition. Note that the EPP on T is distinct from an EPP-feature on a phase head.

satisfied. At the point of ellipsis, the subject has already been moved outside the ellipsis site. On the other hand, the object *wh*-phrase fails to escape from the ellipsis site before ellipsis occurs. As a result, the object *wh*-phrase is elided along with v_bP . Thus, the reason the sentences in (67) are ungrammatical is that the object *wh*-phrases, which have already been elided inside v_bP , are nevertheless pronounced outside the ellipsis site.¹⁷ This is illustrated in (73).¹⁸ (Irrelevant derivational steps are suppressed.)

(73) a. STEP 1: the satisfaction of the featural requirements of T



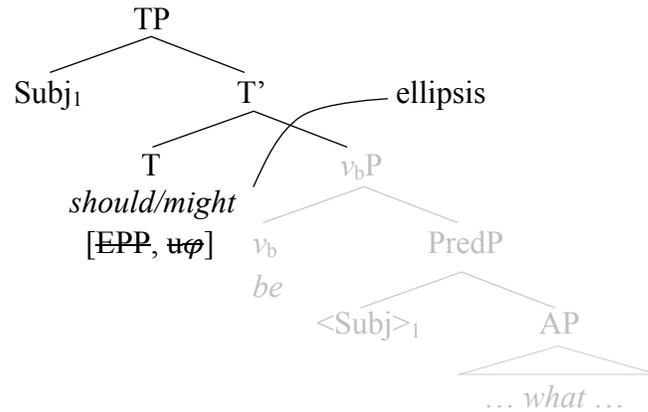
¹⁷ If this is right, one might wonder why (i) is ungrammatical, where object *wh*-phrase is elided along with v_bP .

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

I will discuss how this sentence is ruled out, by proposing a prosodic constraint *wh*-questions must obey, based on Richards' (2016) Contiguity.

¹⁸ As will be discussed below, I adopt the assumption that v_bP is a phase, following Deal (2009). On this assumption, the object *wh*-phrases in (67) are located in Spec, v_bP at the point of ellipsis. Since the ellipsis site of CoPE is v_bP rather than a non-maximal projection of v_b excluding the displaced *wh*-phrases located in Spec, v_bP , the object *wh*-phrases must be elided along with v_bP . Consequently, it is still the case that object *wh*-phrases cannot be pronounced outside the ellipsis site.

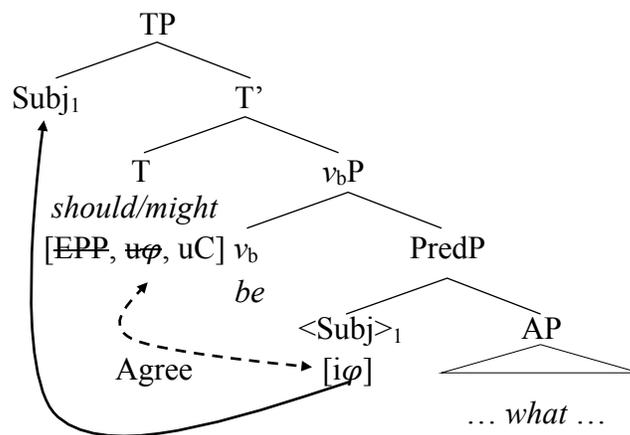
b. STEP 2: ellipsis of v_bP



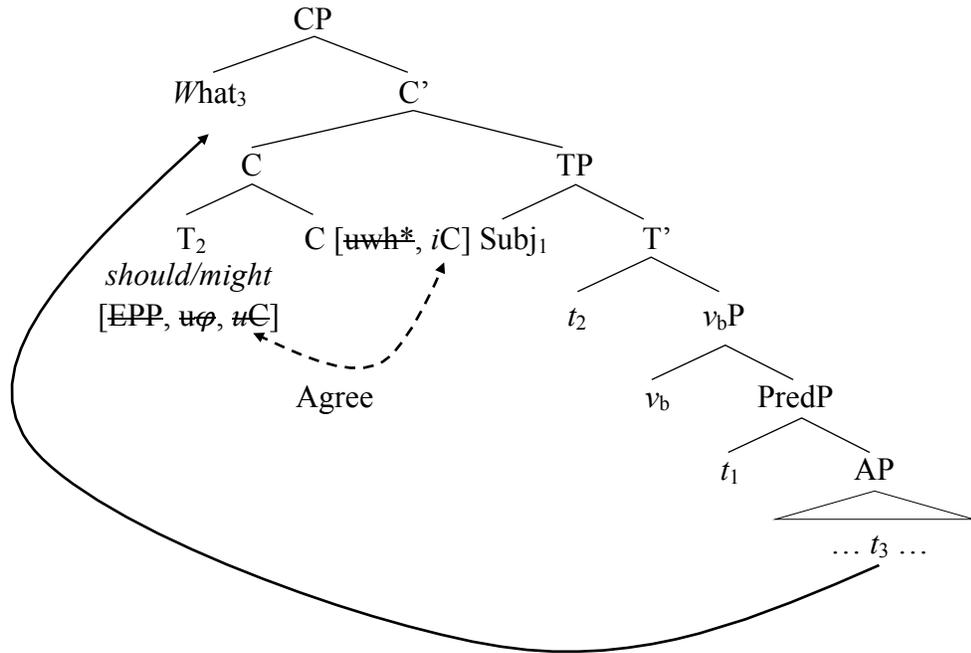
On the other hand, the sentences in (68), where v_bP ellipsis occurs in matrix clauses, do allow object *wh*-phrase extraction out of the ellipsis site. As I discussed in the previous section, the matrix modals in (68) have one more featural requirement in addition to that of the embedded modals in (67). The additional requirement is the uninterpretable inflectional feature [uC], which drives T-to-C movement. After head movement of T to C occurs, the uninterpretable inflectional feature [uC] on T establishes an Agree relation with its corresponding interpretable categorial feature [iC] on C, and is subsequently deleted. Given this, we can assume that the matrix modals in (68) have three featural requirements. They are: Agree in ϕ -features, the EPP, and the deletion of the [uC]-feature. The first two featural requirements (i.e., Agree in ϕ -features and the EPP) are satisfied when the modals are introduced into the derivation (i.e. when T merges with v_bP). As a result, the uninterpretable ϕ -features are deleted/valued and the subject is moved to [Spec,TP]. Even after these two requirements are satisfied, however, CoPE cannot yet occur. This is because the [uC]-feature on T has not been deleted yet. When C merges with TP, the modal moves to C. Deletion of the [uC]-feature and internal merge of the *wh*-element to

[Spec,CP] occur simultaneously, since these two operations are triggered by the features on the same head, namely C – it contains the [*i*C]-feature which Agrees with the [*u*C]-feature on T adjoined to C, and the [*uwh**]-feature that attracts the object *wh*-element to its specifier position. Lastly, *v*_bP is elided. Eliding any sooner (i.e., before tending to all of the featural requirements of C) would violate the principle in (70), above. Since the *wh*-elements in the sentences in (68) are located outside the ellipsis site, namely Spec,CP, when *v*_bP ellipsis occurs, the *wh*-elements can be pronounced outside the ellipsis site. This derivation can be represented in (74).

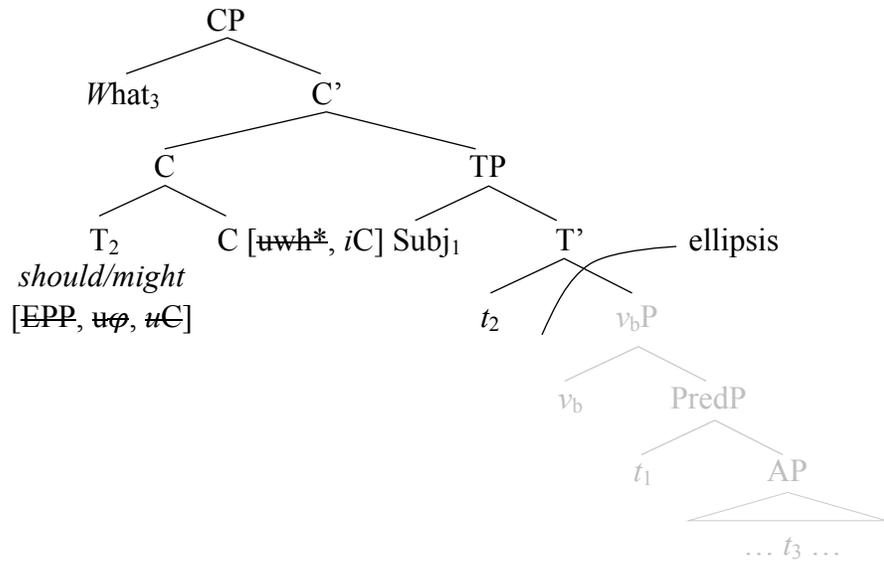
(74) a. STEP 1: partial satisfaction of the featural requirement of T



b. STEP 2: merger of C and subsequent operations associated with C



c. STEP 3: ellipsis of v_bP



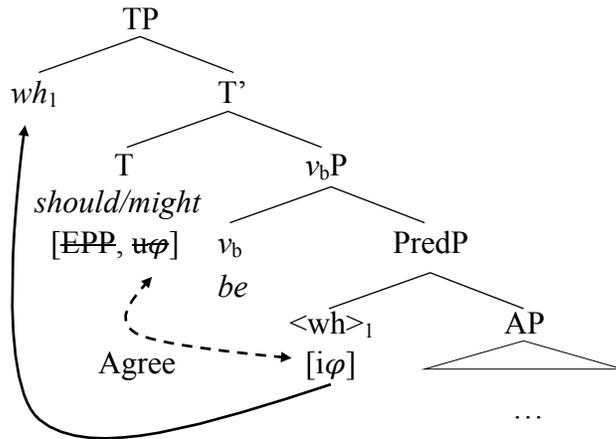
A noteworthy aspect of this derivation is that the moved modals can license CoPE.

That is, a modal can license the elision of the phrase that is not its complement in the

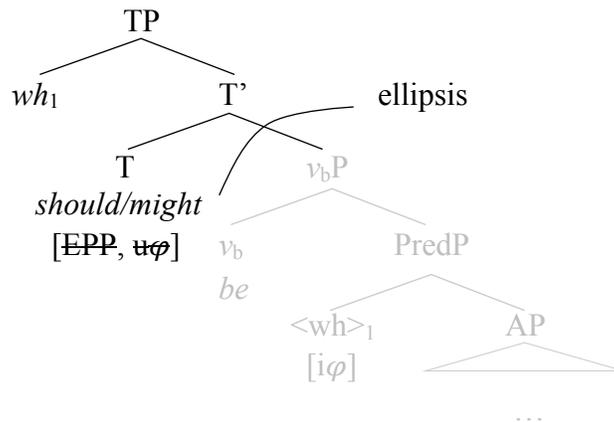
surface representation, but a complement of a lower copy/position that the modal previously occupied.

If the analysis of the asymmetry between (67) and (68) is on the right track, we can make the following prediction: In CoPE, subject *wh*-phrase extraction should be possible both in embedded and matrix clauses, and should not show the asymmetry shown above for object *wh*-phrase extraction. This is because subject *wh*-phrases undergo movement to Spec,TP in order to satisfy the EPP, as illustrated in (75a). Since, CoPE must occur after the satisfaction of the EPP on T, subject *wh*-phrases are located outside the ellipsis site at the point of ellipsis, as represented in (75b), whether ellipsis occurs in embedded clauses or matrix clauses. This prediction is borne out, as illustrated in (76) and (77).

(75) a. STEP 1: the satisfaction of the featural requirements of T



b. STEP 2: ellipsis of v_bP



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

The grammaticality of (76) suggests more than merely that subject *wh*-phrases and object *wh*-phrases exhibit a contrast in extraction out of the ellipsis site in embedded CoPE. It suggests further that the asymmetry between (67) and (68) is indeed due to the presence vs. absence of the [uC]-feature on T which motivates T-to-C movement, rather than some independent characteristics of matrix vs. embedded CoPE. The reason is as follows: On the [uC] feature-based view, the correlation with the presence/absence of the [uC]-feature on T is relevant to the (un)availability of extraction of object *wh*-phrases from the ellipsis site in embedded CoPE. On the other

hand, on the alternative view (i.e., mere asymmetry between matrix and embedded CoPE), extraction does not depend on the [*u*C]-feature on T. Rather, it would be assumed that, regardless of head movement, matrix *v*_bP ellipsis allows extraction, while embedded *v*_bP ellipsis does not. However, the fact that both matrix and embedded *v*_bP ellipsis allows subject *wh*-phrase extraction in (76) and (77) shows that the unavailability of object *wh*-phrase extraction in (67) cannot be attributed to embedded *v*_bPE disallowing extraction completely. Even the subjects in (76) are base-generated inside the ellipsis site (i.e., in Spec,PredP).

In what follows, I present data from two non-Standard Englishes that provide further evidence that the [*u*C]-feature that triggers T-to-C movement is the exact cause of the matrix vs. embedded asymmetry discussed above. First, according to Bhatt (2010), Indian Vernacular English (IVE) is a mirror image of Standard English with respect to T-to-C movement. IVE has T-to-C movement in embedded questions, but not in matrix questions, as illustrated in (78) and (79).

- (78) a. What he has eaten?
b. How much interest they charged you?
c. How long ago that was? (Bhatt 2010)

- (79) a. I wonder where does he work.
b. I asked Ramesh what did he eat for breakfast.
c. Do you know where is he going? (Bhatt 2010)

Given that head movement occurs in the narrow syntax (see also Hartman 2011), and that syntactic T-to-C movement is motivated by the [μ C]-feature on T, the prediction made by the current analysis is as follows: If the contrast between (67) and (68) is due to T-to-C movement, IVE should exhibit the opposite asymmetry. It should allow object *wh*-extraction out of the ellipsis site in embedded CoPE sites, but not out of matrix ones. On the other hand, if the contrast in the extractability in Standard English is due to some independent property of matrix vs. embedded v_b P ellipsis, then IVE should show the same asymmetry seen in Standard English (cf. (67) and (68), above). My consultant Ambrish Sharma reports the opposite asymmetry, as shown in (80).

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

Without CoPE, both sentences are perfectly grammatical. However, when CoPE occurs, the two sentences exhibit a sharp contrast in the grammaticality – object *wh*-extraction in matrix CoPE is not permitted, while in embedded CoPE, it is allowed. This is exactly what the present proposal, based on the timing of ellipsis, predicts.

Second, Belfast English allows subject-auxiliary inversion not only in main question, but also in embedded questions.

- (81) a. What has John eaten?
b. Is Mary walking a dog now?
c. Did they go see a doctor?
- (82) a. She asked who had I seen.
b. They wondered what had John done.
c. They couldn't understand how had she had time to get her hair done.
d. He didn't say why had they come. (Henry 1995)

Then, the prediction is that object *wh*-phrase extraction out of the ellipsis site in CoPE would be possible in both matrix and embedded questions, as long as T-to-C movement in the embedded CP as well as in the matrix CP occurs in narrow syntax due to the presence of the [*u*C]-feature. My informant Frances Kane reports the expected result, as shown in (83).

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

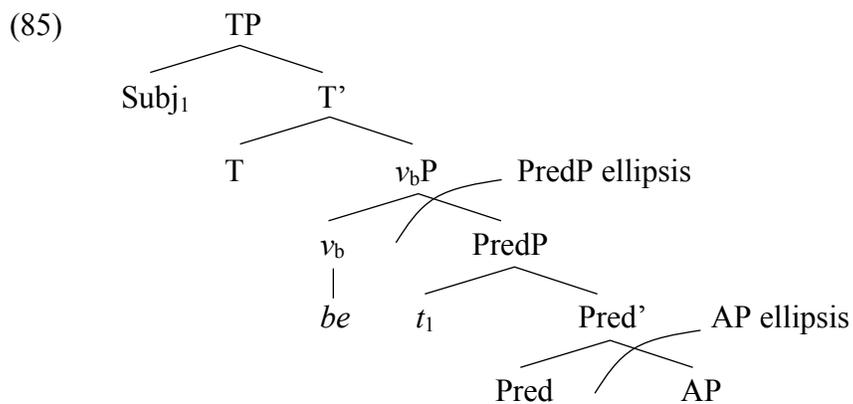
Even though the elliptical sentence in (83b) is slightly degraded compared to (83a), both sentences are acceptable. The grammaticality of the sentences in (83) thus lends further support to the present proposal.¹⁹

I have argued that what causes the contrast between (67) and (68) is the presence/absence of the [μ C]-feature on the modals. Since that feature in the modals in (67) is not deleted until C is introduced to the derivation, CoPE is delayed – in accordance with the constraint in (70) – and thus, extraction of object *wh*-phrases is possible. In what follows, I will provide another argument supporting the current analysis. Consider the sentences in (84). The non-elliptical first clause in (84a) is identical to the one in (84b). However, the ellipsis site in (84b) is smaller than that in (84a), differing as to whether or not the copula is included in the ellipsis site. Ellipsis of the type shown in (84b) will be referred to as *predicate ellipsis*.

- (84) a. John might be proud of his father, and Bill might ~~be proud of his father~~,
too.
- b. John might be proud of his father, and Bill might be ~~proud of his father~~,
too.

¹⁹ I have mentioned in fn. 6 that not all native speakers of Standard English judge that object *wh*-phrase extraction out of the ellipsis site in embedded CoPE is prohibited. Even though I have no definite account of this variation, I can speculate the following possibility. According to Bobaljik (1995), an element which is moved to a higher position in the narrow syntax can be pronounced in its base-position. One instance in Standard English is Quantifier Raising. Given this, suppose that a portion of native speakers of English have grammar where T-to-C movement in embedded questions occurs in the narrow syntax, but the displaced modal is pronounced in T, as though no T-to-C movement occurred in the narrow syntax. If this is true, then object *wh*-phrases can be located outside the ellipsis site even in embedded CPs at the point of ellipsis. This is because the embedded T in questions contains the [μ C]-feature in the narrow syntax, similar to matrix T in questions.

In principle, the ellipsis site in predicate ellipsis can be either AP, which is the complement of Pred, or PredP selected by v_b , as illustrated in (85).



At this stage, we cannot be sure whether the ellipsis site is AP or PredP. Suppose first that the ellipsis site is AP. The licenser must be a functional head c-commanding the AP (Lobeck 1995, Zagana 1995, among others). The asymmetry between (84b) and (86) indicates that the licenser of the predicate ellipsis cannot be Pred. The reason is as follows. The inner structure of (84b) is represented in (86a). Both the copular verb in (86a) and *considered* in (86) c-command PredP, and Pred takes the elided AP as a complement (Bowers 2001; see also Basilico 2003).

- (86) a. John might be [_{PredP} Pred [_{AP} proud of his father]], and Bill might be [_{PredP} Pred [_{AP} proud of his father]], too.
- b. *I considered [_{PredP} John Pred [_{AP} crazy]], but Mary considered [_{PredP} Tom Pred [_{AP} crazy]].

If the licensor were Pred selecting the ellipsis site AP, then there should be no reason (86a) and (86b) exhibit the observed asymmetry. Thus, the licensor must be a functional head higher than PredP, present in (86b) but absent in (86). The same is true if the ellipsis site is Pred. Then, the licensor of predicate ellipsis must trivially be a head c-commanding PredP.

The discussion above shows that, whether the ellipsis site in (84b) is PredP or AP, the licensor of predicate ellipsis must be a functional head c-commanding PredP. Then, we can conclude that the lowest possible licensor is the copular verb. (Recall the assumption that the copular verb selects PredP.) Bearing this in mind, let us consider the phasehood of v_b P. Deal (2009) argues that v P headed by the copular verb is a phase (see also Legate 2003 and Sauerland 2003). Consequently, v_b can have an EPP-feature (Chomsky 2000, 2001). Given these, it is predicted that a *wh*-element generated inside an XP selected by Pred could be extracted out of the ellipsis site in predicate ellipsis, regardless of whether predicate ellipsis occurs in matrix clauses or embedded clauses. The reason is as follows: Given that the lowest possible licensor of predicate ellipsis is the copular verb, predicate ellipsis will occur no sooner than the point at which all the featural requirements of the copula verb are satisfied. If there is an EPP-feature on the copular verb, a *wh*-element base-generated inside the predicate XP can be located outside the ellipsis site when predicate ellipsis occurs, whether or

not the copular verb undergoes head movement. This prediction is borne out, as illustrated in (87).²⁰

- (87) a. What shouldn't John be proud of, and what should he be?
b. I don't know what shouldn't Bill be proud of, but I have a good idea about what he should be.
c. What isn't John proud of, and what is he?
d. ?I don't know what John isn't proud of, but I have a good idea about what he is.

The discussion so far shows that the first puzzle (i.e., why matrix CoPE allows object *wh*-phrase extraction, while embedded CoPE does not) can be resolved through the proposal concerning the timing of ellipsis. The presence/absence of the [*u*C]-feature on T determines the point of ellipsis, and this causes the extraction asymmetry. Additionally, the proposal is also supported by the extraction facts found in CoPE in non-Standard English variants and predicate ellipsis in Standard English.²¹

²⁰ A question that arises here is why *v*P in the transitive verbal domain is not a phase (recall that in that case, the phase is VoiceP), while *v*_bP in the copular verbal domain is. I assume here that the highest projection of the extended domain of lexical verbs is a phase, following Bošković (2014). The highest phrase in the verbal domain of a transitive verb is VoiceP, while the verbal domain of a copular verb is *v*_bP.

²¹ Maria Polinsky (p.c) points out that this analysis predicts the following: if an adjunct were base-generated inside *v*_bP headed by the copula, it could not be pronounced outside the ellipsis site in CoPE. On the other hand, if an adjunct were generated higher than *v*_bP, it would be able to be pronounced outside the ellipsis site in CoPE. This, in turn, indicates that extraction facts regarding adjuncts in CoPE can be used as a tool for distinguishing adjuncts generated higher than *v*P from those generated lower than *v*P.

Now, let us move on to the next puzzle. As shown in (14), repeated here as (88), regular VPE allows extraction regardless of whether ellipsis occurs in the matrix clause or the embedded clause.

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

In order to explain why object *wh*-phrase extraction out of the ellipsis site in regular VPE is permitted both in matrix and embedded clauses, unlike in CoPE, I assume that, as I already mentioned before, the ellipsis site in regular VPE is *vP* selected by Voice, following Merchant (2008, 2013). Merchant assumes that the verbal domains have a Voice projection, and that a voice feature (e.g. a [Active]-feature and a [Passive]-feature) resides on Voice⁰. He shows that English sluicing and VPE exhibit a significant difference when it comes to the possibility of voice mismatch. In the former, the elided constituent and the antecedent must match in voice. However, the latter allows voice mismatch. This asymmetry is illustrated in (89) and (90), respectively.

- (89) a. *Joe was murdered, but we don't know who.
b. *Someone murdered Joe, but we don't know who by.

- (90) a. Steve asked me to send the set by courier through my company insured, and it was ~~sent by courier through my company insured~~.
- b. Actually, I have implemented it [= a computer system] with a manager, but it doesn't have to be ~~implemented with a manager~~.
- c. This information could have been released by Gorbachev, but he chose not to ~~release it~~.
- d. This guy's tape obviously should be scrutinized more than you did ~~scrutinize it~~.

On the basis of this asymmetry, Merchant proposes that the ellipsis site of VPE allowing voice mismatch does not include Voice, while the ellipsis site of sluicing that disallows voice mismatch does. If the ellipsis site of VPE included Voice, then we would expect that VPE would not allow voice mismatch, just like sluicing. The conclusion above, however, does not tell us whether the ellipsis site of VPE is vP or VP. In order to show that the elided constituent in VPE must be vP , Merchant adopts Johnson's (2004) argumentation. A substantial body of work (Von Stechow 1996, Rapp and Von Stechow 1999, Beck and Johnson 2004) argues that the adverb *again* has two readings. One indicates repetition of an event (i.e., the repetitive reading) and the other operates on the internal state (i.e., the restitutive reading).

- (91) a. *Repetitive reading*

The door was opened. Ben closed it. It blew open. Maribel closed it again.

b. *Restitutive reading*

The door was closed. The wind blew the door open and no one closed it.

Finally, Maribel closed it again.

Johnson suggests that the repetitive reading is available when *again* attaches to vP/VoiceP, while the restitutive reading is possible when *again* is adjoined to VP. Crucially, Johnson reports that the repetitive reading is allowed in VPE, while the restitutive reading is not available in VPE, as illustrated in (92):

- (92) a. The door was opened. Ben closed it. It blew open. Maribel did again.
b. *The door was closed. The wind blew the door open and no one closed it.
Finally, Maribel did again.

On the basis of this fact, Johnson concludes that the reason (92) is unacceptable is that VPE cannot target VP – if the ellipsis site were VP, it is expected that VP node to which the adverb *again* attaches could be elided as illustrated in (93), and therefore, the restitutive reading would be allowed.

- (93) ... Mary did [_{VoiceP} [_{vP} [_{VP} [~~VP~~ close it] again]]].

The unavailability of the restitutive reading in (92) falls into place if the ellipsis site of VPE is *vP*, rather than *VP*.²²

A second assumption I am entertaining in this dissertation is that an Agent subject is introduced by Voice (Harley 2013; Alexiadou et al. 2015; Legate 2014; see also Kratzer 1996, 2005 and Pylkkänen 1999, 2008). Thus, I assume that Voice has two functions, one of which is that it bears a voice feature that determines the voice form of verbs in the morphology, and the other of which is that it introduces an Agentive subject.

I also assume the following: when a verbal domain contains Voice, VoiceP is a phase, but *vP* is not (Baltin 2007, 2012, Aelbrecht 2010; Legate 2014). This is compatible with Bošković's (2014) "contextual phasehood" requiring that among multiple projections, only the highest projection of the extended domain of a lexical verb is a phase.

Now, we are in a position to account for why object *wh*-phrase extraction is possible in regular VPE, regardless of whether ellipsis occurs in embedded or matrix clauses. Given that the licenser of *vPE* in (88) is T (see the licensing condition on *vPE* in (36)), the elision of *vP* can only occur after all the featural requirements of T are satisfied. Accordingly, the object *wh*-phrases generated inside *vP* can internally merge in Spec,VoiceP before *vPE* occurs. This is because these object *wh*-phrases would move to Spec,VoiceP even before the licenser, namely T, is introduced into the derivation. Thus, regardless of whether T-to-C movement occurs or not, extraction of

²² Merchant provides two more arguments for the suggestion that the elided constituent of VPE is *vP*, rather than *VP*. For more information, see Merchant (2013).

object *wh*-phrases in VPE is permitted. (This analysis is in line with Aelbrecht 2010.)²³

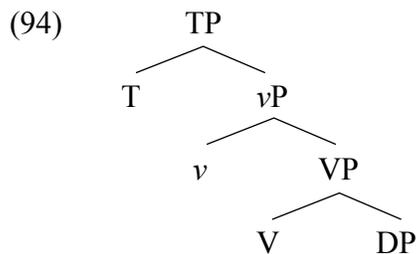
According to the discussion so far, the reason object *wh*-phrase extraction out of the ellipsis site is permitted in embedded regular VPE, but not in embedded CoPE, is that the extended domain of regular verbs contain Voice, while that of the copula does not. A question that arises here is why the verbal domain of the copula does not contain VoiceP. I propose that only the extended domain of verbs that have a semantic contribution has VoiceP. The copular verb *be* is semantically vacuous and it functions merely as a syntactic relator that links the subject and the predicate.

One consequence of this proposal is that extended domains of unaccusative verbs (including raising and anticausative verbs) must have Voice. Nonetheless, they neither occur with an Agent subject nor host overtly realized voice morphology. In order to capture these properties, I assume that in English, Voice in the extended domain of unaccusative verbs bears the active feature, which is spelled out as a non-overt morpheme. This is similar to the fact that the active feature on transitive verbs is not overtly realized in this language. Furthermore, Voice contains the [-Agentive]-feature that precludes the introduction of the Agentive subject, adopting the notation

²³ In section 2.4.1, I have argued that the locality in the licensing condition of *vP* ellipsis is subject to the weak version of PIC suggested in Chomsky (2001). Even though T and the ellipsis site in the sentences in (88) are separated by a phase boundary (i.e., VoiceP), the ellipsis site is accessible from the ellipsis licenser. This is because the complement of *vP* is not spelled-out until the next phase head C is introduced into the derivation. Suppose that the locality in the licensing condition of *vP* ellipsis were constrained by the strong version of PIC in Chomsky (2000), whereby the complement of a phase head is spelled-out as soon as the projection headed by the phase head is completed. Then, VPE could not be licensed.

used in Alexiadou et al. (2006) – the [+Agentive]-feature introduces the Agentive subject, while the [-Agentive]-feature does not.

This proposal sharply contrasts with analyses suggesting that verbal domains that neither introduce an Agentive subject nor occur with overt Voice morphology in English lack VoiceP (Alexiadou and Anagnostopoulou 2004; Alexiadou et al 2006; Alexiadou 2010; Alexiadou et al 2015), as illustrated in (94) (see Embick 2004; Alexiadou et al. 2015).



To recapitulate, there are two possible analyses for structures of verbal domains that neither host an overt voice morphology nor occur with an Agentive subject. The first option is to assume structures that lack Voice, while the other is to assume structures that have Voice containing the [-Agentive]-feature and the [+Active]-feature that is not overtly realized. Even though it is not easy to tease these two possibilities apart, each analysis makes a distinct prediction with regard to extractability of *wh*-phrases which are base-generated inside the ellipsis site in VPE. If the present proposal, whereby these structures nevertheless have a Voice layer, is on the right track, it is predicted that verbs unaccusative verbs (including the raising verb *seem* and anticausative verbs) should allow *wh*-phrases generated inside the ellipsis site to be

extracted out of the ellipsis site. On the other hand, if these verbs lacked a VoiceP layer entirely, it is expected that extraction would not be permitted. The reason is as follows: Suppose that the ellipsis site of VPE is vP and that the licensor T selects vP . According to the proposal concerning the timing of ellipsis in (70), vP is elided as soon as T satisfies its featural requirements (i.e., Agree in φ -features and the EPP). These features are satisfied just after T is introduced into the derivation. At the point of VPE, *wh*-phrases base-generated inside the ellipsis site have not yet moved to a position outside of it. This is because Spec,TP is not an appropriate intermediate landing site for non-subject *wh*-phrases that undergo \bar{A} -movement. The facts in (95) suggest that such extraction is in fact well-formed, suggesting, in turn, that even the verbal domains of these raising/unaccusative verbs contain the relevant intermediate landing site, namely Spec, VoiceP.

- (95) a. I don't know what John became, but I know what Mary did.
 b. ?I don't know what the door might open from, but I know what the window
 might ~~open from~~.
 c. I don't know at which station a train won't arrive, but I know at which
 station one will ~~arrive~~.

The distinction between the extended verbal domains of the copular verb *be* and the extended domains of verbs which have semantic contents can be also supported by cross-linguistic data. To the best of my knowledge, there is no language where the copula occurs with overtly realized voice morphology. On the other hand,

unaccusative verbs occur with overt voice morphology in multiple languages. For instance, in Albanian, the Non-Active (NAct) voice morphology can attach to unaccusative verbs. Anticausative predicates in Greek can surface with Active and Non-active voice morphology.

(96) Albanian (Manzini et al. 2008)

nga ati dil-ε-t
from there exit-NAct-3s
'One exits from there.'

(97) Greek (Alexiadou and Anagnostopoulou 2004)

a. To ktirio gremise apo mono tu.
the building collapsed.Act by itself
b. To ktirio gremistike apo mono tu.
the building collapsed.NAct by itself
'The building collapsed by itself.'

Consequently, given the cross-linguistic background, it is not unnatural to assume that, in English, the extended domains of unaccusative verbs that have a semantic contribution contain Voice, even though they neither occur with an Agentive subject, nor surface with overtly realized morphology (cf. Alexiadou and Doron 2012).

To summarize, in this section, I have argued that XP ellipsis occurs as soon as all the featural requirements of the licenser of XP ellipsis are satisfied. As a result, the

timing of XP ellipsis can vary depending on the point at which all the featural requirements of the licenser of XP ellipsis are satisfied. This can account for why object *wh*-phrases can be extracted out of the ellipsis site (i.e., v_bP selected by T) in matrix CoPE, but not in embedded CoPE in Standard English. The featural requirements of the licenser of embedded CoPE, namely embedded T, are satisfied just after T merges with v_bP headed by the copular verb *be*, and thus, object *wh*-phrases fail to be located outside the ellipsis site at the point of ellipsis. On the other hand, there is at least one featural requirement of matrix T that is not satisfied until C is introduced into the derivation – the [uC]-feature carried by the matrix T, which drives syntactic T-to-C movement. This requirement is satisfied when it Agrees with the [iC]-feature on C after T-to-C movement. Since object *wh*-phrases can be located in Spec,CP at the point of ellipsis, they can be pronounced outside the ellipsis site. Unlike object *wh*-phrases, subject *wh*-phrases move to Spec,TP as soon as T merges with v_bP headed by the copula *be*. Consequently, subject *wh*-phrases can be extracted out of the ellipsis site in both embedded and matrix clauses. The present proposal concerning the timing of ellipsis is also supported by the extraction facts in non-Standard English variants, and by predicate ellipsis in Standard English.

Contrary to CoPE, regular VPE allows object *wh*-phrase extraction in both matrix and embedded clauses. I have argued that this is because the extended verbal domain of the copula, which is entirely devoid of semantic content, lacks Voice, while extended domains of verbs that make a semantic contribution contain Voice. In the latter case, VoiceP is a phase. In regular VPE, vP selected by Voice is elided as soon as all the featural requirements of the licenser T are satisfied. At the point of

ellipsis, object *wh*-phrases have already been moved to Spec, VoiceP, and thus, regardless of head movement, regular VPE allows object *wh*-phrase extraction.

2.5. Alternatives

In this section, I briefly review existing derivational approaches to ellipsis and argue that they are not sufficient to account for the extraction asymmetry in CoPE, discussed in section 2.3.

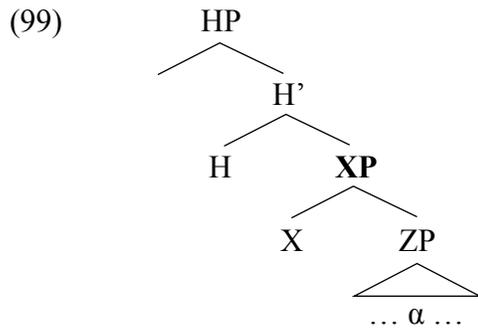
2.5.1. Baltin (2007, 2012)

Baltin (2007, 2012) argues that ellipsis occurs during the derivation in overt syntax. Adopting Halle and Marantz (1993), Baltin assumes that vocabulary insertion occurs at PF, depending on the formal features of lexical items. In this approach, ellipsis is an operation that removes formal features of lexical items inside the ellipsis site in the narrow syntax. When a constituent deprived of its formal features as a result of ellipsis is Spelled-out, vocabulary insertion does not apply to this constituent at PF, and thus, it is unpronounced. Based on this, Baltin proposes the following constraint with respect to the timing of ellipsis.

(98) The timing of ellipsis (Baltin's version)

Ellipsis occurs when a head H externally merges with the phrase XP that deletes.

In order to understand how the constraint in (98) works, let us consider the schematic structure in (99).



XP is the phrase that deletes and it is elided when H merges with XP. If H has the ability to attract α from within XP to its specifier position, the elision of XP and the internal merge of α into Spec,XP take place simultaneously. That is, the external merge of H with XP, the internal merge of α into Spec,HP and XP ellipsis are unordered. If α has moved to Spec,HP, the formal features of α can be preserved, and thus, it can be pronounced outside the ellipsis site (i.e. extraction is available). On the other hand, if X cannot attract α , then α remains inside the ellipsis site at the point of ellipsis. As a result, the formal features of α are removed when YP ellipsis occurs. Consequently, it cannot be pronounced outside the ellipsis site (i.e. extraction is unavailable).

The (un)availability of extraction in the British English *do* (henceforth BrE *do*) construction provides evidence for Baltin's version of the timing of ellipsis in (98). The BrE *do* construction is exemplified in (100).

(100) John will visit Sally, and Fred will do ____, too.

Baltin assumes that the ellipsis site of the BrE *do* construction is VP selected by *v*, and that *do* in this construction is an overt realization of *v*. It is also assumed that *v*P is selected by VoiceP (Collins 2005), and that not *v*P but VoiceP is a phase.

An interesting property of this construction is that A-moving elements and \bar{A} -moving elements exhibit an asymmetry with respect to the extraction out of the ellipsis site.²⁴

(101) a. The lake might freeze, and the river might do ____, as well.

b. John might seem to enjoy that, and Fred might do ____, too.

(102) *Although we don't know what John might read, we do know what Fred might do ____.

(101a) and (101b) are instances of A-movement – the subjects generated inside the ellipsis site can be extracted out of it. On the other hand, the object *wh*-phrase in (102), which undergoes \bar{A} -movement from its base position, cannot be extracted.

Baltin analyzes this contrast as follows: In (101a), the lexical verb *freeze* and its complement *the river* compose VP. Then, *do*, an overt realization of *v*, merges

²⁴ Thoms (2011) and Abels (2012) point out that not all \bar{A} -extraction is impossible in the BE *do* construction. Even though Baltin reports that topicalization is not permitted in this construction, Abels (2012) and Thoms and Sailor (2017) report that topicalization is possible, as shown in (i).

(i) Hazelnuts, I won't eat. Peanuts, I might *do*.

I will discuss why overt *wh*-phrase extraction and topicalization exhibit an extraction asymmetry in detail in chapter 4.

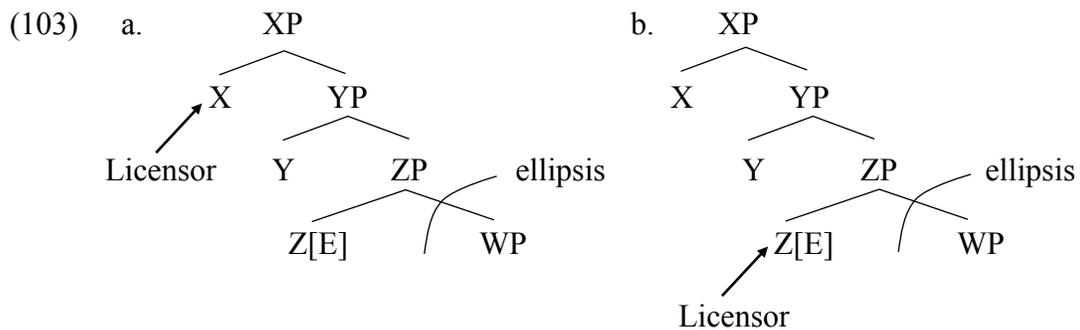
with VP. In this case, *do* triggers internal merge of *the river* to its specifier position, and VP is deleted simultaneously. A similar analysis applies to (101b), where the subject is generated inside VP. On the other hand, in (102), the *wh*-phrase fails to be located outside the ellipsis site at the point of ellipsis. This is because \bar{A} -movement proceeds only through phase edges. (Recall that Voice is a phase head, while *v* is not, and that BrE *do* ellipsis is ellipsis of VP *per se*.) Due to this, the object *wh*-phrase cannot escape from VP until Voice is introduced into the derivation. Since the *wh*-phrase stays inside the ellipsis site at the point of the elision of VP, its formal features are eliminated in the narrow syntax. At PF, vocabulary insertion does not apply to the *wh*-element, and thus, it cannot be pronounced. This is the reason why the *wh*-element does not seem to be able to be extracted out of the ellipsis site.

Although this analysis may resolve why (101) and (102) exhibit the asymmetry, it cannot account for the aforementioned puzzle in English CoPE. On Baltin's view, CoPE should occur when T merges with the ellipsis site, namely v_bP , in both matrix and embedded clauses. The internal merge of the subject into Spec,TP and CoPE occur simultaneously, and thus, the subject can be pronounced outside the ellipsis site. On the other hand, the object *wh*-phrases fail to escape from the ellipsis site at the point of CoPE, since Spec,TP is not an appropriate landing site for overt \bar{A} -movement. Therefore, this analysis erroneously predicts that extraction of object *wh*-phrases out of the ellipsis site would be prohibited, regardless of whether CoPE occurs in matrix clauses or embedded clauses. Consequently, we can conclude that Baltin's proposal concerning the timing of ellipsis is insufficient to capture the

asymmetry between embedded CoPE and matrix CoPE in extractability of object *wh*-phrases.²⁵

2.5.2. Aelbrecht (2010)

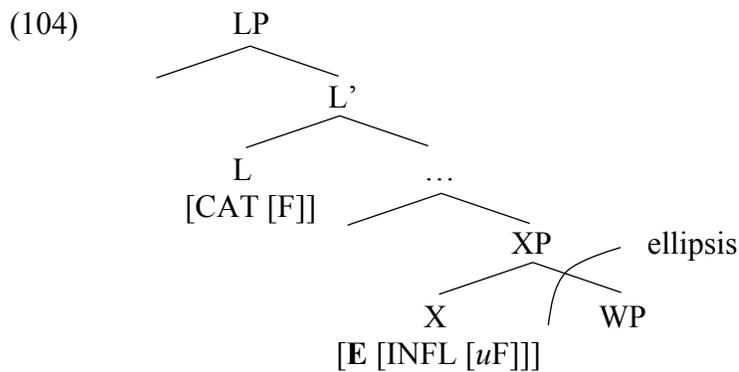
Aelbrecht (2010) develops a novel derivational approach to ellipsis by adopting and modifying Merchant's (2001) E-feature proposal. In her analysis, a sister head of the phrase that deletes contains an E-feature. However, a head bearing an E-feature is not necessarily an ellipsis licensor, unlike in Merchant's analysis. That is, the licensor of XP ellipsis is distinct from a head bearing an E-feature in some cases, while it is identical to a head containing an E-feature in other cases. This is illustrated in (103).



Aelbrecht proposes that this is possible through elaborating the relevant feature structures, and extending Merchant's E-feature proposal. She assumes that a head is a bundle of features – categorial features, inflectional features, and selectional features. Inflectional features can be uninterpretable, and an uninterpretable inflectional feature needs to be checked/deleted through Agree with an interpretable categorial feature of

²⁵ I will give an account of the unavailability of object *wh*-phrase extraction in this construction in section 4.3.2.

another syntactic object. For instance, in the sentence *John likes Mary*, the finite T contains the categorial feature [T] valued with [present], and uninterpretable inflectional φ -features. The latter must be checked against the categorial φ -feature the subject bears. It is also assumed that an E-feature optionally exists in the lexicon, and an element with an E-feature has an uninterpretable inflectional feature, corresponding to a categorial feature of the ellipsis licenser. Suppose that the licenser L of WP ellipsis contains a categorial feature F, and that X is the head bearing the E-feature. This is illustrated in (104).

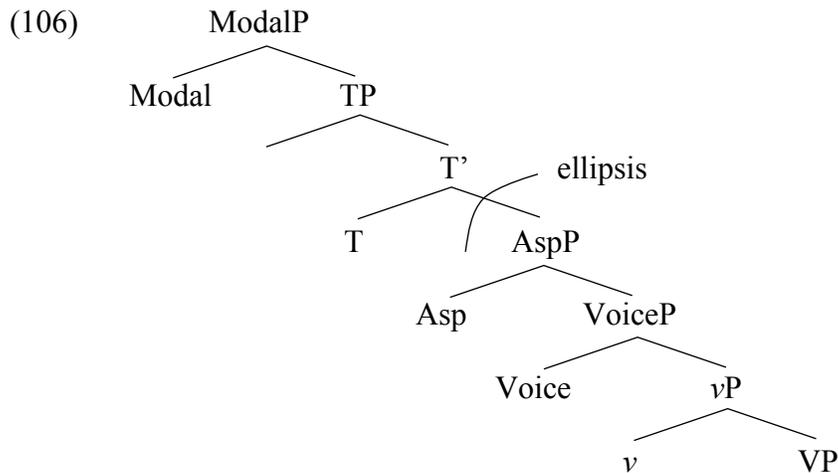


On this view, as soon as the categorial feature [F] on L establishes an Agree relation with the uninterpretable inflectional feature [uF] of the head bearing the E-feature, the ellipsis site is spelled-out. At PF, due to the phonological requirement of the E-feature, vocabulary insertion does not apply to any terminal node inside the ellipsis site.

This analysis can account for the extraction facts in Dutch Modal Complement Ellipsis (henceforth, Dutch MCE). Dutch MCE, exemplified in (105), has the structure illustrated in (106), where the ellipsis site is AspP, selected by T.

- (105) Jessica wil niet gaan werken morgen, maar ze moet
 Jessica wants not go work tomorrow but she must
 gaan ~~werken~~ morgen.
 go work tomorrow

‘Jessica does not want to go to work tomorrow, but she has to.



In this construction, a modal is generated as a head of ModalP. Additionally, given the fact that ellipsis of the verbal domain is possible only when sentences contain a modal, Aelbrecht assumes that Dutch MCE is licensed by a modal.

Dutch MCE exhibits an asymmetry between A and \bar{A} -extraction. A-movement out of the ellipsis site is allowed, while \bar{A} -movement out of the ellipsis site is not, as shown in (107).

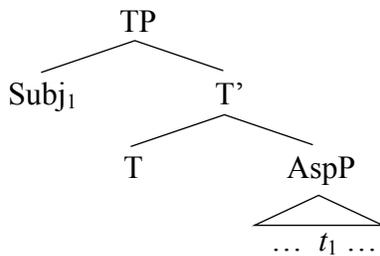
- (107) a. Jeroen wou Sarah wel een cadeautje geven, maar hij
 Jeroen wanted Sarah PRT a present give but he
 mocht niet.
 was.allowed not
 ‘Jeroen wanted to give Sarah a present, but he wasn’t allowed to.’
- b. *Ik kan MAX wel helpen, maar ik kan ADAM niet
 I can Max PRT help but I can Adam not
 ‘I can help Max, but I can’t help Adam.’
- c. *Ik weet niet aan wie Thomas die bloem WOU geven
 I know not to whom Thomas that flower want give
 maar ik weet wel aan wie hij MOEST
 but I know PRT to whom he must.PAST
 ‘I don’t know who Thomas wanted to give that flower to, but I do know
 who he had to.’

In (107a), the subject base-generated inside the ellipsis site is extracted out of the ellipsis site, which is an instance of A-movement. Meanwhile, (107b) and (107c) exemplify object scrambling and object *wh*-movement, respectively. In each example, ellipsis occurs when the categorial feature in the licenser, namely the modal, enters into an Agree relation with its matching uninterpretable inflectional feature on T, which contains an E-feature as a sister head of the ellipsis site. At the point of ellipsis, the subject, which undergoes A-movement to Spec,TP, is already located outside the ellipsis site in (107a). On the other hand, assuming that ModalP is not a phase, and

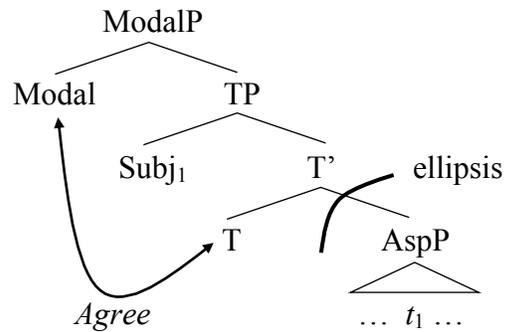
that \bar{A} -movement proceeds only through phase edges, the object *Adam* in (107b) and the object *wh*-phrase in (107c) fail to escape from the ellipsis site when ellipsis occurs. Consequently, they cannot be extracted out of the ellipsis sites. This is illustrated below.

(108) Derivation of (107a)

a. Step 1: subject movement

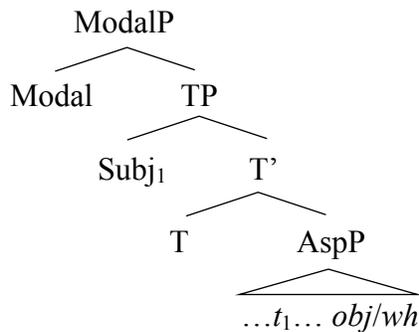


b. Step 2: Agree and ellipsis²⁶

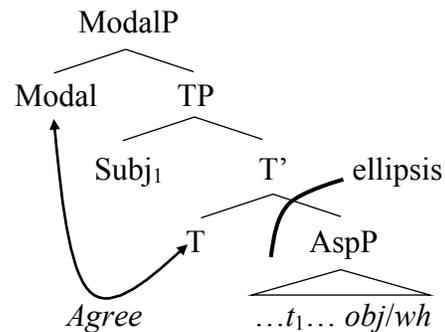


(109) Derivation of (107b-c)

a. Step 1: subject movement

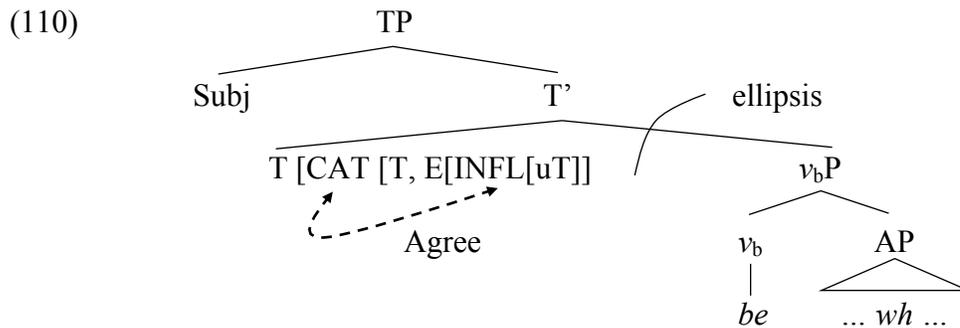


b. Step 2: Agree and ellipsis



²⁶ In order to generate the sentence with the right word order, the subject has to move further over the modal. Aelbrecht assumes that there is another TP layer above ModalP, and that the subject moves from the specifier position of lower TP to the specifier position of higher TP.

Even though this analysis can account for the extraction asymmetry in Dutch MCE, I have two concerns about it. First, under this analysis, assuming that the licenser of CoPE is an auxiliary verb in T, ellipsis must occur as soon as the categorial feature of the modal on T Agrees with its matching uninterpretable inflectional feature on the same head T, as illustrated in (110).



This analysis has a problem in accounting for the extraction asymmetry in CoPE between embedded and matrix clauses. Since an Agree relation between an interpretable categorial feature in a modal and an uninterpretable inflectional feature in the same modal is established as soon as T is introduced into the derivation in both embedded and matrix CoPE, ellipsis must occur before C merges with TP. At the point of ellipsis, object *wh*-elements are still inside the ellipsis site, and thus, it is erroneously predicted that extraction of *wh*-elements out of the ellipsis site would not be permitted whether CoPE occurs in embedded clauses or matrix clauses.

2.5.3. Bošković (2014)

Bošković (2014) argues that the highest projection of the extended domain of a lexical category (e.g. V, N, A, P) counts as a phase, and that only full phases and

phasal complements can be elided. He assumes that ellipsis is an operation that marks phases and phasal complements for ellipsis in the narrow syntax, and marked phrases are not assigned phonological realization when they are sent to PF. It is also suggested that full phases and phasal complements that delete are marked for ellipsis when the next higher phase head enters the structure. For instance, in (111), when YP is a phase and X is a next higher phase head, either YP or its phasal complement ZP is marked for ellipsis when X is introduced into the derivation.

(111) X ... [_{LP} [_{YP} α_1 [_{ZP} [_{KP} ... t_1 ...

If YP is marked for ellipsis in a situation where there is no higher head (e.g. L⁰) which can attract α to its specifier position, then α cannot be extracted from the ellipsis site. On the other hand, if ZP is marked for ellipsis in the same situation, α can be extracted out of the ellipsis site.

Assuming that the structure of the middle field between the surface and base-generation position of the subject in (112) can be represented as in (113), Bošković argues that his analysis can account for the contrast in the grammaticality in the following sentences in a uniform way.

- (112) a. *Betty must have been being hassled by the police, and Peter must ~~have been being hassled by the police~~, too.
- b. Betty must have been being hassled by the police, and Peter must have ~~been being hassled by the police~~, too.

- c. Betty must have been being hassled by the police, and Peter must have been ~~being hassled by the police~~, too.
- d. *Betty must have been being hassled by the police, and Peter must have been being ~~hassled by the police~~, too. Sag (1976)

(113) [TP must [VP₁ have [AspectP₁ en [VP₂ be [AspectP₂ ing [VP₃ be [VP ...



The auxiliary *be* generated in V₂ undergoes head movement to Aspect₁. Bošković stipulates that the highest projection of the extended domain of the lexical verb in this sentence is AspectP₁. Since AspectP₁ is a phase, either Aspect₁ or VP₂ can be elided. When the former is elided, (112b) is generated. If VP₂ is elided, (112c) is derived. However, VP₁, AspectP₂, and VP₃ cannot be elided, since they are neither full phases nor phasal complements. Due to this, (112a) and (112d) are ill-formed.

This analysis predicts that *wh*-extraction would be possible when VP₂ is elided, since *wh*-phrases can be located outside the ellipsis site (i.e., Spec,AspectP₁, AspectP₁ being a phase) when C merges with TP. On the other hand, when AspectP₁ is elided, it is expected that *wh*-extraction out of the ellipsis site would be prohibited, because *wh*-phrases stay inside the ellipsis site at the point of ellipsis. This prediction is borne out as shown in (114) and (115).

- (114) a. ?*You wonder by whom Besty must have been being hassled, and I wonder by whom Jane must have.

b. ?*You wonder on which table you book must have been put, and I wonder
on which table my CD must have.

(115) a. ?You wonder by whom Besty must have been being hassled, and I wonder
by whom Jane must have been.

b. ?You wonder on which table you book must have been put, and I wonder
on which table my CD must have

Even though this analysis explains the contrast between (114) and (115), I have several concerns about it. First, there is no empirical and theoretical reason VP_1 , headed by the highest auxiliary verb, is not included in the extended domain of the lexical verb. If the highest projection of the extended domain of the verb were VP_1 instead, Bošković's proposal that only full phases and phasal complements are deleted could not be maintained. Lastly and perhaps most importantly, this analysis predicts that English CoPE would not allow object *wh*-phrase extraction in matrix or embedded clauses, contrary to fact. This is because at the point of ellipsis (i.e. when C merges with TP in this analysis), object *wh*-phrases stay in $Spec_{v_bP}$, and thus, they must be elided along with v_bP . More generally, this analysis – just like Baltins' (2007, 2012) and Aelbrecht's (2010) – does not provide a way for T-to-C head movement to affect the availability of *wh*-extraction from the ellipsis site. But as previous sections have demonstrated, T-to-C movement plays a crucial role in the availability of such extraction (see, in particular, the discussion of non-Standard English varieties, in section 2.4.4)

2.6. Implications

In this section, I discuss theoretical implications of the present proposal concerning the timing of ellipsis. First, I discuss the fact that, between the Probe-driven head movement approach and the Goal-driven head movement approach, only the latter can account for why ellipsis can be delayed in some cases. Second, I argue that it is not universal that head movement is a syntactic operation, by using extraction facts in Dutch MCE. Lastly, I look into the interplay between ellipsis and D-linked object *wh*-phrase movement, and suggest a possibility that D-linked *wh*-phrases can be base-generated in their surface position.

2.6.1. Head movement: Probe-driven or Goal-driven?

Similar to phrasal movement, head movement also needs a driving force. As I mentioned in section 2.4.2.2, one school of thought takes it that the Probe (i.e. a higher head to which a moving head attaches) contains a property that motivates head movement, based on Chomsky's (2000 et seq.) Probe-Goal system (Pesetsky and Torrego 2001; Matushansky 2004; Preminger 2016, among others). Pesetsky and Torrego (2001) assume that, in the case of interrogative C in the matrix clause, it bears an uninterpretable T feature (i.e. [uT]-feature) with the EPP property. When the matrix interrogative C merge with TP, the [uT]-feature in C Agrees with the [iT]-feature in T. Since TP is the complement of the interrogative C, the EPP property on [uT]-feature attracts not TP but the head of TP to C. On the other hand, embedded interrogative C does not contain the EPP property, and thus, T-to-C movement does not occur.

The other school of thought assumes that that head movement is driven by a requirement of moving heads (Lasnik 1999; Aelbrecht and Harwood 2015; Harwood 2015, Messick and Thoms 2016). Adopting this approach, I have assumed that, in T-to-C movement in matrix interrogatives, T bears the uninterpretable inflection feature [*u*C], which motivates T-to-C movement. Since moved T c-commands C after head movement, the [*u*C]-feature is able to enter into an Agree relation with the [*i*C] in T.

In the Probe-driven head movement approach, in order to generate grammatical interrogative sentences, two types of interrogative C are needed – matrix interrogative C with the [*u*T]-feature with the EPP property and embedded interrogative C without that feature. Because the (un)availability of T-to-C movement is determined by the presence/absence of the [*u*T]-feature with the EPP property in C, T does not need to be classified into two types depending on whether T undergoes movement or not. On the other hand, as I suggested in section 2.4.2.2, the Goal-driven head movement approach has to assume that T is classified into two types – T with the [*u*C]-feature that triggers head movement to C, and T without that feature. Additionally, CM(ATRIB) must be distinguished from CE(MBEDDED), so that the former selects TP headed by T with the [*u*C]-feature, while the latter takes TP headed by T without the [*u*C]-feature. Otherwise, matrix questions without T-to-C movement or embedded questions with T-to-C movement could be generated. Consequently, the Goal-driven head movement approach has to assume more complex categories than the Probe-driven head movement approach.

Due to this, we can say that the Goal-driven head movement approach is less economical, and thus, theoretically less attractive than the Probe-driven head

movement approach. Nonetheless, the extraction asymmetry in CoPE implies that the former is more compatible with the timing of ellipsis in CoPE. This is because the Goal-driven head movement can easily capture why and how the timing of ellipsis of English CoPE can vary depending on the presence/absence of T-to-C movement. On the other hand, the Probe-driven head movement approach cannot easily explain the matrix vs. embedded asymmetry in CoPE, since embedded T and matrix T do not differ in their featural requirements. One might argue that the Probe-driven head movement approach can be retained if we stipulate that CoPE ellipsis occurs as soon as all the operations associated with the licenser are completed. According to this alternative, in embedded CoPE, ellipsis must occur before C merges with TP, since T does not move. Meanwhile, in matrix CoPE, ellipsis must occur when C merges with TP, since T-to-C movement, an operation associated with the licenser T, is completed only after the introduction of C to the syntactic structure. This alternative, however, faces a non-trivial problem under the derivational approach to ellipsis: At the point where TP is completed, syntax does not know in advance whether T undergoes movement to C or not. Thus, ellipsis must not occur until C merges with TP in order for syntax to detect if T undergoes head movement to C. Assuming that the external merge of C with TP and the internal merge of object *wh*-phrase to Spec,CP occur simultaneously, it is expected that object *wh*-phrase could be located outside the ellipsis site at the point of ellipsis, regardless of whether interrogative C has a property driving T-to-C movement or not. For the same reason, the Probe-driven head movement approach cannot explain why IVE is the mirror image of Standard English with regard to object *wh*-phrase extraction, as illustrated in (116) (=83)).

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

Consequently, it might be true that the Goal-driven head movement approach is not preferable to the Probe-driven head movement approach as a theory of head movement by itself. However, the discussion so far has shown that the Goal-driven head movement approach is superior to the Probe-driven approach in capturing how ellipsis interacts with head movement of the licenser. This conclusion leaves us with a few research questions including: First, is phrasal movement also motivated by a property of moving phrases as Bošković (2014) suggests? Second, how can some phenomena that are related to head movement (e.g. long-distance head movement, clitic-doubling; see Roberts 2001; Preminger 2016, and references therein) be accounted for with the Goal-driven head movement approach? Even though answering these questions would help us understand the exact nature of head movement, it is beyond the scope of this dissertation. I will leave these issues for further research.

2.6.2. Head movement: English T-to-C vs. Dutch modal movement

The present proposal concerning the timing of ellipsis entails that T-to-C movement in non-Standard English variants as well as Standard English occurs in

narrow syntax, and it is motivated by an uninterpretable feature a moving head bears. However, in this section, I suggest the possibility that head movement occurs in the same way cross-linguistically, by using Dutch MCE.

As mentioned in 2.5.2, Dutch MCE allows A-extraction, but not \bar{A} -extraction, as illustrated in (117). In (117a), the subject can be extracted out of the ellipsis site. However, object scrambling and object *wh*-phrase movement out of the ellipsis site are not permitted, as shown in (117b) and (117c), respectively.

- (117) a. Jeroen wou Sarah wel een cadeautje geven, maar hij
 Jeroen wanted Sarah PRT a present give but he
 mocht niet.
 was.allowed not

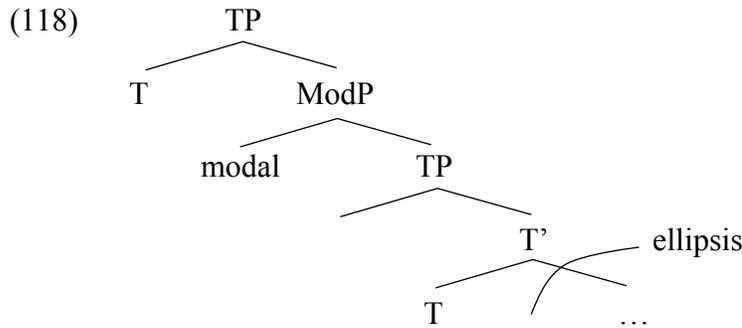
‘Jeroen wanted to give Sarah a present, but he wasn’t allowed to.’

- b. *Ik kan MAX wel helpen, maar ik kan ADAM niet
 I can Max PRT help but I can Adam not
 ‘I can help Max, but I can’t help Adam.’

- c. *Ik weet niet aan wie Thomas die bloem WOU geven
 I know not to whom Thomas that flower want give
 maar ik weet wel aan wie hij MOEST
 but I know PRT to whom he must.PAST

‘I don’t know who Thomas wanted to give that flower to, but I do know who he had to.’

I adopt the claim in Aelbrecht (2010) that the licenser of MCE is deontic modals, and that the ellipsis site is the complement of the lower T, as illustrated in (118).



According to the present analysis, MCE must occur precisely when all the featural requirements of the modal are satisfied. In the case of the subject extraction in (117a), the subject can be located in the lower Spec,TP before the licenser, namely the modal, enters into the structure. However, the objects that undergo \bar{A} -movement in (117b-c) are still inside the ellipsis site at the point of ellipsis. The reason is as follows: First, since ModP and the two TPs are not phases, \bar{A} -moving elements cannot move to their specifier position, assuming that an element undergoes \bar{A} -movement only via phase edges. Additionally, since the licenser of MCE, namely Mod, does not undergo head movement, it does not bear an uninterpretable feature that motivates head movement. Consequently, MCE must occur as soon as Mod merges with the lower TP. Due to this, the objects in (117b) and (117c) fail to escape from the ellipsis site before MCE occurs.

Now, let us discuss the relation between the timing of ellipsis and head movement of the licenser in this language. Dutch is a V2 language, but verb second is restricted to main clauses, as illustrated in (119).

- (119) a. Tasman heeft Nieuw-Zeeland ontdek-t.
Tasman have.3SG New Zealand discovered-D
'Tasman discovered New Zealand.'
- b. ... dat Tasman Nieuw-Zeeland ontdek-t heeft
that Tasman New Zealand discovered-D have
'... that Tasman discovered New Zealand.' (Zwarts 2011)

According to Roberts (2001), the V2 word order in Dutch is generated through movement of a modal to C. If such movement in this language is a syntactic operation, the present proposal concerning the timing of ellipsis predicts that object *wh*-phrase extraction should be possible in matrix questions. However, this prediction is not borne out. According to Mark de Vries (p.c), the following sentence is ungrammatical, when *kan* is interpreted as a modal, rather than a main verb.

- (120) *Wat wil Jan lezen en wat kan hij?
what wants Jan read and what can he
'What does Jan want to read and what can he read?'

The unavailability of extraction in (120) can be accounted for if we assume that movement of a modal to C in this language occurs not in the same way as English T-to-C movement. Omer Preminger (p.c.) points out that one possible difference between Dutch modal raising and English T-to-C movement would be as follows: In English, the [μ C]-feature on T drives T-to-C movement. However, in Dutch modal raising, C contains a property that drives head movement of modals. Assuming that modals do not contain any featural requirement which is satisfied when a higher head is introduced into the derivation, MCE occurs as soon as a modal externally merges with its complement. Thus, even though both English and Dutch have modal raising, these two languages exhibit the contrast in extractability, depending on what triggers movement of the licenser of ellipsis.

To summarize, even though English T-to-C movement seems to be similar to Dutch V2 modal raising, the extraction facts in these languages may suggest that they are triggered by different mechanisms.

2.6.3. Extraction of D-linked *wh*-objects

In section 2.4.3, I accounted for why object *wh*-phrases cannot be extracted out of the ellipsis site in embedded CoPE, as illustrated in (121). At the point of ellipsis, the object *wh*-phrases cannot escape from the ellipsis site. As a result, they are elided along with v_bP .

- (121) a. *I don't know what Bill *shouldn't* be proud of, but I have a good idea about what he *should*.
- b. *I know what *John* might be proud of, but I don't know what *Bill* might.

- c. *Although Mary wonders what *Tom* will be fond of, she doesn't wonder what *Jina* will.
- d. ?*Although John doesn't wonder what Mary *will* be fond of, Bill does wonder what she *won't*.

Interestingly, however, when object *wh*-phrases are so-called D(iscourse)-linked *wh*-phrases, extraction out of the ellipsis site seems to be acceptable, as illustrated in (122). This is not what the present analysis predicts. If they are base-generated in the canonical object position similar to non D-linked object *wh*-phrases, the present analysis predicts that they should not be able to leave the ellipsis site before ellipsis occurs, and thus, should be elided along with v_bP .

- (122) a. I don't know which achievement you *should* be proud of, but I know which one you *shouldn't*.
- b. Although Mary wonders which book *Tom* will be fond of, she doesn't wonder which one *Jina* will.

Concerning the nature of D-linked *wh*-phrases, when speaker asks a question like *Which cell phone did Mary buy?*, possible answers must be restricted to a set of cell phones that speaker and hearer have in mind. That is, a question with a D-linked *wh*-phrase can be generated when a relevant context is assumed by speaker and hearer. If hearer is not aware of the context assumed by speaker, a D-linked is not felicitous (Pesetsky 1987, 2000). Due to this, Rizzi (1990) assumes that D-linked means pre-

established in discourse and thus, that D-linked *wh*-phrases are similar to topicalized elements.

Given that D-linked *wh*-phrases carry a topic interpretation, I suggest that elements with a topic interpretation can be base-generated adjoined to CP, and thus, D-linked *wh*-phrases, which are topic like, can be base-generated in their surface position. Given this, I propose that the sentence in (123) is generated as follows: a constituent identical to the D-linked *wh*-phrases externally merged in the clause-initial position is base-generated in a theta position. It undergoes movement to spec,CP and is bound by the clause-initial D-linked *wh*-phrase adjoined to CP, and is obligatorily deleted under identity.

(123) Which book did John buy?

a. John buy [which book]

b. [which book]₁ did John buy t₁?

c. Which book₁ [~~which book~~]₁ did John buy t₁?

Note that there is more than one constituent in the left periphery of the clause, even when the clause involves *wh*-movement of a separate constituent. This derivation is possible because a topic and a *wh*-phrase can be located at different left periphery positions of a clause. The following sentence shows that a topicalized element can be located above the moved *wh*-phrase, similar to (123c).

(124) This book₂, [to whom]₁ will Mary give it₂ t₁ ?

Because of the movement of the constituent identical to the D-linked *wh*-phrase base-generated in the left periphery, questions with D-linked *wh*-phrases exhibit island effects, even though the D-linked *wh*-phrase is generated in its surface position.²⁷

- (125) a. *Which book₁ did Mary buy a table and Tom sell *e*₁?
b. ??/*Which car₂ did you wonder who bought *e*₂?
c. ??Which car₃ do you believe the claim that the man bought *e*₃?

The present proposal finds support in arguments that topicalized elements are base-generated in sentence-initial position, and bind a null operator that has moved from its base-position (Chomsky 1981, Lasnik and Stowell 1991), as represented in (126). I will discuss this approach in detail in section 3.3.3.

- (126) Topic₁ Op₁ ... *t*₁

Note that the moving element in (123) is not a null operator, but an overt constituent identical to the D-linked *wh*-phrase base-generated in the Spec,CP. The reason is as follows: Lasnik and Stowell (1991) argue that null operator does not

²⁷ Not all native speakers of English judge that the sentences in (125b) and (125c) are ungrammatical. Goodall (2015) points out that it is claimed that island effects are weakened or removed with D-linked *wh*-phrases, based on Mailing and Zaenen 1982; Cinque 1990; Rizzi 1990; Chung 1994, and that the sentences in (125) are totally grammatical.

induce a Weak Crossover (WCO) effect, while overtly pronounced elements does, as illustrated in (127) and (128), respectively.²⁸

- (127) a. John₁ should be easy for you₂ [*Op*₁ PRO₂ to love t₁].
b. Who₂ did you gossip about t₂ [*Op*₂ despite his₂ teacher's having vouched for t₂].

- (128) a. *Who₁ does his₁ boss dislike?
b. *His₁ friends should mistreat no man₁.

This analysis makes the following prediction: if the moving element coindexed with the D-linked *wh*-phrase base-generated in the left periphery of the sentence were a null operator, it is predicted that sentences with a D-linked *wh*-phrase would not induce a WCO effect. On the other hand, if the moving element were an overt phrase which is deleted under identity after movement, as I proposed in (123), it is expected that sentences with a D-linked *wh*-phrases would induce a WCO effect. Consider the sentence (129).

- (129) *Which man₁ did you say his₁ boss dislikes? (Lasnik and Stowell 1991: 689)

²⁸ It is not uncontroversial if the moving elements in the *tough*-movement construction and the parasitic gap construction. Hicks (2009) argues that what is moved in the former construction is not a null operator, but an overt DP containing a null operator, from which the subject in the main clause is extracted. Additionally Nunes (2001) and Horstein and Nunes (2002) propose that there is no null argument in the adjunct clause in the parasitic gap construction.

(129) shows that the sentence with the D-linked *wh*-phrase is ungrammatical due to a WCO effect. This indicates that the proposal in (123) is on the right track.

Furthermore, a similar proposal that D-linked *wh*-phrases do not need to be base-generated in their theta position is suggested by Iatridou (1995). Clitic (CL) doubling constructions in Modern Greek (MG) exhibit a [S clitic V O] order, where the clitic agrees in features with the object, as illustrated in (130a). These constructions show the following asymmetry: the object *wh*-phrase in (130b) cannot be located in the sentence initial position, while the one in (130c) can.

(130) a. o Kostas *tin* idhe tin Maria

Kostas CL saw Maria

‘Maria, Kostas saw her’

b. *Pion *ton* idhes?

who CL saw

‘Who did you see?’

c. Pia pedhia *ta* maloses?

which children CL scolded

‘Which children did you scold?’

Jaeggli (1982, 1986) points out that \bar{A} -movement is blocked by the presence of a clitic. According to this, the reason (130b) is ungrammatical is that *pion* ‘who’ which is doubled by the clitic *ton* is moved from the direct object position over the clitic. If the *wh*-phrase in (130c) *pia pedhia* ‘which children’ were moved from the object

position similar to *pion* ‘who’ in (130b), it is predicted that the sentence (130c) would also be ungrammatical. Iatridou suggests that discourse-old elements can be base-generated adjoined to the clause containing the coindexed clitic. Given that *pia pedhia* ‘which children’ is D-linked, and that D-linked elements are discourse old, she suggests that the D-linked *wh*-phrase in (130c) is base-generated in the sentence initial position, rather than extracted from the direct object position. Due to this, the *wh*-movement blocking effect of a clitic does not show up in (127c), in contrast to (130b).

If the proposal that D-linked *wh*-phrases can be base-generated adjoined to CP is correct, the grammaticality of the sentences in (122) can be explained as follows: unlike the *wh*-phrases in (121), those in (122) can be base-generated in the embedded Spec,CP position. At the point of ellipsis, they have not been introduced into the derivation. After C merges with TP, the D-linked *wh*-phrases are externally merged into Spec,CP. Due to this, it seems as if the D-linked object *wh*-phrases have been extracted out of the ellipsis site.²⁹

²⁹ This analysis accounts for the grammaticality of the following sentence.

(i) [Which criticism of one of Chomsky₁’s students]₂ did he₁ rebut *t*₂?

The R-expression within the complement of the D-linked *wh*-phrase is base-generated in the position where it is not bound by the coreferential pronoun. According to Sauerland’s (2002) matching analysis, the phonologically deleted phrase is not necessarily lexically identical to its corresponding pronounced counterpart. Rather, in (i), the phonologically deleted phrase can be *which criticism of one of his₁ students*. Thus, the derivation in (i) does not induce Condition C effects.

However, it remains mysterious why some sentences such as (ii) are ungrammatical, even though they have a similar structure as (i).

- (ii) a. *Which report that John₁ was incompetent did he₁ submit? (Fredin 1986)
 b. *Which picture of John does he like? (Hulsey and Sauerland 2006)

Consequently, at first glance, the grammaticality of the sentences in (122) seems to be a problem for the present proposal concerning the timing of ellipsis. However, if discourse-old elements including D-linked *wh*-phrases can be generated at the left periphery of a clause, then the present proposal concerning the timing of ellipsis can be maintained.

2.7. Conclusion

In this chapter, I have developed a novel derivational approach to ellipsis, by investigating the extraction puzzles in English CoPE. First, I have suggested a constraint on the timing of ellipsis. The constraint requires that XP ellipsis occur as soon as all the featural requirements of the licensor of XP ellipsis are satisfied. If they are satisfied just after the licensor is introduced into the derivation, ellipsis occurs before a higher head enters the derivation. On the other hand, if they are not satisfied until a higher head enters the syntactic structure, ellipsis cannot occur no sooner than the higher head is externally merged. This accounts for the asymmetry between embedded CoPE and matrix CoPE in the extractability of object *wh*-phrases out of the ellipsis site. Additionally, in order to explain why embedded regular VPE allows object *wh*-phrase extraction, while embedded CoPE does not, I have proposed that the extended domains of lexical verbs which have semantic contribution contain Voice, while the verbal domain of the copula, which is semantically vacuous, does not.

I will not discuss the underlying reason for the contrast between (i) and (ii) further in this dissertation (For an explanation about the contrast between (i) and (ii), see Lasnik 1988). Of importance is that the generalization that R-expressions inside the complement of (D-linked) *wh*-phrases induce Condition C effects is too strong.

This approach has several theoretical implications. First, the verbal domains of copulas, which are semantically vacuous, do not contain Voice, while the extended domains of verbs that make a semantic contribution contain Voice. Second, between the Probe-driven head movement approach and the Goal-driven head movement approach, the latter is preferable to the former, in that the latter can easily account for the extraction asymmetry, which would remain as a puzzle if we adopted the Probe-driven approach to head movement. Additionally, the contrast in extractability in English CoEP and Dutch MCE indicates that T-to-C movement in English and head movement of modals in Dutch might not occur in the same manner. Lastly, I have suggested that, unlike non D-linked *wh*-phrases, D-linked *wh*-phrases can be generated at the left periphery of a clause without movement, given that D-linked *wh*-phrases are discourse-old, and thus, topic-like.

Chapter 3: What is elided?

3.1. Introduction

In the previous chapter, I discussed when ellipsis occurs – XP ellipsis occurs as soon as all the featural requirements of the licenser of XP ellipsis are satisfied. As mentioned before, there are several existing derivational approaches to ellipsis. In Baltin's (2007, 2012) analysis, ellipsis is deletion of formal features of lexical items inside the ellipsis site, which occurs in overt syntax. The deletion of formal features bleeds vocabulary insertion at PF. On the other hand, Aelbrecht (2010) proposes that an E-feature on the head that selects the elided XP establishes an Agree relation with a licenser. Then, the ellipsis site is sent to PF. Because of the phonological requirement of the E-feature on the head that selects the ellipsis site, vocabulary insertion of lexical items inside the ellipsis site is inhibited. Despite some differences, these approaches have two aspects in common. One is that ellipsis is not deletion of sound. Rather, ellipsis is a failure of vocabulary insertion that is caused by particular operations occurring in narrow syntax. The second one is that both authors argue that once XP ellipsis occurs, everything inside XP becomes frozen for further formal operations. The reasons are as follows: In the case of Baltin's analysis, lexical items inside the ellipsis site are deprived of their formal features. Thus, they become invisible as far as formal operations are concerned. In Aelbrecht's account, the ellipsis site is Spelled-out as soon as the head selecting the ellipsis site enters into an Agree

relation with the licensor. Once the ellipsis site is sent to the interfaces, it is not accessible to any formal operations that happen in narrow syntax.³⁰

However, in this chapter, I will argue that ellipsis does not cause elided elements inside the ellipsis site to be inert. Rather, they can take part in further formal operations that occur after ellipsis in narrow syntax. In section, 3.2, I propose that this is possible because what is elided as a result of ellipsis is merely the phonological feature matrices of lexical items inside the ellipsis site, and I argue that lexical items that are inside the ellipsis site at the point of ellipsis visible for further formal operation.³¹ In section, 3.3, I provide support for this proposal from Copular Phrase

³⁰ They argue that this freezing effect is supported by the following fact: In the BrE *do* construction, a quantifier object cannot scope over the quantified subject, as illustrated in (ia). This sharply contrasts with the non-elliptical sentence in (ib).

- (i) a. Some man will read every book, and some woman will do, too.
(✓some > every, *every > some)
b. Some man will read every book, and some woman will read every book, too.
(✓some > every, ✓every > some)

Recall when the complement of *do* is elided: it occurs when *do*, which is an overt realization of *v*, merges with the ellipsis site, namely VP, in Baltin's analysis. Since not *v* but Voice is a phase head, Spec, *v*VP is not an appropriate intermediate landing site for \bar{A} -moving elements. At the point of ellipsis, the quantifier object in (1a) stays in VP, and thus, its formal features are removed. As a result, it becomes invisible for any further operation, so that it cannot undergo Quantifier Raising (QR) – the quantified object cannot be located higher than the quantified subject at any point of derivation, assuming that the QR effect results from movement in narrow syntax (Bobaljik 1995). This is also true in Aelbrecht's analysis. VP containing the quantified object is sent to the interfaces as soon as the uninterpretable inflectional feature on *v* Agrees with the interpretable categorial feature on the same head. As a result, the quantified object cannot move further to generate the QR effect.

³¹ In Distributed Morphology I adopt in this dissertation, there is no lexical item (in narrow syntax). Thus, using the term "lexical item" is not appropriate. Strictly speaking what is elided as a result of ellipsis is PFMs of all the heads inside the ellipsis site, assuming that every head which vocabulary insertion applies to at PF contains a PFM. However, in this dissertation, I will use the term "lexical item" for the sake of simplicity.

Ellipsis (CoPE) in English. In section, 3.4, I present an example which seems to be a problem for the present analysis, and propose an independent prosodic requirement that can rule out that example, adopting and modifying Richards's (2016) Contiguity Theory. Section 3.5 provides concluding remarks.

3.2. Proposal

Chomsky (1965) suggests that a lexical item is a bundle of three distinct types of features – formal features, semantic features, and phonological features. On the other hand, Halle and Marantz (1993) propose that that the phonological features are not contained in a lexical item when it is pulled out of the lexicon. Rather, phonological features (i.e. segmental content) are inserted into the lexical item at PF – a distinct operation, which they name Vocabulary Insertion. In this dissertation I adopt Halle and Marantz's view. However, I also assume the following points: Even though phonological features are not present in the lexical items in narrow syntax, every lexical item contains a phonological feature matrix (PFM) which is initially empty. As part of post-syntactic Vocabulary insertion, phonological features are placed into the PFM. Additionally, the formal features of a lexical item are present in a lexical item when it enters the syntactic derivation from the lexicon, located inside a formal feature matrix (FFM). I will put semantic features aside, as they are unrelated to the present discussion.³² For instance, the lexical item *mother* (i.e. *nP* in this case) is composed of the FFM, and the PFM which is empty in narrow syntax, as illustrated in

³² I assume in this dissertation that QR occurs in narrow syntax, adopting Bobaljik (1995). This means that QR is triggered not by any semantic feature, but by some syntactic/formal feature that is visible in narrow syntax.

(1). The phonological features which are responsible for sound of the lexical item, are inserted into the PFM at PF.

(1) The representation of the lexical item *mother* in narrow syntax

$$\langle mother \rangle \begin{bmatrix} \text{PFM} & [\quad] \\ \text{FFM} & [\dots] \end{bmatrix}$$

On the basis of this structure of lexical items, I suggest that ellipsis is a syntactic operation that only eliminates the PFMs of lexical items inside the ellipsis site. However, ellipsis does not get rid of the items' FFMs. This is illustrated in (2). This implies that even though a syntactic operation cannot access the phonological features inside PFMs, it can make reference to the PFMs themselves.

(2) The representation of the lexical item *mother* after ellipsis

$$\langle mother \rangle \begin{bmatrix} \text{PFM} & [\quad] \\ \text{FFM} & [\dots] \end{bmatrix} \xrightarrow[\text{ELLIPSIS}]{\downarrow} \langle mother \rangle \begin{bmatrix} \text{FFM} & [\dots] \end{bmatrix}$$

Once the PFMs of lexical items are eliminated, segmental content (i.e., phonological features) cannot be inserted into those elements, and thus, they are not pronounced at PF. On this view, there are two types of silence: First is the case where lexical items retain their PFMs at PF, but segmental content is not inserted into those PFMs due to the idiosyncratic phonological properties of the lexical items. Null operators and PRO/*pro* are instances of such lexical items. In section, 3.7, I will argue that some

interrogative complementizers in English are also included in this group of lexical items, based on the assumptions in Richards (2016). A second type of silence is elements whose PFMs are eliminated as a result of ellipsis, which has occurred in the narrow syntax. This can be represented as in (3).

(3) Two types of silence

a. Elements with an empty PFM

b. Elements whose PFM is eliminated

$$\langle X \rangle \begin{bmatrix} \text{PFM} & [\quad] \\ \text{FFM} & [\dots] \end{bmatrix}$$

$$\langle Y \rangle [\text{FFM} \quad [\dots]]$$

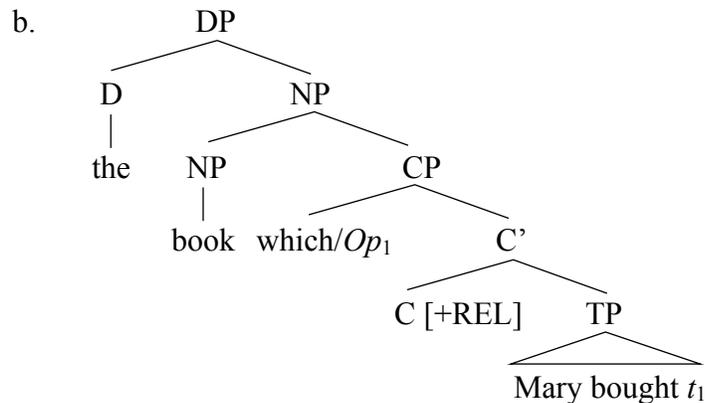
The proposal that ellipsis only gets rid of the PFMs of lexical items inside the ellipsis site predicts that lexical items that have been deprived of their PFMs could be eligible goals/targets for formal operations that occur after deletion, since the lexical items still contain their FFMs. One important subcase of this prediction is that null operators located inside the ellipsis site at the point of ellipsis should be able to undergo movement after ellipsis, assuming that null operators retain FFMs. This contrasts with the proposal by Baltin (2007, 2012) and Aelbrecht (2010) that once ellipsis occurs, everything inside the ellipsis site becomes inert for further formal operation. In what follows, I provide arguments supporting the present proposal over Baltin's and Aelbrecht's alternatives.

3.2.1. Relative Clauses

In order to illuminate the structure of English (restrictive) relative clauses, three main approaches have been proposed. One is the head external analysis, suggested by

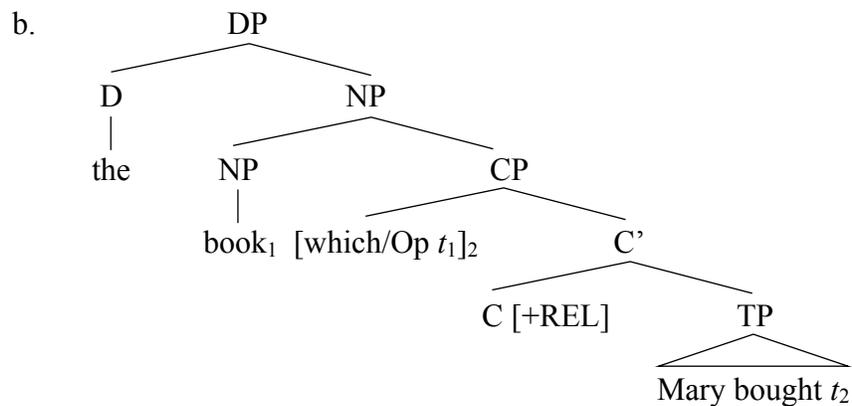
Partee (1975), Chomsky (1977), and Jackendoff (1972). In this approach, a relative head NP is generated outside the relative clause, and an operator is moved to the highest position of the relative clause within the relative CP. This is illustrated in (4). The relative CP is adjoined to the external head NP, and these two syntactic objects are combined semantically through intersective modification.

(4) a. [_{DP} the [book] [_{CP} which/*Op*₁ Mary bought *t*₁]]



Another approach is the raising analysis argued for by Vergnaud (1974), Kayne (1994), and Bhatt (2002). On this analysis, the head NP is in fact base-generated inside the relative clause, and subsequently moves out of the relative CP. That is, the external relative head noun and the internal head noun are one and the same syntactic object. In this derivation, the operator and the relative head noun form a constituent when they are base-generated in a theta position within the relative clause. The constituent as a whole moves to the highest position in the relative CP, and the relative head noun moves further out of the relative CP to its surface position. This is represented in (5).

(5) a. [_{DP} the [_{book}]₁ [_{CP} [_{which/Op} *t*₁]₂ Mary bought *t*₂]]

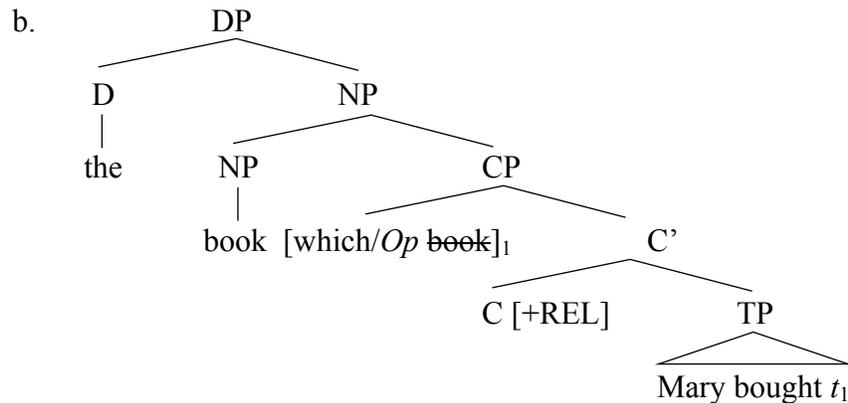


The last approach is the matching analysis, proposed by Lees (1960), Chomsky (1965), and Sauerland (1998). On this approach, relative clauses have both an overt external head and a corresponding overt internal head, which do not form a movement chain. The internal head is base-generated in its theta position inside the relative clause, and moves to the highest position of the relative clause. The internal head is then phonologically deleted under identity with the external head NP. This is illustrated in (6).

(6) a. [_{CP} [_{which/Op} book]₁ Mary bought *t*₁]



[_{DP} the [_{book}] [_{CP} [_{which/Op} ~~book~~]₁ Mary bought *t*₁]]



Hulsey and Sauerland (2006) argue that there are certain environments where the matching analysis is forced. One is the case where the relative CP has been extraposed, as exemplified in (7).

(7) I bought the book last week that John read.

It is well known that there is an asymmetry between complements and adjuncts with respect to extraction from direct objects. As illustrated in (8a), a complement can be extracted from the object. However, an adjunct cannot, as shown in (8b).

(8) a. [Of whom]₁ did you see [a painting t₁]?

b. *??From where/*??By whom₂ did you see [a painting t₂]?

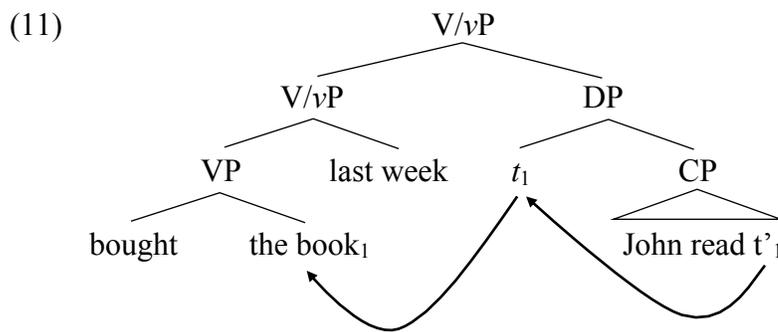
Nonetheless, both the complement and the adjunct of the object can be extraposed, as illustrated in (9).

- (9) a. We saw a painting yesterday of John.
b. We saw a painting yesterday by John.

In order to account for how the adjunct of the object in (9b) can be extracted, Fox and Nissenbaum (1999) argue that the sentence is generated through late-merger of the adjunct, as suggested by Lebeaux (1988) (cf. Chomsky 1993). That is, contrary to the complement of a nominal which must be base-generated inside the projection headed by the nominal, an adjunct can be counter-cyclically adjoined to the nominal it modifies. Fox and Nissenbaum also propose that adjuncts can be adjoined not only to overtly moved elements, but also to elements that are moved covertly, as a result of QR (see also Bhatt and Pancheva 2004, 2007; Takahashi and Hulsey 2009, among others). Based on this, the derivation of (9b) is illustrated in (10). The direct object is base-generated in the complement position of the verb in (10a). In (10b), the direct object undergoes covert movement, and is adjoined to the right of V/vP. The unpronounced part of QRred element is represented with angled brackets. In (10c), the adjunct of the direct object is adjoined to the QRred element.

- (10) a. We saw a painting yesterday.
b. We saw a painting yesterday <a painting>.
c. We saw a painting yesterday <a painting> by John.

Similarly, extraposition of relative clauses such as (7) cannot be generated through overt movement of the relative CP, since the relative CP is an adjunct of the direct object. Suppose that the relative CP is base-generated adjoined to the right of V/vP above the adverb *last week*. Then, raising analysis cannot account relativization in (7). The reason is as follows: Under the raising analysis, the direct object in (7) must originate from the relative CP. In order for the DP *the book* to be followed by the adverb *last week*, the DP containing the relative head NP must undergo overt lowering to the complement of the verb, as illustrated in (11).



Given the assumption that a phrase cannot undergo (pseudo-)downward movement, the derivation in (11) is ruled out.

On the other hand, the matching analysis can straightforwardly account for (7). *The book* in (7) is merged as a complement of the verb. From this position, it undergoes QR and it is adjoined to the right of V/vP, higher than the adverb *last week*. Subsequently, the relative CP is late-merged to the QRed direct object. The internal head base-generated in its theta position moves to the highest position inside the relative CP, and is elided. This is represented in (12).

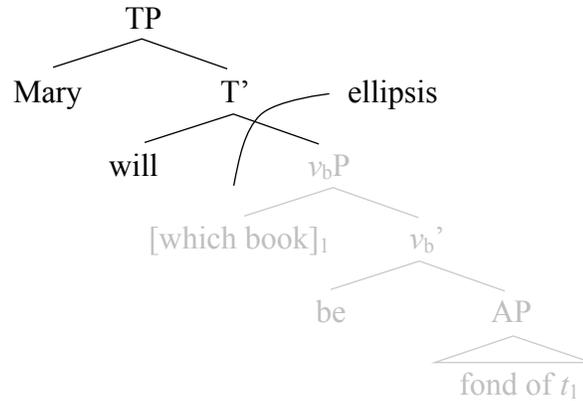
In the sentences in (13), the relative CPs are extraposed. (13b) is perhaps slightly better than (13a). However, when v_bP is elided as a result of CoPE, there is a sharp contrast in the grammaticality, as shown in (14).

- (14) a. *Tom will be fond of all the books next year which Mary will ~~be fond of~~.
b. ?Tom will be fond of all the books next year that Mary will ~~be fond of~~.

In both (14a) and (14b), CoPE occurs just after T merges with the ellipsis site. This is because all the featural requirements in T – Agree in φ -features and the EPP – are satisfied before C enters the derivation, as I have suggested in the previous chapter. Then, since the operator and the internal head in (14a) and (14b) fail to escape from the ellipsis site at the point of ellipsis, they must be elided along with v_bP .

There are two questions that arise here. First, why do the two sentences in (14) exhibit a sharp contrast in grammaticality? Second, in order for (14b) to be grammatical, the uninterpretable feature on the relative C with the EPP property, namely the [uOp^*], must be satisfied. How can it be satisfied even though the null operator containing a matching interpretable feature (e.g. the [iOp]-feature) is elided within the ellipsis site? These questions can be accounted for with the proposal advanced in this chapter: At the point of CoPE, both the operator *which* and the internal head *book* fail to escape from the ellipsis site. This is illustrated in (15). For expository purpose, lexical items whose PFMs are eliminated are represented with gray letters.

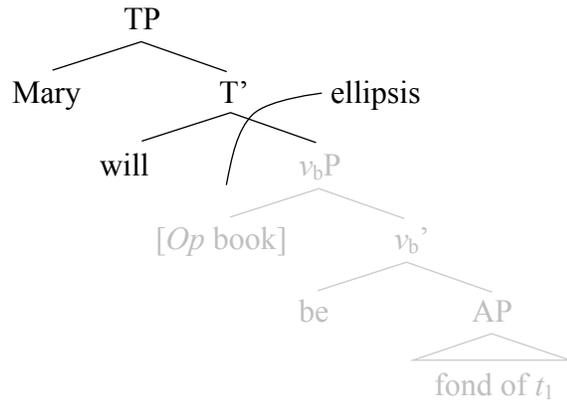
(15)



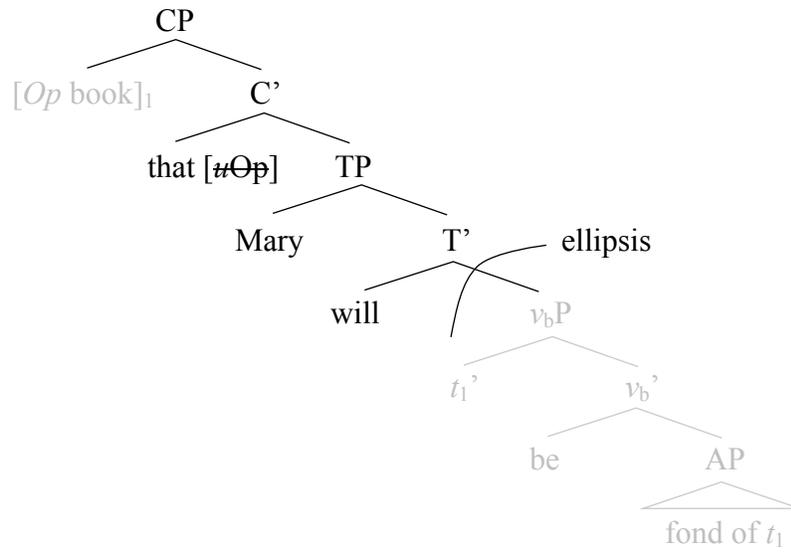
When ellipsis occurs, the PFMs of the lexical items inside v_bP , including the operator *which* and the internal head *book*, are eliminated. However, in (14a), the operator *which* is pronounced outside the ellipsis site. Consequently, (14a) is ungrammatical, since the operator whose PFM has already been removed is pronounced outside the ellipsis site.

On the other hand, in (14b), the relative operator is null, and *that* is a complementizer. When CoPE occurs, the PFM of the null operator and the internal head *book* are removed. Nonetheless, the constituent consisting of the null operator and the internal head, which are deprived of their PFMs, are eligible for further formal operations. Subsequently, the null operator and the internal head, which now lack PFMs, can enter into an Agree relation with relative C containing the $[uOp^*]$ -feature, and undergo movement to Spec,CP of the relative clause. As a result, the EPP requirement on C is satisfied. This illustrated in (16).

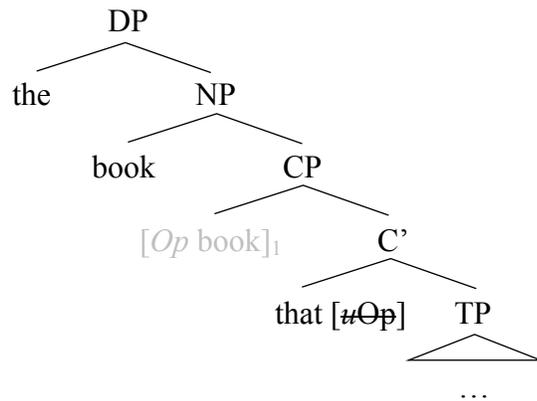
(16) a. STEP 1: CoPE



b. STEP 2: further movement



c. STEP 3: adjunction of the relative CP to an external head



Consequently, the grammaticality of (14b) supports the proposal that elided elements can participate in further formal operations occurring after ellipsis in narrow syntax – their FFMs are preserved as a result of ellipsis, even though their PFMs have been eliminated.

This analysis predicts the following: if the overt relative operator *which* in (14a) were not pronounced, the sentence would be grammatical. This is because even though the PFM of *which* is removed as a result of ellipsis inside the ellipsis site, the $[iwh]$ feature of the operator, which now lacks its PFM, can Agree with the $[uwh^*]$ feature on the relative C, and the relative operator moves to relative Spec,CP, satisfying the EPP requirement of the relative C. The sentence (17) shows that this prediction is not borne out.

(17) *Tom will be fond of all the books next year Mary will ~~be fond of~~.

However, this does not undermine the present analysis. The reason is as follows: consider the sentence (18).

(18) *Tom will be fond of all the books next year Mary will be fond of.

This sentence is ungrammatical even though CoPE does not occur. This implies that a certain constraint prevents a relative CP where neither a relative operator *which* nor the complementizer *that* is not pronounced from being extraposed. This in turn shows that the ungrammaticality of (17) does not result from ellipsis, but from the prospective constraint that rules out (18). I will not discuss the constraint further, since it is beyond the scope of this dissertation.

If everything deleted inside the ellipsis site were frozen for further operations, as Baltin and Aelbrecht suggest, it would be erroneously predicted that both (14a) and (14b) would be ungrammatical. This is because the feature [*uOp**] or [*uwh**] on C could not be satisfied – it could not Agree with its matching interpretable feature, and the EPP requirement would not be satisfied.

3.2.2. Comparative deletion

English Comparative deletion is exemplified in (19).

- (19) a. John picked up more apples than he ate.
b. Mary is taller than Bill is.

One of the syntactic properties of comparative deletion is that the compared constituent is identical to the head of the comparative, which is underlined, and is obligatorily deleted (Bresnan 1975). This is illustrated in (20).

- (20) a. John picked up more apples than he ate ~~x many apples~~.
b. Mary is taller than Bill is ~~x tall~~.

A second property of comparative deletion is that sentences are ungrammatical when the gap coindexed with the comparative head is located inside an island (Ross 1967; Huddleston 1967; Chomsky 1977; Postal 1998; among others). Additionally, comparative deletion exhibits crossover effects (Bresnan 1975; Chomsky 1977). These properties are illustrated in (21) and (22), respectively.

- (21) a. Complex NP island

*Michael has more scoring titles than Dennis is a guy who has.

- b. *Wh*-island

*The shapes were longer than I wondered whether they would be.

- c. Adjunct-island

*My sister drives as carefully as I avoid accidents when I drive.

(Kennedy 2002)

- (22) a. More students₁ flunked than they*_{1/2} thought would flunk.
b. More students₁ re-registered than their*_{1/2} teachers gave C's to.

(Bresnan 1975)

These two properties are indicative of \bar{A} -movement of an element within the comparative CP. Given this, Kennedy (2002) proposes that English comparative deletion is formed in the manner stated in (23).

- (23) Comparative deletion involves overt movement of the compared constituent to the specifier of a clausal complement of *than/as*, plus deletion under identity with the head of the comparative (cf. Hankamer 1971; Chomsky 1977)³³

Kennedy points out that this analysis is similar to the matching analysis of restrictive relative clauses, in that a constituent moves to the highest position within comparative relative CPs, and is elided under identity with another constituent outside those CPs.

If Kennedy's analysis of comparative deletion in English is correct, the derivation of (24a) is as represented in (24b).

³³ The final version of the rule of English comparative formation suggested in Kennedy (2002) is in (i).

(i) English Comparative Formation

Move the compared constituent to the specifier of the complement of *than*.

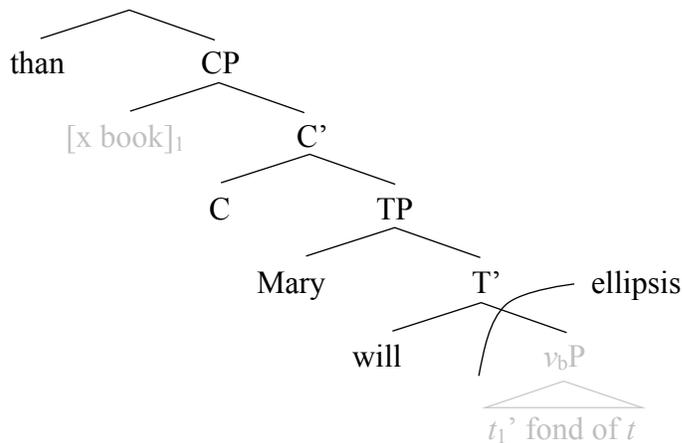
The present analysis is compatible with both (23) and (i).

- (24) a. John read more books than Mary did.
 b. John read more books₁ than [_{CP} [~~x books~~]₁ Mary did [_{VoiceP} *t*₁' [~~v_{VP} read t₁~~]]]

In (24b), the compared constituent [x books] first moves to Spec,VoiceP, which functions as an escape hatch. As soon as the featural requirements of T are satisfied, vP is elided. When comparative C merges with TP, [x books] undergoes movement to Spec,CP of the relative clause, satisfying the EPP requirement on C. Subsequently, it is deleted under identity with the head of the comparative in the main clause.

Now, let us consider comparative deletion when combined with CoPE, as illustrated in (25a).

- (25) a. ?John will be fond of more friends than Mary will ~~be fond of~~.
 b.



In this sentence, the compared constituent moving within the *than*-CP fails to escape from the ellipsis site at the point of ellipsis. Suppose that elided element could not participate in further formal operation, as Baltin and Aelbrecht suggest. Then, the

uninterpretable feature on the head of *than*-CP, which has an EPP property triggering movement of the compared constituent to Spec,CP could not be satisfied. If this were correct, it is predicted that the sentence (25a) should be ungrammatical, contrary to fact. The grammaticality of (25a) indicates that the elided element can be an eligible target/goal for further formal operation occurring in narrow syntax. That is, the uninterpretable feature on C Agrees with a matching feature on the compared constituent, and its EPP requirement is satisfied by movement of the compared constituent to Spec,CP of the *than*-CP. This is possible because the FFMs of the compared constituent are preserved, even though its PFMs are eliminated as a result of CoPE, and thus, it is visible for the operations after ellipsis. This is illustrated in (25b).

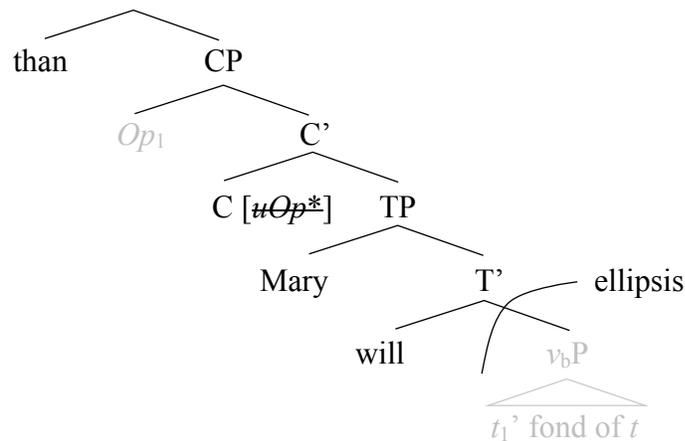
Unlike Kennedy (2002), Chomsky (1977) suggests that what moves within the *than*-CP is not an overtly pronounced compared constituent, but an operator coindexed with the comparative head, as illustrated in (26).

- (26) a. John picked up more apples than he ate.
 b. John picked up more apple_i than [_{CP} Op_i he ate t_i]

Recall that I assume that null operators contain their FFMs, even though their PFMs are empty at PF, and thus, they are not pronounced. If this is right, Chomsky's analysis of comparative deletion is entirely compatible with the present analysis of ellipsis. In (25a), the null operator must move to Spec,CP of the *than*-CP due to the [*uOp**]-feature on the head of the *than*-CP. Since the null operator cannot be located

outside the ellipsis site at this point in the derivation, the PFM of the null operator is eliminated. Nevertheless, its FFM is preserved. Thus, [*uOp**] on C Agrees with [*iOp*] located on the null operator, and the null operator moves to Spec,CP of the *than*-CP to satisfy the EPP requirement on C. This is illustrated in (27).

(27)



The grammaticality of (25a) implies that an approach in which the pronounced comparative head raises to its pre-*than*-position from within the *than*-CP, similar to the Raising analysis of restrictive relative clauses (cf. Lechner 2007b), is not compatible with CoPE. If the comparative head were moved out of the *than*-CP in (25a), it would not be possible to explain how the head is pronounced in its surface position, even though its PFM has already been eliminated when *v*_bP ellipsis occurs. Importantly, this would be just as severe a problem for alternative theories of ellipsis, such as Baltin's (2007;2012) and Aelbrecht's (2010), discussed at length in chapter 2.

Bresnan (1972, 1973) and Chomsky (1977) point out that some dialects of American English allow comparative deletion where an overt comparative operator is present.

(28) ?John will be fond of more friends than what Mary will be fond of.

The overt operator in (28) is base-generated in the predicate position inside the *than*-CP, and moves to the highest position of the complement of *than*. Howard Lasnik (p.c.) points out that if this is true, it is predicted that the sentence (28) with CoPE would be ungrammatical. This prediction is borne out as shown in (29).

(29) ??John will be fond of more friends than what Mary will ~~be fond of~~.

To summarize, whether we take Kennedy's (2002) approach, similar to the Matching theory, or Chomsky's (1977) null operator movement approach, comparative deletion combined with CoPE lends further support to the present proposal concerning ellipsis. If everything inside the ellipsis site of CoPE were frozen for further formal operations, as suggested in Baltin (2007, 2012) and Aelbrecht (2010), then the grammaticality of (25a) could not be accounted for. In this respect, the proposal advanced in this chapter is superior to existing derivational approaches.

3.2.3. Topicalization

There are (at least) two kinds of analyses of English topicalization. One is the movement approach, where a topicalized element is a part of a movement chain. That

is, a topic phrase comes to be located in its surface position through movement, as illustrated in (30) (Baltin 1982; Lasnik and Saito 1991, among others).

(30) Topic₁ [TP ... t₁]

The second one is the base-generation approach to topicalization. In this approach, a topicalized element is base-generated in the clause-initial position and binds a null operator that has moved from its base position, as shown in (31) (Chomsky 1977; Lasnik and Stowell 1991).

(31) Topic₁ Op₁ ... t₁

I assume here that the null operator creating a movement chain moves to Spec,CP, and that the topicalized element is base-generated adjoined to CP. This is in line with the analysis of Hanging Topic Left Dislocation (HTLD), exemplified in (32).

(32) (As for) John₁, I believe that Mary likes him₁.

The presence of the resumptive pronoun coindexed with the topic phrase indicates that the topicalization in (32) is not derived through movement of *John*, given that \bar{A} -moved elements do not permit resumptive pronouns in English. Furthermore, an HTLDED element can be followed by a *wh*-phrase located in Spec,CP, as shown in (33).

- (33) a. This book₁, to whom should they give it₁?
 b. Mary₂, who do you think saw her₂?

Assuming that only one \bar{A} -operator can internally merge into Spec,CP by an EPP feature on C in English (cf. the doubly filled COMP filter), the grammaticality of (33) implies that the HTLDED element is not located in the sentence initial position through movement. Rather, it must be base-generated adjoined to CP (see also Chomsky 1977; Grohmann 2000, among others).

Assuming that topic constructions can be generated through adjunction of a topicalized element to CP, let us consider the following sentences.

- (34) a. I think John won't be fond of this book, but [that book]₁, I think he will ~~be fond of~~ e_1 .
 b. People said that Bill mightn't be proud of Jane's success, but [Mary's success]₂, people said he might ~~be proud of~~ e_2 .

In the base-generation approach, each topicalized element in (34) is base-generated in the sentence initial position of the second conjunct, and its coindexed null operator has to move from its base position to the periphery of the clause. The grammaticality of the sentences in (34) indicates that the null operator, which fails to be located outside the ellipsis site at the point of ellipsis, can nevertheless participate in further formal

operations. If Baltin's and Aelbrecht's ellipsis freezing effects were correct, it would be predicted that the sentences in (34) should be ungrammatical.

Jeffrey Lidz (p.c.) points out that the following sentence is grammatical, where the topicalized phrase contains a reflexive.

(35) I think John won't be fond of Mary's portrait, but [the portrait of himself₁]₂, I think he₁ will ~~be fond of~~ e₂.

If the topicalized element were base-generated in the empty category position, and moved to the surface position, it would be predicted that the sentence would be ungrammatical. This is because at the point of ellipsis, the topic fails to be located outside the ellipsis site, and thus, its PFM must be eliminated, which prevents segmental content from being inserted into the PFM. In order to account for the grammaticality of (35), I suggest that the topicalized element in (35) is base-generated in its surface position, and a null operator coindexed with the topic phrase makes a movement chain. Even though the null operator stays inside the ellipsis site at the point of ellipsis, it can move further to Spec,CP, since it still contains the FFM. In this case, the reflexive in the topicalized element is an exempted anaphor, in that it is licensed even though there is no appropriate A-binder.³⁴

³⁴ Consider the following HTLD sentence.

(i) [The portrait of himself₂]₃, John₂ dislikes it₃.

The HTLDed element is base-generated adjoined to CP, which means that the reflexive lacks an A-binder. The fact that the reflexive is licensed indicates that it is an exempted anaphor. This supports the idea that the reflexive inside the topicalized

To summarize, assuming that the base-generation approach to topicalization is an available option in analyzing English topicalization, the grammaticality of the sentences in (35) supports the proposal that elements which retain their FFMs can participate in syntactic operations occurring after ellipsis, even though they are deprived of the PFMs as a result of ellipsis.

3.3. *Wh*-movement after deletion

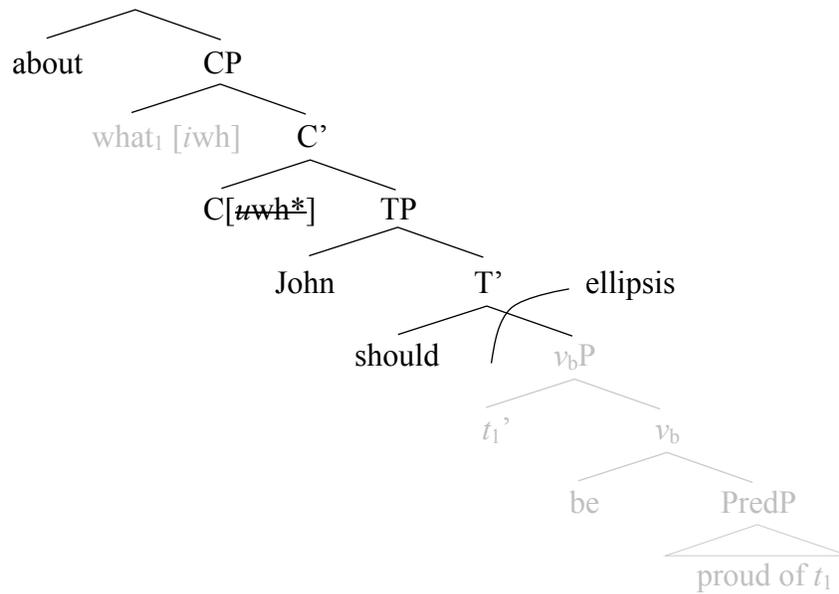
I have argued that elements that have been deprived of their PFMs are eligible for further formal operations. Due to this, they can be appropriate targets/goals for Agree and movement. Bearing this in mind, consider (36).

- (36) *I don't know what John shouldn't be proud of, but I have a good idea about
 John should ~~$[\nu_{VP} \text{ what}_i \text{ be } [\nu_{PredP} \text{ proud of } t_i]]$~~ .

Without further modifications, the present proposal predicts that the sentence in (36) would be grammatical. The reason is as follows: the *wh*-element in the second conjunct fails to exit the ellipsis site by the time CoPE occurs, and thus, the PFM of *what* is removed inside ν_bP . However, the *wh*-element can take part in further formal operations. Subsequently, the $[\mu_{wh}]$ -feature with an EPP property on the embedded C can Agree with the $[\iota_{wh}]$ -feature of the *wh*-element, and the *wh*-element can move to Spec,CP – even though it is not pronounced. This is illustrated in (37).

element in (35), which is base-generated adjoined to CP, can also be an exempted anaphor.

(37)



However, the sentence is ungrammatical. Thus, this example seems to be a problem for the present approach. In section 3.6.1, I will briefly review Richards' (2016) Contiguity Theory. In section 3.6.2, I modify Richards' Contiguity, and argue that (34) can be ruled out by an independent prosodic constraint that *wh*-questions universally obey. This, in turn, means that the ungrammaticality of (36) does not undermine the present proposal of ellipsis after all.

3.3.1. Richards' (2016) Contiguity Theory

Richards (2016; see also Richards 2010) proposes that syntax can make reference to some types of phonological information. Moreover, syntax generates a prosodic representation as the derivation proceeds, alongside the syntactic representation. Richards' approach to prosodic representation is based on Match Theory (Selkirk 2009, 2011; Elfner 2012; Clemens 2014, among others). This theory proposes that all languages have prosodic boundaries both at left and at right edges of all maximal

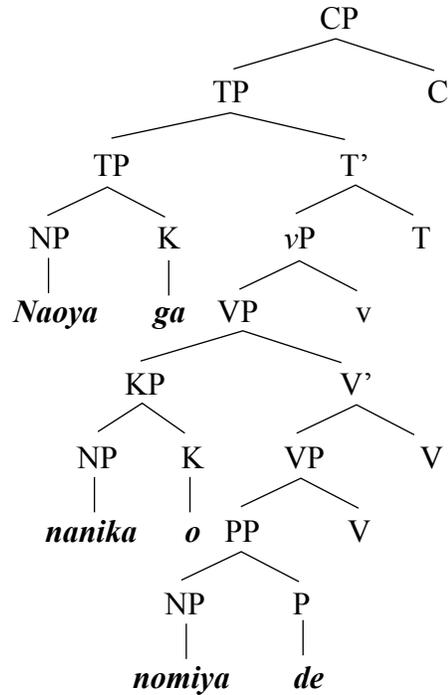
projections. Languages differ, however, depending on which edges of maximal projections certain prosodic phenomena are associated with. Richards refers to boundaries that have prosodic effects as *prosodically active*. This proposal contrasts with end-based theories of prosody (Selkirk 1984; Selkirk and Tateishi 1988, among others), whereby languages are classified into two types depending on which edge of maximal projections is mapped onto a prosodic boundary – a prosodic boundary is placed at left edges of certain maximal projections in some languages, while it is placed at right edges of certain maximal projections in other languages. A set of representative mapping principles in Match Theory is given below:

- (38) Matching Principles in Match Theory (Richards' version)
- a. Every syntactic (possibly complex) head corresponds to a prosodic word ω .
 - b. Every XP corresponds to a phonological phrase ϕ .
 - c. Every clause corresponds to an intonational phrase ι .

For instance, the Japanese declarative sentence in (39a) has the syntactic tree represented in (39b).

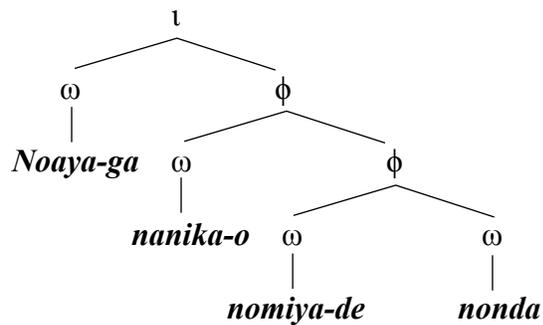
- (39) a. Naoya-ga nanika-o nomiya-de nonda.
 Naoya-NOM something-ACC bar-at drank
 ‘Naoya drank something at the bar.’

b.

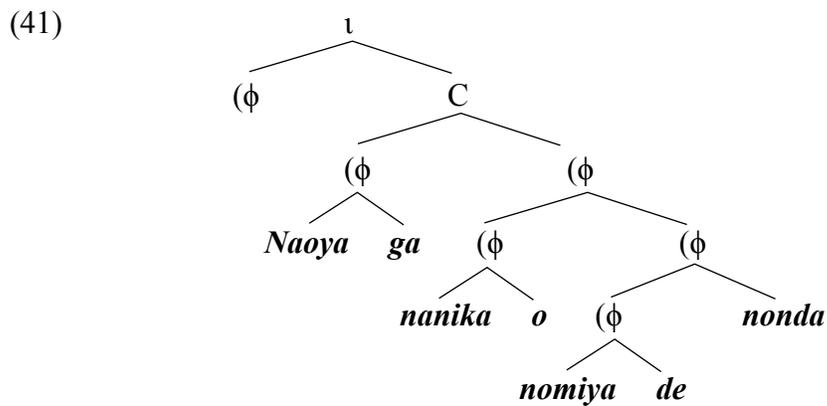


According to Match Theory, the syntactic tree in (39b) is mapped onto the prosodic tree in (40), which is the result of applying *pruning* to the syntactic tree. That is, only phonologically contentful elements in the syntactic representation are preserved in the prosodic one. The declarative complementizer, which is phonologically null in Japanese, is absent in the tree. Additionally, the Japanese case morphemes are not treated as independent prosodic words.

(40)



Richards, however, proposes that the prosodic tree created in the narrow syntax is more isomorphic to the syntactic tree than Match Theory suggests, as illustrated in (41).



The prosodic tree in (41) differs from that in (40) in three aspects. Firstly, as for the complementizer, it is present in the prosodic tree, even though it ends up without phonological content. The reason is as follows: In Japanese, unlike the declarative complementizer in (39), interrogative complementizers are overtly pronounced. This means that whether or not a particular complementizer is pronounced is a matter of lexically idiosyncratic properties, and thus, the fact that a particular complementizer is phonologically null is represented neither in the narrow syntax nor in the accompanying prosodic structure. Consequently, within the narrow syntax, complementizers are not treated as phonologically null elements, but considered as eligible objects in creating prosodic trees generated by the narrow syntax. In other words, syntactic objects whose phonological realization is determined by lexically idiosyncratic properties are visible in prosodic trees within the narrow syntax.

Consequently, the prosodic tree generated by the narrow syntax can contain null complementizers. Secondly, even though the case morphemes are dependent on their associated nouns, they are represented as independent words within the narrow syntax. Finally, in the case of Japanese, certain prosodic phenomena such as Initial Lowering are associated with the left edges of prosodic phrases. Due to this, in this language, the left edges of phonological phrases are considered phonologically active. In (39), prosodically active edges are represented as parentheses to the left of every ϕ .

Next, let us consider the interrogative sentence in (42), corresponding to the declarative sentence in (39a).

- (42) Naoya-ga nani-o nomiya-de nonda no?
 Naoya-NOM what-ACC bar-at drank Q
 ‘What did Naoya drink at the bar?’

Richards proposes that *wh*-questions universally obey the following prosodic condition, called Contiguity.

(43) **Contiguity**

Given a *wh*-phrase α and a complementizer C where α takes scope, α and C must be dominated by a single ϕ , within which α is *Contiguity-prominent*.

(44) **Contiguity-prominent**

α is Contiguity-prominent within ϕ if α is adjacent to a prosodically active edge of ϕ .

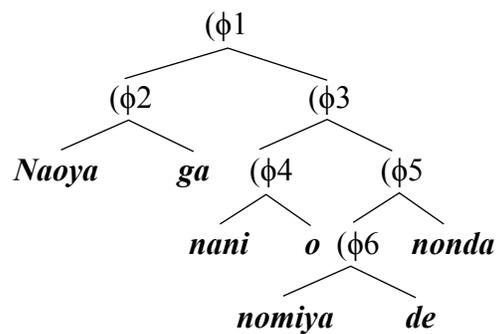
One of the ways of satisfying Contiguity between an interrogative C and a *wh*-phrase, which is relevant to the current discussion, is Grouping. This is an operation that alters prosodic structure.

(45) **Grouping**

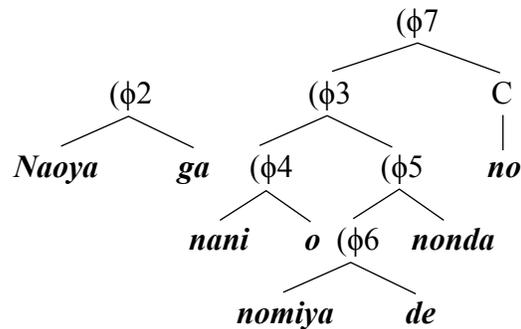
Given a *wh*-phrase α and a C with which α is in a Probe-Goal relation, create a ϕ which dominates C and has α at one of its edges.

Recall that prosodic structures are generated as the derivation proceeds. Before C merges with TP, the prosodic structure of TP is as in (46a). (For expository purposes, the ϕ nodes are numbered, following Richards (2016).) When C merges with TP, Grouping applies to C, generating (46b).

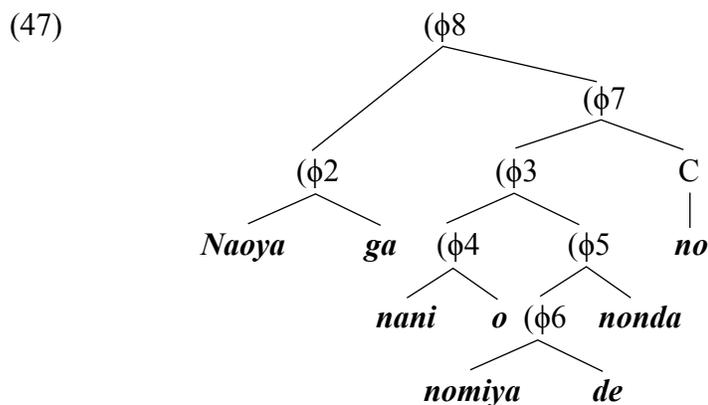
(46) a. STEP 1. Completion of TP



b. STEP 2. Merger of C + Grouping

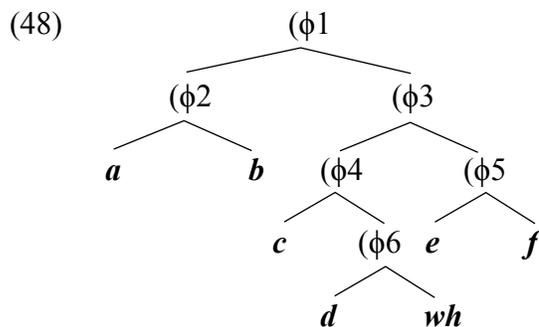


As a result of Grouping, the phonological phrase $\phi 7$ containing C and the *wh*-phrase that Agrees with it is created, destroying $\phi 1$. In addition, the *wh*-phrase is contiguity-prominent, in that the *wh*-phrase is adjacent to the prosodically active edge $\phi 7$ (i.e. any prosodic effect associated with the prosodically active edge $\phi 7$ is realized on the *wh*-phrase). Consequently, this derivation satisfies the phonological constraint in (43). When CP is completed, the CP node is mapped onto a new ϕ to obey the general condition in Match theory, namely (38b). This is illustrated in (47).

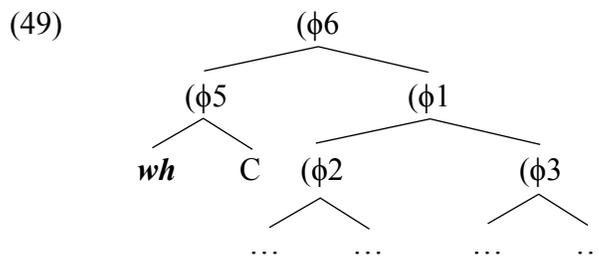


As shown above, through Grouping, Japanese *wh*-questions come to obey the prosodic condition in (43) without movement. Thus, this language allows *wh*-in-situ.

Now, imagine languages where prosodically active edges are left edges of maximal projections and the CP projection is head-initial. Tagalog is such a language. The representation of TP in such a language, prior to merger of C, is illustrated in (48) (individual letters in terminal nodes represent lexical items).



When C merges with TP in the narrow syntax, Grouping cannot occur with the *wh*-phrase remaining in its base-position. That is, there is no way to create a phonological phrase ϕ which dominates C and has the *wh*-phrase at its active edge. In this case, in order to comply with (43), the *wh*-phrase must move to C. As a result, *wh*-movement alters the prosodic structure as illustrated in (49).



In this prosodic tree, the *wh*-phrase and the complementizer are dominated by ϕ_5 , and the *wh*-phrase is adjacent to a prosodically active edge of ϕ_5 . Thus, this derivation satisfies the prosodic condition in (43).

Richards argues that Tagalog is an instance of languages using the strategy of *wh*-movement for the satisfaction of the prosodic condition in (43). In English, CPs are head-initial, and left edges of phonological phrases are phonologically active, similar to Tagalog. Consequently, in English, a *wh*-phrase has to overtly move to Spec,CP to satisfy the prosodic condition in (43).³⁵ According to Richards' logic, if the right edges of phonological phrases were phonologically active in English, and thus, English were the mirror image of Japanese, then *wh*-in-situ would be possible, contrary to fact.

³⁵ Richards' Contiguity does not say anything about how the lower *wh*-phrases remain in-situ in sentences where there is more than one *wh*-phrase, such as sentences in (i).

- (i) a. Who bought what?
- b. What did John gave to whom?

I have no definitive answer to the question of why these sentences are grammatical, even though the lower *wh*-phrases do not undergo overt movement, violating the condition in (43). I speculate that in English, the constraint in (43) is subject to the Principle of Minimal Compliance (PMC).

- (ii) Principle of Minimal Compliance (Richards 1997)
For any dependency D that obeys constraint C, any elements that are relevant for determining whether D obeys C can be ignored for the rest of the derivation for purposes of determining whether any other dependency D' obeys C.

On the basis of the PMC, once Contiguity is satisfied between C and the highest *wh*-phrase, the lower *wh*-phrase need not meet the condition in (43).

3.3.2. Analysis

Following Richards (2016), I assume that even though complementizers are phonologically null, they are relevant to the construction of prosodic structure. In my terms, every complementizer contains a PFM in the narrow syntax, regardless of whether phonological features (i.e. segmental content) are inserted into the PFM or not at PF, and that there are two types of complementizers – complementizers whose PFMs are filled with segmental material at PF, and complementizers whose PFMs remains empty at PF. The former are pronounced at PF, while the latter are not. Whether or not the PFM of a complementizer ends up with segmental content after Vocabulary Insertion is a matter adjudicated at PF, not in syntax. This essentially recapitulates Richards' approach to complementizers in Japanese using the terms of the present proposal. Given this, I propose that lexical items (including null operators and null complementizers) can participate in prosodic structuring as long as they contain PFMs. That is, whether lexical items can take part in prosodic structuring in the narrow syntax is not determined by the presence/absence of the segmental content inside their PFMs at PF, but by presence/absence of the PFM itself. This is the reason phonologically null complementizer can be present in prosodic trees. Recall that there are therefore two cases where lexical items can be unpronounced: one is the case where the lexical items do not contain PFMs as a result of ellipsis, while the other is the case where the lexical items happen to contain empty PFMs at PF.

Now, let us return to the question of why (36) is ungrammatical. To explain this, I propose to slightly modify Richards' prosodic requirement (43), as illustrated in (50).

(50) **Contiguity (modified version)**³⁶

Every pair $\langle C, wh\text{-phrase} \rangle$ that stand in an Agree relation must be associated with PFMs $\langle \text{PFM}[C], \text{PFM}[wh\text{-phrase}] \rangle$, such that there is at least one ϕ that contains both of these PFMs, and within which $\text{PFM}[wh\text{-phrase}]$ is Contiguity-prominent.

(51) **Contiguity-prominent (= (44))**

α is Contiguity-prominent within ϕ if α is adjacent to a prosodically active edge of ϕ .

When the *wh*-phrase is not present in any ϕ containing the complementizer, the original prosodic requirement in (43) is vacuously satisfied.³⁷

I suggest here that the prosodic requirement in (50) is calculated at each interrogative CP level, and that a derivation that does not obey the prosody requirement is ill-formed. Additionally, I assume throughout that elements that are deprived of their PFMs as a result of ellipsis become invisible as far as prosodic structure is concerned, and cannot participate in phonological phrasing in the narrow

³⁶ I am indebted to Omer Preminger for his help refining this constraint.

³⁷ This is similar to the argument used in Chomsky (1981) to derive the fact that PRO is ungoverned. Chomsky argues that PRO can satisfy both Condition A and Condition B, when it does not have a governing category. In order for an item not to have a governing category, it has to be ungoverned. Lasnik and Uriagereka (1988) present the following analogue: There are two ways to comply with a law that handguns must be registered. The first is to have guns and register them. The other is to have no guns, which is the option that is of interest here. It is for this reason that I suggest revising the constraint in the manner detailed in (50).

syntax. In non-elliptical interrogative sentences in English, the prosodic condition in (50) cannot be satisfied without overt movement of *wh*-elements to the left, essentially recapitulating Richards' proposal. In (36), however, prior to overt movement of the *wh*-element, its PFM has already been removed. Since the *wh*-phrase is invisible in prosodic phrasing, there cannot be a ϕ containing both the PFM of a *wh*-phrase and the PFM of a complementizer in the prosodic tree. Thus, this derivation fails to meet the prosodic requirement in (50).

A question that arises at this point is why the following sentence is grammatical, even though the PFM of the *wh*-phrase is removed, similar to the *wh*-phrase in (36).

(52) I know who Mary will be fond of, but John doesn't.

I suggest that the reason (52) is well-formed is that the prosodic requirement in (50) has already been satisfied inside the embedded clause before ellipsis, assuming that the prosody requirement is calculated at each interrogative CP level. In the present derivational approach to ellipsis, matrix VPE in (52) occurs after the interrogative CP is completed. In the embedded clause (i.e. before matrix VPE occurs), the *wh*-phrase moves to the embedded Spec,CP, and the prosodic condition in (50) is satisfied at the embedded CP level.

To summarize, as long as an element contains its PFM in narrow syntax, whether phonological content is inserted into the PFM or not at PF, the element is visible to the prosodic structure being assembled in narrow syntax. However, once the

PFMs of lexical items are removed, they are no longer visible to prosodic principles. In (36), the *wh*-phrase that has been deprived of its PFM is not an eligible object for the evaluation of the prosodic requirements, and thus, the sentence in (36) violates the prosodic requirement in (50). On this view, the ungrammaticality of sentences like (36) does not undermine the proposal advanced in this chapter, whereby elements that lack PFMs can be eligible for formal operations that occur after ellipsis.

This analysis can also account for extraction facts in Dutch Modal Complement Ellipsis. Similar to English, in Dutch, the highest *wh*-phrase in constituent questions must overtly move to the clause initial position. As discussed in section 2.5.2, the object *wh*-element cannot be pronounced outside of the ellipsis site, as shown in (53). This is because the object *wh*-phrase fails to be located outside the ellipsis site at the point of ellipsis, and thus, its PFM is eliminated.

- (53) *Ik weet niet aan wie Thomas die bloem WOU geven
 I know not to whom Thomas that flower want give
 maar ik weet wel aan wie hij MOEST
 but I know PRT to whom he must.PAST
 ‘I don’t know who Thomas wanted to give that flower to, but I do know
 who he had to.’

According to the present analysis, the FFM of the *wh*-element is preserved, even though its PFM is removed. This makes the *wh*-phrase, which now lacks PFM, able to

take part in further formal operations occurring after ellipsis. Therefore, it is predicted that (54) would be grammatical, contrary to fact.

- (54) *Ik weet niet wie Thomas moet uitnodigen, maar ik weet wel
I know not who Thomas must invite but I know AFF
hij niet mag.
he not be.allowed
'I don't know what Thomas must invite, but I do know who he isn't allowed
to.'

The ungrammaticality of (54) can also be explained by the prosodic condition in (50). The object *wh*-phrase in (54), which has been deprived of its PFM at the point of ellipsis, moves to the embedded CP, and thus, the [*uwh**]-feature on the embedded C can be satisfied. This means that there is no syntactic reason that causes the sentence in (54) to be ungrammatical. However, this derivation violates the prosodic requirement in (50) – there is no ϕ that contains the PFMs <PFM[C], PFM[*wh*-phrase]>, and within which PFM[*wh*-phrase] is Contiguity-prominent. That is, the sentence in (54) is ruled out for the same reason the English sentence in (36) is ill-formed.

3.4. Conclusion

In this chapter, I have argued that elements which have already been elided as a result of ellipsis can be eligible targets/goals for further formal operations, such as Agree and movement, contrary to Baltin's (2007, 2012) and Aelbrecht's (2010) analyses. I

have proposed that the underlying reason for this is that ellipsis is a syntactic operation that eliminates only the PFMs of lexical items inside the ellipsis site, but preserves their FFMs. At first glance, the sentences where elided *wh*-phrases seem to be inaccessible for operations after ellipsis might be considered counterexamples to the proposal advanced in this chapter. However, I have suggested that those sentences can be ruled out through an independent prosodic condition, which *wh*-questions must obey.

Chapter 4: Cross-linguistic evidence

4.1. Introduction

In chapter 2, I argued that the presence/absence of the [u C]-feature on T, which triggers T-to-C movement, correlates with the extractability of object *wh*-phrases out of the ellipsis site in CoPE. In this section, I will discuss light verb (LV)-stranding ellipsis in Korean and Farsi, in which the complement of the LV located in v is elided. In both languages, the LV functions as the licenser of LV-stranding ellipsis. Through investigating the (un)availability of extraction out of the ellipsis site in Korean and Farsi, I will argue that the proposal concerning the timing of ellipsis, repeated here as (1), is correct.

(1) **The timing of ellipsis**

XP ellipsis occurs as soon as all the featural requirements of the licenser of XP ellipsis are satisfied during the derivation in the narrow syntax.

Additionally, I argued in chapter 3 that what is elided as a result of ellipsis is the phonological feature matrices (PFMs) of lexical items inside the ellipsis site, rather than lexical items in their entirety. Due to this, ellipsis preserves the items' formal feature matrices (FFMs). One consequence of this proposal is that elements that are deprived of their PFMs can take part in further formal operations that follow ellipsis. In section 4.3, I argue that Korean LV-stranding ellipsis lends further support

to this proposal, by investigating Exceptional Case Marking (ECM) constructions and negative polarity item (NPI) licensing. It will be shown that British English (BrE) *do* constructions also support this proposal.

Lastly, I have suggested that *wh*-questions universally obey the prosodic constraint in (2), adopting and modifying Richards 2016.

(2) **Contiguity (modified version)**

Every pair $\langle C, wh\text{-phrase} \rangle$ that stand in an Agree relation must be associated with PFMs $\langle \text{PFM}[C], \text{PFM}[wh\text{-phrase}] \rangle$, such that there is at least one ϕ that contains both of these PFMs, and within which $\text{PFM}[wh\text{-phrase}]$ is Contiguity-prominent.

In section 4.4, I argue that Korean, a *wh*-in-situ language, must also obey the constraint in (2).

4.2. Timing of ellipsis and extraction

In this section, I first argue that the ellipsis site in Korean and Farsi LV-stranding ellipsis is the complement of the LV. An intriguing fact is that in spite of this similarity, Farsi allows extraction out of the ellipsis site, while Korean does not. I suggest that this contrast in extractability can be accounted for using the constraint on the timing of ellipsis proposed in this dissertation.

4.2.1. Korean LV-stranding ellipsis

The elliptical sentences in (3) and (4) exemplify LV-stranding ellipsis in Korean. In each example, the elided constituent contains a so-called verbal noun and its internal argument. In (4), the elliptical sentence allows both the strict reading and the sloppy reading. Throughout this chapter, the LV *ha* will be glossed with the meaning of its corresponding lexical verb (i.e. the small capital DO). However, it does not make a semantic contribution.

- (3) Kim cangkwn-un [tosi-lul pakoy]₁ ha-ess-ciman
 general Kim-TOP city-ACC destruction DO-PAST-but
 Li cangkwn-un *e*₁ an-ha-ess-ta.
 General Lee-TOP NEG-DO-PAST-D
 ‘General Kim destroyed the city, but General Lee did not destroy the city.’

- (4) A: John-un [[caki-ka ttoktokhata-ko] sayngkak]₁ an-ha-n-ta.
 John-TOP self-NOM clever-C thought NEG-DO-PRES-D
 ‘John does not think that he is clever.’
 B: Mary-nun *e*₁ ha-n-ta.
 Mary-TOP DO-PRES-D
 ‘Mary thinks that he/she is clever.’

In order to determine the ellipsis site in (3) and (4), we need to figure out the exact structure of LV constructions. As part of this, I first argue that so-called verbal nouns

are in fact verbs. Next, I examine the base-generation position of short form negation and the LV *ha* ‘DO’ (throughout this chapter, LVs will be glossed in small caps). Then, by demonstrating that the LV base-generated in *v* does not undergo head movement, I argue that what is elided in LV-stranding ellipsis is the VP selected by *v*. Given this, I then show that no element base-generated inside VP can be extracted out of the ellipsis site, and argue that this unavailability of extraction out of the ellipsis site supports the constraint on the timing of ellipsis in (1).

4.2.1.1. The ellipsis site

A subset of Korean nouns can be used as either regular nouns or as verbal nouns. In the latter case, they are followed by the LV *ha* ‘DO’, as illustrated in (5b).

- (5) a. *Cek-uy toi-uy phakoy*
 enemy-GEN city-GEN destruction
 ‘enemy’s destruction of the city’
- b. *Cek-i tosi-lul phakoy-ha-ess-ta.*
 enemy-NOM city-ACC destruction-DO-PAST-D
 ‘The enemy destroyed the city.’

In (5a), the lexical item *phakoy* is used as a regular noun. On the other hand, in (5b), *phakoy* is used as a verbal noun, and it is followed by the LV. Grimshaw and Mester (1988), Miyagawa (1989), and Saito and Hoshi (2000) suggest that Japanese verbal nouns are, categorically speaking, nouns. Although they differ in certain details, these analyses have one aspect in common: a verbal noun that assigns a theta-role is

incorporated into the light verb through head movement. As a result, the nominal domain of the verbal noun turns into a verbal domain, and the argument of the verbal noun can be realized inside the verbal domain with the accusative marker. However, these incorporation analyses cannot be applied to Korean LV constructions for the following reason: as Park (2008) points out, genuine nouns can be modified only by adjectival phrases, while verbal nouns are modified only by adverbial phrases. This is illustrated in (6).

- (6) a. Cek-uy tosi-uy chelcehan/*chelcehakey phakoy
 enemy-GEN city-GEN complete completely destruction
 ‘enemy’s complete destruction of the city’
- b. Cek-i tosi-lul chelcehakey/*chelcehan phakoy-ha-ess-ta.
 enemy-NOM city-ACC completely complete destruction-DO-PAST-D
 ‘The enemy completely destroyed the city.’

If verbal nouns were really nouns, they would be amenable to modification by adjectival phrases, contrary to fact. This is because an adjective can be generated inside the maximal projection of verbal noun that undergoes incorporation.

Park (2008) proposes that the syntactic behavior of the verbal noun in (6b) can be accounted for straightforwardly if it is assumed that it is a verb, rather than a noun. That is, since it is a verb, it is modified by an adverb phrase, but not by an adjectival phrase. However, one might claim that the reason the verbal noun in (6b) exhibits the properties of verbs is that it is a nominalization (and thus, a noun), and contains a

verbal projection in a position lower than the nominalization, similar to nominalization in the following English sentence (See Abney 1987; Moulton 2004; Pires 2001; 2007, among others).

(7) [John carefully/*careful mowing the lawn] is quite surprising.

However, I propose to rule out this possibility using the sentence (8b) containing *sayngkak* ‘thought’, which exhibits exactly the same behavior as the verbal noun *phakoy* ‘destruction’ in (6b). When the lexical item *sayngkak* ‘thought’ is used as a regular noun, it cannot be modified by an adverbial phrase, but when it is used as a verbal noun, it cannot be modified by an adjectival phrase. This is shown in (8).

- (8) a. Mary-uy kwutun/*kwutkey sayngkak
 Mary-GEN firm firmly thought
 ‘Mary’s firm thought’
- b. Na-nun [_{CP} Mary-ka chakhata-ko] kwutkey/ *kwutun sayngkak-hay.
 I-TOP Mary-NOM kind-C firmly firm thought-DO.D
 ‘I firmly think that Mary is kind.’

This contrasts with genuine verbs, which are never modified by adjectival phrases, but by adverbial phrases, as shown in (9).

- (9) Con-i ku sasil-ul kwutkey/*kwutun mit-nun-ta.
 John-NOM that fact-ACC firmly firm believe-PRES-D
 ‘John firmly believes in the fact.’

Suppose that verbal nouns in Korean were nominalizations, just like the nominalization in (7). Then, the CP preceding *sayngkak* in (8b) would have to be a complement, assuming that before nominalization, *sayngkak* was a transitive verb. If this is so, then it is predicted that the nominalization that consists of *sayngkak* and its complement CP would be able to occur in other environments where nominals and nominalizations occur: as the subject of a verb, as a topicalized element, and as a pivot in specificational pseudoclefts. However, these predictions are not borne out, as illustrated in (10). Thus, we can conclude that a verbal noun is not a nominalization.

- (10) a. *[[Mary-ka chakhata-ko] sayngkak]-i hwa-lul pwulu-ess-ta.
 Mary-NOM kind-C thought-NOM trouble-ACC cause-PAST-D
 (lit.)‘The thought that Mary is kind caused a problem.’
- b. *[[Mary-ka khuta-ko] sayngkak]₁, Thom-i (ku kes-ul)₁
 Mary-NOM tall-C thought Tom-NOM that thing-ACC
 ha-n-ta.
 do-PRES-D
 (lit.)‘The thought that Mary is tall, Tom does it.’

- c. *Thom-i e₂ ha-nun kes-un [[Mary-ka yeypputa-ko]
 Tom-NOM do-PRES C-TOP Mary-NOM pretty-C
 sayngkak]₂-i-ta.
 thought-COP
 (lit.)‘What Tom is the thought that Mary is pretty.’

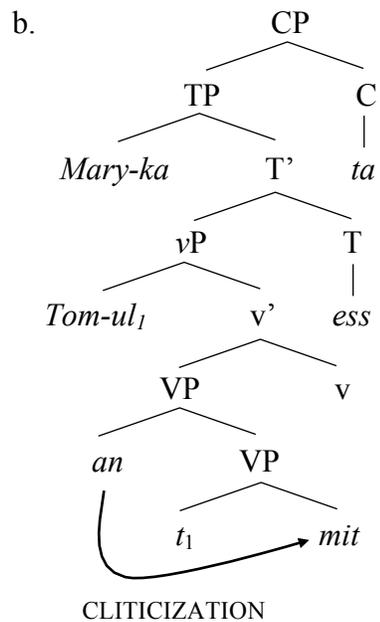
Given this, I will assume that verbal nouns used in LV constructions are verbs generated in V, similar to regular verbs, in line with Park (2008). In order to distinguish verbs that have traditionally been referred to as verbal nouns from regular verbs, I will call the former *nominal verbs*.³⁸ Thus, we can say that *sayngkak* in (8b) is a nominal verb, and that the embedded CP is its complement. Accordingly, throughout this chapter, the nominal verb *sayngkak* will be glossed as *think* instead of *thought*.

Now, let us discuss where short form negation and the LV are base-generated. As shown in (3) and (4), they are located outside the ellipsis site. Thus, investigating the position of them can illuminate the size of ellipsis site in LV-stranding ellipsis.

Han et al. (2007) suggest that short form negation *an* is base-generated adjoined to the left of VP, and it cliticizes to the left of V, after object shift of the direct object over short form negation. As a result, short form negation is always followed by V, as illustrated in (11).

³⁸ Even though both nominal verbs and regular verbs are categorically verbs, they exhibit syntactic differences. First, Unlike nominal verbs, regular verbs neither are followed by the LV *ha* ‘DO’ nor have homophonous nouns.

- (11) a. Mary-ka Tom-ul an -mit-ess-ta.
 Mary-NOM Tom-ACC NEG-believe-PAST-D
 ‘Mary does not trust Tom.’



Under the assumption discussed above that verbal nouns are, categorically speaking, verbs generated in V, Han et al.’s suggestion predicts that short form negation would always precede nominal verbs in LV constructions. This prediction is not borne out, as shown in (12). Short form negation *an* is preceded by nominal verbs.

- (12) a. Mary-nun [_{CP} tolkolay-ka ttokttokhata-ko] sayngkak-an-ha-ess-ta.
 Mary-TOP dolphin-NOM clever-C think-NEG-DO-PAST-D
- b. ?*Mary-nun [_{CP} tolkolay-ka ttokttokhata-ko] an-sayngkak-ha-ess-ta.
 Mary-TOP dolphin-NOM clever-C NEG-think-DO-PAST-D
 ‘Mary did not think that dolphins are clever.’

Consequently, we can conclude that in order to generate the sentence in (12a), short form negation *an* cannot be base-generated to the left of VP.³⁹ Rather, I suggest that it must be generated to the right of VP as an adverb, and it cliticizes to a following verb, which would be either the LV or a regular verb that has been moved to *v* through head movement. The fact that short form negation is adjoined to the right of VP implies that the nominal verb *sayngkak* ‘think’ in (12) does not undergo head movement to *v*, while the regular verb *mit* ‘believe’ in (13) does. This asymmetry between nominal verbs and regular verbs with respect to head movement to *v* is systematic – the former always precede short form negation *an*, as shown in (13) and (14), while the latter always follow *an*, as illustrated in (15) and (16), respectively.

³⁹ One might argue that Han et al.’s suggestion could be salvaged, if we hypothesize that the VP consisting of the nominal verb and the trace of complement CP, which has been moved to Spec,*v*P, moves leftward, stranding short form negation adjoined to the left of VP. In order to get the right word order in (12a), it must be assumed that leftward VP movement is obligatory. However, there is a non-trivial problem with this assumption. Given that all types of movement are feature-driven (Chomsky 1995, van Urk and Richards 2015, among others), it is not clear what feature triggers such obligatory VP movement.

- (13) a. Cek-i tosi-lul phakoy an-ha-ess-ta.
 enemy-NOM city-ACC destroy NEG-DO-PAST-D
 ‘The enemy did not destroy the city.’
- b. *Cek-i tosi-lul an-phakoy ha-ess-ta.
 enemy-NOM city-ACC NEG-destroy DO-PAST-D
- (14) a. Mary-ka Yenge-lul kongpwu an-ha-ess-ta.
 Mary-NOM English-ACC study NEG-DO-PAST-D
 ‘Mary did not study English.’
- b. * Mary-ka Yenge-lul an-kongpwu ha-ess-ta.
 Mary-NOM English-ACC NEG-study DO-PAST-D
- (15) a. Tom-i ppang-ul an-mek-ess-ta.
 Tom-NOM bread-ACC NEG-eat-PAST-D
 ‘Tom did not eat bread.’
- b. * Tom-i ppang-ul mek-an-ess-ta.
 Tom-NOM bread-ACC eat-NEG-PAST-D
- (16) a. Bill-i phathi-ey an-o-ess-ta.
 Bill-NOM party-to NEG-come-PAST-D
 ‘Bill did not come to the party.’
- b. *Bill-i phathi-ey o-an-ess-ta.
 Bill-NOM party-to come-NEG-PAST-D

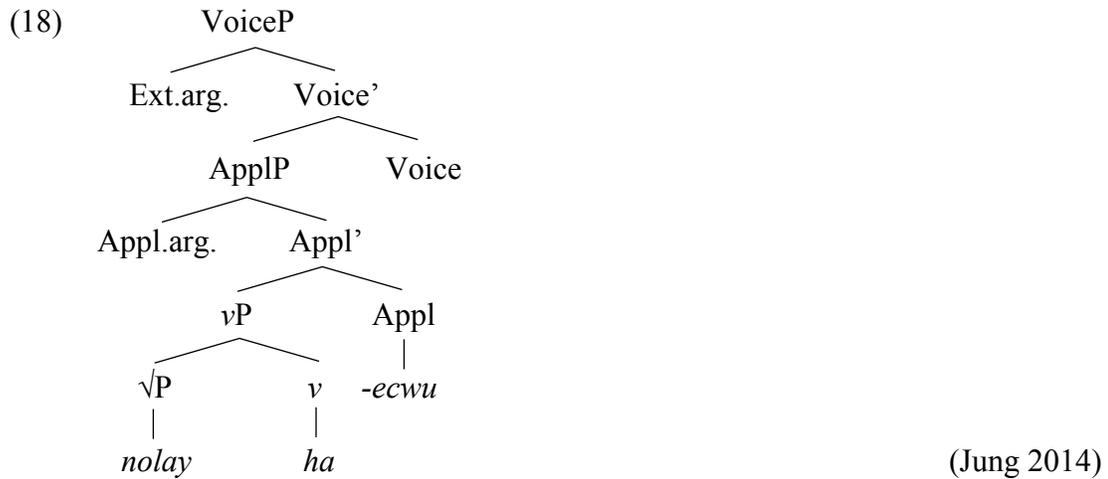
Concerning why regular verbs move to ν but nominal verb cannot, I assume that regular verbs contain an uninterpretable inflectional feature that motivates head movement to ν , while nominal verbs do not.

Now, let us discuss the position of the LV *ha* ‘DO’. The LV *ha* ‘DO’ is always preceded by short form negation. On the assumption that short form negation is adjoined to VP, this indicates that the LV must be located higher than VP. Given that extended domains of lexical verbs that have semantic content contain Voice (see section 2.4), we can assume that the LV is located either on ν or Voice. While the facts so far pertain only to the surface position of the LV, the location of the Appl head *-ecwu* ‘give’ in (17b) provides evidence regarding its base position.

- (17) a. * *Salamtul-i* *Mary-ekyey* *nolay-ha-ess-ta*.
 people-NOM Mary-DAT sing-give-PAST-D
 (lit.) ‘People sang Mary a song.’
- b. *Salamtul-i* *(*Mary-ekyey*) *nolay-ha-ecwu-ess-ta*.
 people-NOM Mary-DAT sing-DO-give-PAST-D
 ‘People sang a song for Mary.’

The dative Beneficiary *Mary-eykey* ‘Mary-DAT’ in (17) is metonymically understood as a Possessor (Shibatani 1994, 1996). This argument cannot be present when the morpheme *-ecwu* ‘give’ is absent in the structure. That is, it is not an argument of the nominal verb *nolay* ‘sing’ directly. However, when the morpheme *-ecwu* ‘give’ is

present, the dative Beneficiary must be present. That is, the morpheme *-ecwu* ‘give’ in (17b) introduces a dative argument. Given this, Jung (2014) proposes that the morpheme *-ecwu* ‘give’ projects a high applicative projection between *vP* and VoiceP, as illustrated in (18).⁴⁰



Assuming that the nominal verb *nolay* ‘sing’ is followed by the LV and adopting Jung’s proposal that *-ecwu* projects a high ApplP located between *vP* and VoiceP, the projection headed by the LV *ha* ‘DO’ must be *vP* (cf. Baker’s (1985) Mirror Principle).⁴¹ Subsequently, the partial structure of (19a) containing the nominal verb, short form negation, and the LV, can be schematized as in (19b).⁴²

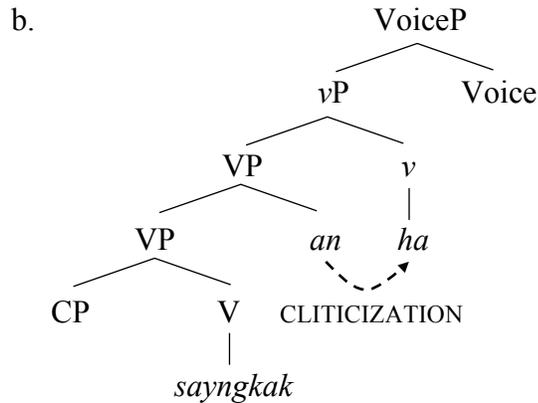
⁴⁰ Note that the high applicative head where the morpheme *-ecwu* is base-generated is located very high. For many researchers, the distinction between “high” and “low” when it comes to applicatives refers to “above VP” or “below VP”, following Pyllkänen (2002, 2008). The reason high Appl is located higher than *vP* in (18) is that the LV *ha* is a verbalizer in Jung’s analysis.

⁴¹ One might argue that, similar to lexical restructuring in German (Wurmbrand 2001), the LV is base-generated in V and it takes VP headed by a nominal verb as a complement. However, in light of the consideration that the LV *ha* ‘DO’ is

(19) a. John-un [_{VP} [_{CP} Mary-ka khuta-ko]] sayngkak] an-ha-n-ta.

John-TOP Mary-NOM tall-C think NEG-DO-PRES-D

‘John does not think that Mary is tall.’



In order to diagnose the exact size of the ellipsis site in LV-stranding ellipsis in (20B), it is also necessary to identify where the LV is located at the point of ellipsis. If the LV stays in situ, the ellipsis site would be the VP selected by the light verb. However, if it undergoes head movement, the ellipsis site could be larger than VP.

semantically vacuous, unlike open-class verbs which are base-generated in V, it is more natural to assume that the LV is generated in *v* rather than V.

⁴² Since the sentence (19a) means that John thinks Mary is not tall, Korean also seems to have “Not-Hopping”, similar to English. However, here are two arguments against the view that “Not Hopping” is a syntactic operation: First, suppose that short form negation in (19a) is a Neg head generated inside the embedded clause and moves to the matrix clause through head movement. Then, it is not clear how the sentence is grammatical even though it violates the Head Movement Constraint (Travis 1984). Second, if short form negation were an adverb that base-generated inside the embedded CP, it would not be easy to account for why short form negation, which cliticizes to a following predicate, cliticizes to the LV, but not to the embedded predicate *khuta* ‘tall’ or the nominal verb *sayngkak* ‘think’ in the matrix clause.

- (20) A: John-un caki-ka khuta-ko syangkak ha-n-ta.
 John-TOP self-NOM tall-C think DO-PRES-D
 ‘John thinks that he is tall.’
- B: Tom-un ~~eaki-ka khuta-ko syangkak~~ an-ha-n-ta.
 Tom-TOP self-NOM tall-C think DO-NEG-PRES-D
 ‘Tom does not.’

It is not easy to argue for or against the existence of head movement in head final languages. However, the coordination structure in (21) indicates that the LV does not undergo head movement.

- (21) Salamtul-i Mary-eykey nolay-ha-ko chwumchu-ecwu-ess-ta.
 people-NOM Mary-DAT sing-DO-and dance-give-PAST-D
 ‘People sang songs and danced for Mary.’

Recall that *nolay* ‘sing’ cannot introduce a Beneficiary by itself, without *-ecwu* ‘give’ (see (17)). Nonetheless, in (21), the dative argument is understood as a Beneficiary of both the singing and the dancing. The grammaticality of (21) indicates that *-ecwu* ‘give’ selects *nolay-ha* ‘sing-DO’ as well as to *chwumchu* ‘dance’ as its complements. One way of generating the sentence in (21) is that two vPs are conjoined, and the high Applicative head where *-ecwu* is base-generated takes the conjunction node as a complement, as illustrated in (22).

(22) [TP people-NOM₁ [VoiceP t₁ [AppIP [vP [vP sing-DO]-and [vP dance]]-Appl]] ...

On this view, in order to generate the sentence in (21), the LV must not move to Appl. If the LV contained an uninterpretable feature that could only be deleted through movement to a higher head, it is predicted that the sentence would crash, contrary to fact, since the uninterpretable feature is not deleted.

Another possible way to generate (21) is to assume that two phrases higher than vP, such as AppIP or VoiceP, are conjoined. Suppose that two AppIPs are conjoined, and that the conjunction node is selected by Voice. Under this view, there could be two relevant analyses for generating the sentence with the right string of words in (21) – the across-the-board (ATB) movement analysis (Funakoshi 2014 among others) and the PF reduction analysis (Fukui and Sakai 2003 among others). The former would explain the sentence in (21) as follows: two AppIPs are conjoined and the Appl head *-ecwu* in each conjunct is moved to a higher head in an ATB fashion. On the other hand, the PF reduction analysis assumes that two AppIPs are conjoined and the morpheme *-ecwu* in the first conjunct is deleted under identity. Whichever analysis we take, (21) can be an argument against the view that the LV undergoes head movement. The reasons are as follows: First, under the ATB movement analysis, the Appl head *-ecwu* in each conjunct moves to a higher head. If LV underwent head movement to Appl, *-ecwu* must be able to escape from each conjunct on its own, stranding the adjoined LV, through excorporation. This analysis has a non-trivial problem: it is not easy to account for why and how such a type of excorporation is possible. On the other hand, the PF reduction analysis has to assume

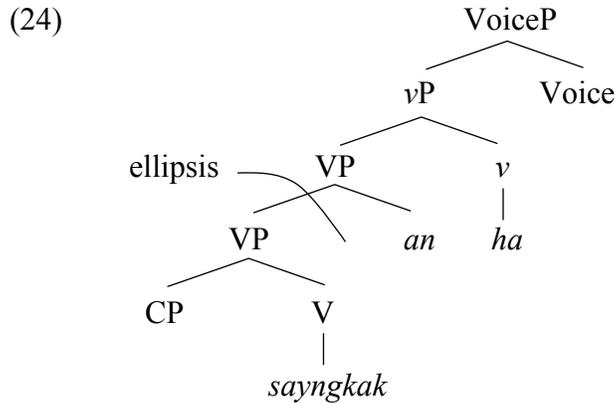
that the Appl head *-ecwu* is deleted after the LV is adjoined to the Appl head forming a complex head. However, there is an empirical argument against the PF reduction analysis:

- (23) a. John-i Mary-eykey nolay-ha-~~ecwu~~-ko yoli-ha-ecwu-ess-ta.
 John-NOM Mary-DAT sing-DO-giveand cook-DO-give-PAST-D
 ‘People sang songs and danced for Mary.’
- b. *John-i Mary-eykey nolay-~~ha-ecwu~~-ko yoli-ha-ecwu-ess-ta.
 John-NOM Mary-DAT sing-DO-give-and cook-DO-give-PAST-D
 ‘People sang songs and danced for Mary.’

To account for (23a) on the PF reduction analysis, the Appl head *-ecwu* in the first conjunct is deleted, under identity to the Appl head in the second conjunct. However, as shown in (23b), the LV *ha* and the Appl head *-ecwu* cannot be elided at the same time. If elements in the first conjunct which are identical to elements in the second conjunct could be freely deleted, the PF reduction approach would predict that (23b) would also be grammatical, contrary to fact. The same problems occur when we assume that two phrases bigger than ApplP are conjoined in (21).

Thus, it is most reasonable to conclude that two *v*Ps are conjoined in (21), and that the LV does not undergo movement to a higher head. This line of discussion also implies that regular verbs, which undergo head movement to *v*, do not move up to Appl. If the regular verb in (21) moved to Appl, this would violate the Coordinate Structure Constraint, and thus, the sentence in (21) would be ungrammatical.

To sum up, the LV *ha* ‘DO’ is base-generated in *v* and does not undergo head movement to a higher head. Given this, we can conclude that the ellipsis site in LV-stranding ellipsis in (20) is the VP selected by the LV generated in *v*, as illustrated in (24).



4.2.1.2. Analysis of Korean LV stranding ellipsis and extraction

A noteworthy property of LV-stranding ellipsis in Korean is that elements base-generated inside the ellipsis site cannot be pronounced outside the ellipsis site, as shown in (25) and (26).

- (25) A: Bill-_{ul1} Mary-nun [_{VP} [_{CP} Kim-i *t*₁ cohahanta-ko] sayngkak]
 Bill-ACC Mary-TOP Kim-NOM like-C think
 an-ha-n-ta.
 NEG-DO-PRES-D
 ‘Mary does not think that Kim likes Bill.’

B: * Tom-ul John-un [_{VP} [_{CP} Kim-i ~~t_i~~ eohahanta ko] ~~sayngkak~~]
 Tom-ACC John-TOP Kim-NOM like-C think
 an-ha-n-ta.
 NEG-DO-PRES-D
 ‘John does not think that Kim likes Tom.’

(26) * Sewul-ul₂ cek-i [_{VP} t₂ phakoy] an-ha-ess-ta. Haciman
 Seoul-ACC enemy-NOM destruction NEG-DO-PAST-D but
 Pusan-ul₃ kutul-un [_{VP} ~~t₃~~ ~~phakoy~~] ha-ess-ta.
 Busan-ACC they-TOP destruction DO-PAST-D
 ‘The enemy did not destroy Seoul. But they destroyed Busan.’

In what follows, I argue that the unavailability of extraction out of the ellipsis site in (25B) and (26) can be accounted for with the constraint on the timing of ellipsis, proposed in chapter 2 and repeated in (27).

(27) **The timing of ellipsis**

XP ellipsis occurs as soon as all the featural requirements of the licenser of XP ellipsis are satisfied.

First, we need to identify the licenser of LV-stranding ellipsis. As we have discussed in (13) and (14), regular verbs obligatorily undergo movement to *v*. I first argue that, in this case, unlike in LV-stranding ellipsis, the complement VP of *v*

occupied by a displaced regular verb cannot be elided. Consider the following sentences, which contain the adverb *cal* ‘well’, short form negation, and regular verbs.

- (28) a. Toli-ka maykcwu-lul cal an masi-n-ta.
 Toli-TOP beer-ACC well NEG drink-PRES-D
 ‘Toli does not drink beer well.’
- b. * Toli-ka maykcwu-lul an cal masi-n-ta.
 Toli-TOP beer-ACC NEG well drink-PRES-D
 ‘Toli does not drink beer well.’ (Han et al. 2007)

In (28a), short form negation *an* is preceded by the adverb *cal* ‘well’. On the other hand, in (28b), *an* is followed by *cal*. Han et al. (2007) explain the contrast between (28a) and (28b) as follows: short form negation must be adjacent to a following verb in order for the former to cliticize to the latter. In (28a), there is no element intervening between short form negation and the verb. On the other hand, in (28b), the adverb *cal* ‘well’ is located between them. Thus, short form negation fails to cliticize to the verb. If this analysis is right, we can conclude that the adverb *cal* ‘well’ is located in VP lower than short form negation, which is adjoined to VP.⁴³

⁴³ One might claim that (28b) is unacceptable due to the position of the adverb *cal* ‘well’. Suppose that the adverb were adjoined to the left of either VP or *v*P. Then, the adverb could not be located between short form negation and the regular verb in *v*. On this view, it is not because short form negation fails to cliticize to the verb that (28b) is unacceptable. However, I reject this possibility, since the adverb cannot be followed by the direct object located in the complement position of V, as illustrated in (i).

Given this, consider the following sentences.

(29) A: Toli-ka maykcwu-lul cal an masi-n-ta. (= (28a))

Toli-TOP beer-ACC well NEG drink-PRES-D

‘Toli does not drink beer well.’

B: Tom-to an masi-n-ta.

Tom-also NEG drink-PRES-D

*‘Tom also does not drink beer well.’

Suppose that VP containing the direct object and the adverb *cal* ‘well’ could be elided when regular verb moves to *v*. Then, it would be predicted that (29B) would be acceptable with the meaning that Tom also does not drink beer well. However, this prediction is not borne out. Consequently, the unavailability of the intended meaning indicates that VP cannot be deleted when *v* is occupied by a regular verb.⁴⁴

One might claim that the intended meaning in (28B) is unavailable not because VP ellipsis is not licensed, but because V-to-*v* movement occurs even though

(i) *Toli-ka cal maykcwu-lul masi-n-ta.
Toli-TOP well beer-ACC drink-PRES-D
‘Toli drinks beer well.’ (Han et al. 2007)

⁴⁴ The sentence (29B) is acceptable when it is interpreted as Tom also does not drink beer, even though it is pragmatically infelicitous. I assume that the sentence with that interpretation is an instance of Null Argument, where unpronounced arguments are not present in narrow syntax (Oku 1998; Saito 2007, among others), as illustrated in (i).

(i) Tom-to *e* [= maykcwu-lul] an masi-n-ta.
Tom-also beer-ACC NEG drink-PRES-D
‘Tom also does not drink beer.’

ellipsis bleeds head movement, similar to English pseudogapping (cf. Lasnik 1999). If this analysis were right, it would be predicted that the elision of VP whose head is elided inside VP would be possible. However the following sentence where the elided VP contains the regular verb is not acceptable, either.

(30) A: John-un [VP sakwa-lul t₁] mek₁-ess-ta.

John-TOP apple-ACC eat-PAST-D

‘John did not eat apples.’

B: * Tom-to [~~VP sakwa-lul mek~~]-ess-ta

Tom-also apple-ACC eat-PAST-D

‘Tom also did not eat apples.’

The ungrammaticality of (30B) cannot follow from the stipulation that the tense morpheme fails to be adjacent to an overtly pronounced verb. The reason is as follows: In (31), the tense morpheme is not adjacent the regular verb *ilk* ‘read’, due to long form negation. Then, as a Last Resort, *ha*-support, which is similar to *do*-support in English, occurs (See Han et al. 2007).

(31) John-un chyak-ul ilk-ci ani*(-ha)-ess-ta.

John-TOP book-ACC read-CI NEG-do-PAST-D

‘John did not read a book.’

Note that *ha* ‘do’, which is inserted in this case as a Last Resort, is distinct from the LV *ha* ‘DO’, given that both can be present in a clause, as illustrated in (32).

- (32) Na-nun [CP John-i khuta-ko] sayngkak-ha-ci ani-ha-ess-ta.
 I-TOP John-NOM tall-C think-DO-CI NEG-do-PAST-D
 ‘I did not think that John was tall.’

If (30B) were indeed ungrammatical due to the morphological constraint mentioned above, it is predicted that (30B) would become grammatical when *ha*-support is added. However, the prediction is not borne out, as shown in (33).

- (33) A: John-un [VP [VP [CP Jina-ka ttokttokhata-ko] t₂]]₁ mit₂] -ess-ta.
 John-TOP Jina-NOM clever-C believe-PAST-D
 ‘John believed that Jina was clever.’
 B: * Mary-to [e]₁ ha-ess-ta.
 Mary-also do-PAST-D
 ‘Mary also believed that Jina was clever.’

Given the results of this discussion, the contrast in grammaticality between (20B) and (28B) demonstrates that VP ellipsis cannot occur without a LV. Thus, it can be concluded that the licenser of the elision of VP is a LV.

Assuming that the LV is the licenser of LV-stranding ellipsis, the constraint on the timing of ellipsis requires that LV-stranding ellipsis occur as soon as all the

featural requirements of the LV *ha* ‘DO’ are satisfied. There are three putative featural requirements the LV might have. The first one is the deletion of an uninterpretable feature that triggers head movement. However, as mentioned above (see (21), (23), and the surrounding discussion), the LV *ha* ‘DO’ does not undergo head movement, which indicates that it does not contain an uninterpretable inflectional feature.

The second potential requirement the LV might have is an uninterpretable feature that Agrees with a corresponding feature of a syntactic object contained in VP. At this stage, it is not clear if the LV bears such a feature, since it is widely accepted that Korean lacks agreement. Even if the LV contained such a feature, it should be deleted as soon as it merges with VP within the Probe-Goal system (Chomsky 2000 et seq.).

The last putative requirement of the LV is the classic EPP, which is distinct from an EPP-feature (i.e. an edge feature), which only a phase head can have.⁴⁵ However, in what follows, I will demonstrate here that *v* does not contain the classic EPP by using the postpositional dative construction, exemplified in (34).

- (34) Mary-ka Posten-ulo atul-ul ponay-ess-ta.
 Mary-NOM Boston-to son-ACC send-PAST-D
 ‘Mary sent her son to Boston.’

⁴⁵ I assume here that the classic EPP is a feature that attracts a DP (i.e., [*u*D*]-feature) (Chomsky 1995). This feature is contained in non-phase heads such as T. On the other hand, an EPP-feature (i.e., an edge feature) is located only on a phase head. One might claim that the LV base-generated in *v* can have an EPP-feature. However, I reject this possibility because *v*P containing a verb which has semantic content is not a phase (see section 2.4), and thus, *v* cannot bear an EPP-feature.

The postposition occurring with the Goal *Posten* ‘Boston’ alternates with the dative marker *-ey*, as shown in (35a), and the verb *ponay* ‘send’ does not participate in the double object alternation, as illustrated in (35b).

- (35) a. Mary-ka Posten-ey phyenci-lul ponay-ess-ta.
 Mary-NOM Boston-DAT letter-ACC send-PAST-D
 ‘Mary sent a letter to Boston.’
- b. *Mary-ka Poston-ul phyenci-lul ponay-ess-ta.
 Mary-NOM Boston-ACC letter-ACC send-PAST-D
 ‘Mary sent Boston a letter.’

The postposition *-ulo* used in postpositional dative constructions is homophonous with the instrumental postposition, which projects an adjunct postpositional phrase, as illustrated in (36).

- (36) Mary-nun i ceckalak-ulo kwukswu-ul mek-ess-ta.
 Mary-NOM these.chopstick-INST noodle-ACC eat-PAST-D
 ‘Mary ate noodle with these chopsticks.’

However, the Goal PP in (34) is an argument of the verb *ponay* ‘send’, not an adjunct. This can be verified by using cleft constructions. Even though both arguments and adjuncts allow short distance clefting, only arguments permit long-distance clefting. This is shown in (37) and (38), respectively (See Kang 2006).

- (37) a. [CP Tom-i e_1 ton-lul kipwuha-n-kes]-un
 Tom-NOM money-ACC donate-PAST-C-TOP
 [PP i tanchey-ey]₁-i-ta.
 this organization-DAT-COP-D
 ‘It is to this organization that Tom donated money.’
- b. [CP Mary-ka e_1 ttena-n-kes]-un [PP i iywu-lo]-i-ta.
 Mary-NOM leave-PAST-C-TOP this reason-with-COP-D
 ‘It is with this reason that Mary left.’
- (38) a. [CP Salamtul-i [CP Tom-i e_1 ton-lul kipwuha-ess-ta-ko]
 people-NOM Tom-NOM money-ACC donate-PAST-D-C
 sayngkak-ha-nun-kes]-un [PP i tanchey-ey]₁-i-ta.
 think-DO-PAST-C-TOP this organization-DAT-COP-D.
 ‘It is to this organization₁ that people think that Tom donated money t_1 .’
- b. [CP Salamtul-i [CP Mary-ka e_2 ttena-ess-ta-ko]
 people-NOM Mary-NOM leave-PAST-D-C
 sayngkak-ha-nun-kes]-un [PP i iywu-lo]₂-i-ta.
 think-DO-PAST-C-TOP this reason-with-COP-D.
 ‘It is for this reason₂ that people think [that Mary left] e_2 .’
 *‘It is for this reason₂ that people think [that Mary left e_2].’

In (38b), the clefted PP can be semantically linked to the matrix predicate inside the presupposition CP headed by *kes*, but not to the embedded predicate.

Given this contrast, let us consider the sentence in (39).

- (39) [CP Salamtul-i [CP wang-i e_1 amhayngesa-lul
 people-NOM king-NOM secret.royal.inspector-ACC
 ponay-ess-ta-ko] sayngkak-ha-nun-kes]-un [PP i ciyek-ulo]_I-i-ta.
 send-PAST-D-C think-do-PRES-C-TOP this region-to-COP-D
 ‘It is to this region that the King sent a secret royal inspector.’

The empty category coindexed with the postpositional phrase pivot is located in the embedded clause inside the presupposition CP headed by *kes*, which shows that (39) is an example of long distance cleftings. The fact that (39) is grammatical tells us that the Goal PP in postpositional dative constructions is an argument of the verb.

Another property of Korean dative constructions is that the quantified Goal PP always scopes over the quantified Theme DP when the former is followed by the latter. On the other hand, when the word order of the two elements is reversed, scope ambiguity is attested.

- (40) a. Chelswu-ka etieyinka-lo motun phyenci-lul ponay-ess-ta.
 Chelswu-NOM somewhere-to every letter-ACC send-PAST-D
 ‘Chelswu sent every letter to somewhere.’ (✓some > every, *every > some)

- b. Chelswu-ka motun phyenci-lul etieyinka-lo ponay-ess-ta.
 Chelswu-NOM every letter-ACC somewhere-to send-PAST-D
 ‘Chelswu sent every letter to somewhere.’ (✓some > every, ✓every > some)

This is similar to the scope interaction between the quantified subject and quantified object in (41).

- (41) a. Nwukunka-ka motun salam-ul piphanha-ess-ta.
 someone-NOM every person-ACC criticize-PAST-D
 ‘Someone criticized every person.’ (✓some > every, *every > some)
- b. [Motun salam-ul]₁ nwukunka-ka t₁ piphanha-ess-ta.
 every person-ACC someone-NOM criticize-PAST-D
 ‘Someone criticized every person.’ (✓some > every, ✓every > some)

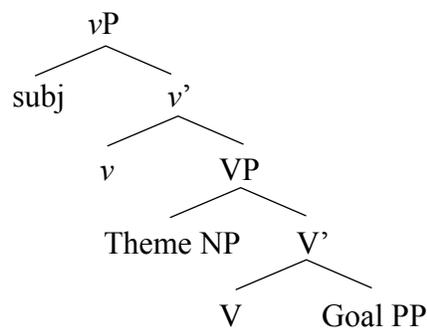
In scope rigid languages such as Japanese and Korean, when the subject existential quantifier (i.e., the subject in (41)) c-commands the object universal quantifier (i.e., the object in (41)) in a sentence with the canonical word order, the former always scopes over the latter, unlike English, which has quantifier raising. However, when the object universal quantifier undergoes scrambling over the subject existential quantifier, then scope ambiguity is attested (Kuroda 1970; Kuno 1973; Hoji 1985; Ahn 1990; Hagstrom 2000, among others).

Assuming that the scope mechanisms involved in subject-object interactions are identical to those involved in Goal PP-Theme DP scope interactions, the scope

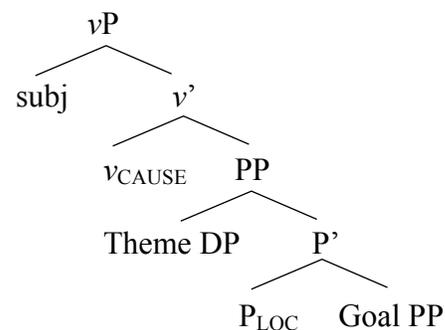
facts above indicate that in (40a), the Goal PP is base-generated in a position higher than the Theme DP. On the other hand, in (40b), scope ambiguity is attested as a result of scrambling – the scrambled Theme DP can be interpreted either in its surface position or in its base position located below the Goal PP.

A question that needs to be asked in order to diagnose if *v* can have the classic EPP (i.e., the D-feature) is where the Goal PP in Korean is generated. Bruening (2010) proposes that dative constructions lack ApplP, but have both the Theme NP and the Goal PP as arguments of V and that they are generated within VP. Harley (2002) suggests that the Theme DP and the Goal PP are base-generated in a small clause headed by P_{LOC}, which encodes location. These two approaches have one aspect in common: both the Goal and the Theme in dative constructions are introduced by one head below *v*, as shown in (42).

(42) a. Bruening's (2010) structure

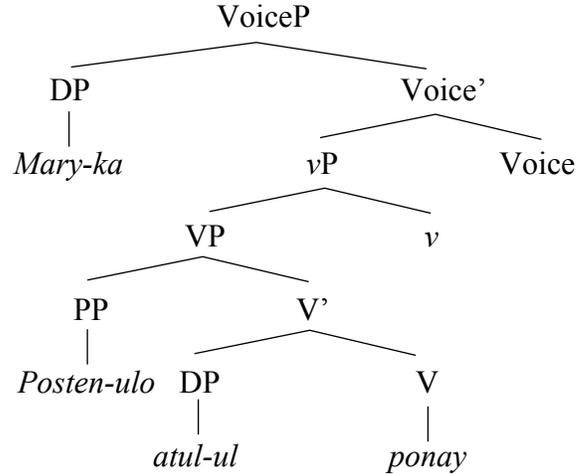


b. Harley's (2002) structure



I assume here that the Goal PP is introduced by V, adopting Bruening's structure of postpositional dative constructions, and that the structure of (34) is (43).

(43)



Now, let us reconsider the scope interaction between the Goal PP and the Theme DP, illustrated in (40a). When the quantified Goal PP is followed by the quantified Theme DP, the former always scopes over the latter. Suppose that classic EPP is an uninterpretable category D feature (Chomsky 1995), and that v bears the classic EPP. In order for the derivation of (40a) to be convergent, the Theme DP must move to Spec, v P over the Goal PP first to satisfy the classic EPP. Subsequently, the Goal PP must move to a position higher than Spec, v P, as illustrated in (44).

(44) Subject Goal PP₁ [_vP Theme DP₂ [_vP t_1 t_2 V]]

If the sentence (40a) were generated through the derivation in (44), it is erroneously predicted that both surface scope and inverse scope would be possible, similar to (41b). The only way of generating the sentence in (40a) with surface scope is if the Theme DP does not undergo movement to Spec, v P. However, if the Theme DP remained in its base position, this derivation would crash, since the classic EPP on v

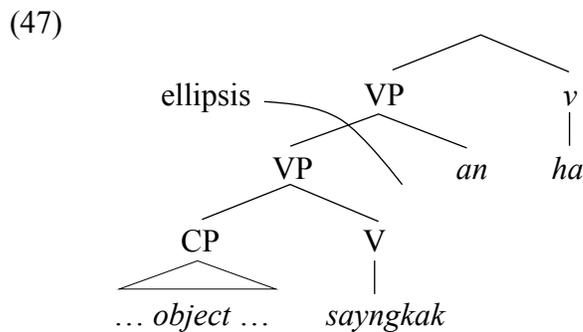
would not be satisfied in the narrow syntax. This demonstrates that there is no way to generate (40a), which allows surface scope only, if we posit the classic EPP on v . Thus, it is most natural to assume that v does not have the classic EPP. (See section 4.3.1.1 for another independent argument.)

On the basis of the discussion so far, we can say that v does not have any featural requirement that requires the presence of an even higher head in order to be satisfied. Therefore, according to the present proposal concerning the timing of ellipsis in (27), LV-stranding ellipsis must occur just after v is introduced into the derivation (i.e. before Voice merges with vP). At the point of ellipsis, any element base-generated inside VP could not have escaped from the ellipsis site, since v cannot provide an intermediate landing site for moving elements. (Recall that v does not have the classic EPP, and that v is not a phase head, and thus, it does not contain an EPP-feature, either). Given this, the derivation of (25B) and (26), repeated here as (45B) and (46), can be represented as in (47).

- (45) A: Bill-ul₁ Mary-nun [_{VP} [_{CP} Kim-i t_1 cohahanta-ko] sayngkak]
 Bill-ACC Mary-TOP Kim-NOM like-C think
 an-ha-n-ta.
 NEG-DO-PRES-D
 ‘Mary does not think that Kim likes Bill.’

B: * Tom-ul John-un [~~VP~~ [~~CP~~ Kim-i ~~t_i~~ eohahanta-ko] sayngkak]
 Tom-ACC John-TOP Kim-NOM like-C think
 an-ha-n-ta.
 NEG-DO-PRES-D
 ‘John does not think that Kim likes Tom.’

(46) * Sewul-ul₂ cek-i [_{VP} t₂ phakoy] an-ha-ess-ta. Haciman
 Seoul-ACC enemy-NOM destruction NEG-DO-PAST-D but
 Pusan-ul₃ kutul-un [~~VP~~ ~~t₃~~ phakoy] ha-ess-ta.
 Busan-ACC they-TOP destruction DO-PAST-D
 ‘The enemy did not destroy Seoul. But they destroyed Busan.’



Consequently, the reason (45B) and (46) are ungrammatical is that the direct objects, which have already been elided inside VP, are nevertheless pronounced outside the ellipsis sites.

To summarize, Korean LV-stranding ellipsis is the elision of VP, which is headed by nominal verbs, and the licenser of this type of ellipsis is the LV selecting

the ellipsis site. I have argued that LV-stranding ellipsis occurs as soon as the LV is introduced into the derivation. This is because the LV does not contain any feature that can delay the timing of ellipsis. At the point of ellipsis, no element generated inside the ellipsis site can be located outside the ellipsis site, since *v* contains neither the classic EPP nor an EPP-feature. Thus, extraction out of the ellipsis site is unavailable.

Now, suppose that there were a language that had the following properties: First, the complement phrase of the LV can be elided, and this ellipsis is licensed by the LV located in *v*. Second, the LV has an uninterpretable feature that triggers head movement to a head located outside the verbal domain containing VoiceP. Lastly, *v* contains neither the classic EPP nor an EPP-feature. That is, this language differs from Korean only in the presence/absence of an uninterpretable feature that motivates head movement of the LV functioning as the licenser of LV-stranding ellipsis, and thus, an element generated inside the ellipsis site can be located in Spec, VoiceP at the point of ellipsis. The present analysis on the timing of ellipsis predicts that the element should be able to be extracted out of the ellipsis. In the next section, I will demonstrate that Farsi is precisely such a language, and that this prediction is borne out.

4.2.2. Farsi LV-stranding ellipsis

Farsi has complex predicates that are composed of a light verb (LV) and a non-verbal complement. Non-verbal elements include NPs, APs, and PPs, as illustrated in (48).

(48) a. edāme dādan (NP + LV)

continuation GIVE

‘to continue’

b. bidār shodan (AP + LV)

awake BECOME

‘to wake up’

c. be kār bordan (PP + LV)

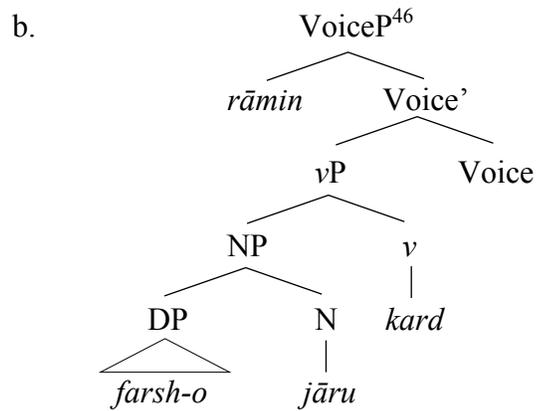
to work TAKE

‘to lose’

(Toosarvandani 2009)

The LVs used in complex predicates are homophonous with lexical verbs with a non-grammaticalized meaning. Even though LVs are glossed with the meaning of their corresponding lexical verbs, they do not make a semantic contribution. LVs take non-verbal elements as their complement, and determine the complements’ argument structure. For instance, in (49a), the LV *kard* ‘DO’ takes noun complement *farsh-o jaru* ‘carpet-OBJ broom’ and the complex predicate including the LV as a whole functions as a verbal predicate. It occurs with the external argument *rāmin*, which is the Agentive subject. According to Folli, Harley, and Karimi (2005), the LV in this construction is the overt realization of *v*. Assuming that the extended domain of a predicate which has an Agentive subject contains Voice, I posit here the structure in (49b) for Farsi complex predicates.

- (49) a. *rāmin* [_{NP} *farsh-o* *jāru*] *kard*
 Ramin carpet-OBJ broom DO
 ‘Ramin swept the carpet.’



4.2.2.1. The ellipsis site

Farsi complex predicate constructions allow ellipsis which strands the LV, as illustrated in (50).

- (50) a. *sohrāb* *piranā-ro* *otu* *na-zad* *vali* *rostam*
 Sohrab shirts-OBJ iron NEG-HIT.PAST.3sg but Rostam
 [_{NP} *piranā-ro* *otu*] *zad*.
 shirts-OBJ iron HIT.PAST.3sg
 ‘Sohrab did not iron the shirts, but Rostam did.’

⁴⁶ In Folli, Harley, and Karimi (2005) and Toosarvandani (2009), Voice is not part of the verbal domains. On this view, the subject of the predicate is introduced by *v*.

b. Restitutive reading

dishab āshpazxune pāk bud. Leylā omad kasif-esh
 last night kitchen clean was Leila come.PAST.3sg dirty-it
 kard. Kasi na-raft pāk-esh bo-kone.
 do.PAST.3sg nobody NEG-go.PAST-3sg clean-it SUBJ-DO.3sg
 emshab mixām dobāre āshpazxuna-ro pāk bo-konam.
 tonight want.PRES.1sg again kitchen-OBJ clean SUBJ-DO.3sg
 ‘Last night, the kitchen was clean. Leila came and dirtied it. Nobody
 cleaned it. Tonight I will clean it again.’ (Toosarvandani 2009)

Assuming that the restitutive reading and the repetitive reading are allowed when the adverb *dobāre* ‘again’ is adjoined to AP and v/VoiceP, respectively (Von Stechow 1996, Rapp and Von Stechow 1999), the following ellipsis sentence indicates that the ellipsis site is AP, the complement of the LV.

(52) a. Repetitive reading

dishab [_{VP} [_{AP} āshpazxuna-ro pāk kardam]. Emshab-am
 last night kitchen-OBJ clean DO.PAST.1sg tonight-also
 mixām dobāre [_{VP} [_{AP} ~~āshpazxuna-ro pāk~~] bo-konam]
 want.PRES.1sg again kitchen-OBJ clean SUBJ-DO.1sg
 ‘Last night, I cleaned the kitchen. Tonight, I will clean it again.’

b. Restitutive reading

dishab āshpazxune pāk bud. Leylā omad kasif-esh
last night kitchen clean was Leila come.PAST.3sg dirty-it
kard. Kasi na-raft pāk-esh bo-kone.
do.PAST.3sg nobody NEG-go.PAST-3sg clean-it SUBJ-DO.3sg
emshab mixām [_{VP} [_{AP} dobāre [_{AP} ~~āshpazxuna-ro pāk~~]] bo-konam.
tonight want.PRES.1sg again kitchen-OBJ clean SUBJ-DO.3sg
‘Last night, the kitchen was clean. Leila came and dirtied it. Nobody
cleaned it. Tonight I will clean it again.’ (Toosarvandani 2009)

The elliptical sentences in (52) show that both the repetitive reading and the restitutive reading are available, when the adverb *dobāre* is stranded. This is possible since the elided constituent is the nonverbal element and its internal argument. If the elided phrase were *vP* containing the trace of moved LV, it would be erroneously predicted that the restitutive reading would not be available.

4.2.2.2. Analysis of Farsi LV-stranding ellipsis and extraction

Toosarvanadi (2009) argues that the licenser of LV-stranding ellipsis is a LV bearing tense morphology. Given this, let us discuss what kinds of featural requirements the licenser of LV stranding ellipsis, namely LVs, might have, and when they would be satisfied. The first putative feature LVs might contain would be an uninterpretable feature that Agrees with an interpretable feature on the object. Even though LVs might have this feature, this feature must be deleted as soon as LVs merge with VP, under Chomsky’s (2000 et seq.) Probe-Goal system.

The second putative feature is an uninterpretable feature that motivates head movement. The Farsi negative marker *na-* is a pre-verbal affix (Karimi 2005; Taleghani 2006; Kwak 2010), and it attaches to the left of LVs when they are present in the sentence.

(53) a. Kimea (YE) ketâb na-xarid.

Kimea a book neg-bought

‘It is not the case that Kimea bought one book/books’

*‘There is a book/are books such that Kimea did not buy it/them.’

(kamiri 2005)

b. Mahshid golâbi doost na-dâre.

Mahshid pear love NEG-have.3SG.

‘Mahshid doesn’t like pears.’

(Kwak 2010)

Shafiei (2016) reports that Farsi is a scope rigid language, as illustrated in (54).⁴⁷

(54) Ye doxtar-i har kolâh-i ro did.

a girl-EZ every hat-EZ ACC see.PAST.3SG

‘Some girl saw every hat.’ (some > every, *every > some)

⁴⁷ Shaifei conducted an experiment with 48 adults to test if Farsi is a scope rigid language. The acceptance rate of the surface scope reading and the inverse scope reading in sentences such as (54) is 90.6% and 3.1%, respectively.

With respect to the interaction between quantified objects and the negative marker *na-*, Shafie reports that wide scope of quantified objects is available in sentences such as (55).

- (55) Arman har mive-i ro na-xord.
Arman every fruit-EZ ACC not-eat.PAST.3SG
'Arman did not eat every fruit.' (every > not)

The fact that wide scope of the universal quantifier object is unavailable in (54), while wide scope of the universal quantifier is available in (55) indicates the following: although the direct object is located higher than the negative pre-verbal affix *na-* at some stage of the derivation as a result of either QR or overt movement, it never moves over the subject. If it could move over the quantified subject first, and subsequently, the subject underwent movement to its surface position, it would be predicted that wide scope of the quantified object would be available. This is because the subject can reconstruct below the object (see Hornstein 1995; Johnson and Tomioka 1997, among others). This entails that the pre-verbal negation affix *na-* is base-generated inside the verbal domain. If it were generated above TP, as Karimi (2005) and Taleghani (2006) suggest, it is unclear how the quantified object could scope over the negation in (55), while still being unable to outscope the subject.

Given the discussion above, if a verb to which the negation affix attaches remained inside the verbal domain, then the quantified subject would always take scope over negation. On the other hand, if the verb could undergo head movement

over T, it is predicted that the quantified subject could take scope below the negative marker, via reconstruction of the former. The sentence (56) shows that the negation affix can scope over the subject, when it attaches to the LV (Shafiei 2016).⁴⁸

- (56) Har bache-i be māmân-esh zang na-zad.
 Every kid-EZ to mom-GEN.3SG ring NEG-HIT.PAST.3SG
 ‘Every child didn’t call their mom.’ (every > NEG)

Consequently, we can conclude that LVs in this language undergo head movement at least as far as T.⁴⁹ This entails that LVs in Farsi have an uninterpretable feature that is not deleted until a higher head enters into the structure.

⁴⁸ Shafiei conducted an experiment with 48 adult participants to investigate scope interactions between quantified subjects and negation. 14.6% of the participants allow wide scope of universal quantifier subject. When the subject is a numeral quantifier as shown in (i), 85.4% of the participants permit wide scope of the numeral quantifier subject.

- (i) Do tâ persar farsh o na-sâb-id-and.
 Two PART boy carpet ACC NEG-rub-3sg.PAST-PL
 ‘Two boys didn’t clean the carpet.’

Unlike Farsi, Korean short form negation which cliticizes to verb does not scope over quantified subjects of transitive verbs (Han et al. 2007), as shown in (ii).

- (ii) Motun mal-i wuli-lul an nem-ess-ta.
 every horse-NOM fence-ACC NEG jump.over-PAST-D
 ‘Every horse did not jump over the fence.’ (every > NEG, *NEG > every)

⁴⁹ A question that arises here is how the negative pre-verbal affix *na-* can scope below quantified objects if verbs to which *na-* attaches move to a position higher than T. In order to resolve this, I assume in this dissertation that head movement can undergo reconstruction.

Another putative feature the LV might bear is the classic EPP. Suppose that *v* had the classic EPP. If this were so, the sentences in (50), whose ellipsis site contains a DP (which is a viable target for the classic EPP) should not be generated. This is because the DP would have to be moved to Spec,*v*P (i.e., outside the ellipsis site).⁵⁰ One might claim that those sentences can be generated if we assume that the internal arguments of the nonverbal elements are *pro*, and that *pro* moves to Spec,*v*P in order to satisfy the classic EPP on *v*. However, I reject this possibility for the following reason: According to Toosarvandani (2009), sentences containing a null argument *pro* in Farsi can have two readings. The null argument can refer to a previously mentioned referent or it can convey a nonspecific interpretation, as illustrated in (57).

⁵⁰ As for the position where specific direct objects, which are marked with *-ro*, are located, there are two approaches. First, Karimi (1999a,b) argues that even though both specific and nonspecific direct objects are generated inside VP, the former are generated in Spec,VP, while the latter are generated in the complement position of V. On the other hand, Karimi (2005) suggests that both specific and nonspecific direct objects externally merge to V, and only the former obligatory moves out of VP in order to receive a specific interpretation. Given that the ellipsis site of LV stranding ellipsis is VP, and that the ellipsis site can contain specific direct objects marked with *-ro* (see (50)), I assume in this dissertation that the first approach is right, even though it is not clear how specificity determines the base-generation position of direct objects. If the second approach were right, then it would be erroneously predicted that LV stranding ellipsis whose ellipsis site contains a specific direct object could not be generated.

- (57) a. rostam piranā-ro otu mizane. man *pro* otu
 Rostam shirts-OBJ iron HIT.PRES.3sg. I iron
 ne-mizanam.
 NEG-HIT.PRES.1sg
 ‘Rostam will iron the shirts. I won’t iron them.’
 ‘Rostam will iron the shirts. I won’t iron anything.’ (Toosarvandani 2009)

However, LV-stranding ellipsis does not permit a nonspecific reading. The internal argument of the nonverbal element inside the ellipsis site must be identical to its antecedent.

- (58) sohrāb piranā-ro otu mizane vali rostam
 Sohrab shirts-OBJ iron HIT.PRES.3sg but Rostam
 [NP e] ne-mizane.
 NEG-HIT.PRES.3sg.
 ‘Sohrab will iron the shirts, but Rostam won’t iron the shirts.’
 *‘Sohrab will iron the shirts, but Rostam won’t iron anything’
 (Toosarvandani 2009)

If the internal argument of the non-verbal element were null argument *pro*, and it were moved from its base-position to Spec,vP to satisfy the classic EPP, it would be

predicted that (58) would be ambiguous, contrary to fact. Consequently, the possibility that the classic EPP on v is satisfied by *pro* must be ruled out.⁵¹

According to the present proposal concerning the timing of ellipsis, ellipsis of the complement of the LV must occur as soon as all the featural requirements of the LV are satisfied. Recall that the LV contains an uninterpretable feature that drives head movement to a position outside the verbal domain. This amounts to saying that not all the featural requirements of the LV are satisfied when v is introduced into the derivation. Given the assumption that the LV moves through the Voice head that selects the v P headed by the LV, we predict that an element undergoing \bar{A} -movement can be extracted out of the ellipsis site. This is because, at the point of ellipsis, the element can already be located in Spec, VoiceP. This prediction is borne out, as shown in (59).

⁵¹ The elliptical sentence (50) where the complement of the LV is elided can be generated on the assumption that the LV optionally contains an classic EPP. If this is true in Farsi, LV-stranding ellipsis in Farsi could not serve as supporting evidence for the present proposal concerning the timing of ellipsis. If v can optionally contain the EPP, the extracted objects in (59) can be located in Spec, v P at the point of ellipsis, regardless of whether all the featural requirements of the LV are already satisfied when the LV is introduced into the derivation, or are only satisfied later. However, there is no compelling evidence for overt movement of DP to the specifier position of the LV. In this situation, positing an optional classic EPP on v in the absence of evidence for arguments supporting optional movement of DPs is problematic from the perspective of learnability. That is, it is not clear how children learn that v has an optional classic EPP. Consequently, in this dissertation, I assume that v does not bear even an optional classic EPP.

- (59) a. rostam PIRAN-O otu na-zade vali SHARVĀR-O₁
 Rostam shirt-OBJ iron NEG-HIT.PART.3sg but pants-OBJ
 midunam ke [~~NP-t_i-otu~~] zade.
 know.PRES.1sg that iron HIT.PART.3sg
 ‘Rostam did not iron the shirt, but the pants, I know he did.’
- b. rostam PIRAN-O otu zade va sohrāb SHARVĀR-O₁
 Rostam shirt-OBJ iron HIT.PART.3sg and Sohrāb pants-OBJ
 [~~NP-t_i-otu~~] zade.
 iron HIT.PART.3sg
 ‘Rostam ironed the shirt, and the pants, Sohrāb did.’

As predicted, the internal arguments of non-verbal elements which undergo both long and short distance scrambling can be extracted outside the ellipsis site.

4.2.3. Interim conclusion

Both in Korean and Farsi, the complement of the LV can be elided, and the LV, which is base-generated in ν , functions as the licenser of LV-stranding ellipsis. However, these two languages exhibit a contrast in extractability out of the ellipsis site – extraction is possible in Farsi, but not in Korean. This difference is attributable to the presence/absence of an uninterpretable inflectional feature on the LV that triggers its head movement. In Korean, the LV does not have any featural requirement that awaits the merger of Voice with ν P. Thus, LV-stranding ellipsis occurs as soon as the LV is introduced into the derivation. Given that ν does not contain any feature that triggers internal merge of an element to its specifier (i.e., it

contains neither the classic EPP nor an EPP-feature), no element can escape from the ellipsis site at the point of ellipsis. On the other hand, there is a featural requirement of the LV in Farsi (i.e. an uninterpretable feature triggering head movement) that can only be satisfied after Voice merges with vP . Consequently, at the point of ellipsis of the complement of the LV, an element base-generated inside the ellipsis site can already have moved to Spec, VoiceP. Due to this, extraction out of the ellipsis site is permitted. The contrast in the extractability in Korean and Farsi LV-stranding ellipsis demonstrates that the proposal concerning the timing of ellipsis in (1) has cross-linguistic merit.

4.3. Ellipsis as an operation eliminating phonological feature matrices

In this section, I will argue that it is universal that elided elements can participate in further formal operations occurring after ellipsis, by investigating Korean LV-stranding ellipsis and BrE *do* constructions.

4.3.1. Korean LV-stranding ellipsis

In section 4.2.1.2, I have shown that no element base-generated inside the ellipsis site in Korean LV-stranding ellipsis, namely the VP selected by the LV, can be pronounced outside the ellipsis site. This is shown in (60) and (61).

- (60) A: Bill-ul₁ Mary-nun [VP [CP Kim-i t₁ cohahanta-ko] sayngkak]
 Bill-ACC Mary-TOP Kim-NOM like-C think
 an-ha-n-ta.
 NEG-DO-PRES-D
 ‘Mary does not think that Kim likes Bill.’
- B: * Tom-ul John-un [~~VP [CP Kim-i t₄ cohahanta-ko] sayngkak~~]
 Tom-ACC John-TOP Kim-NOM like-C think
 an-ha-n-ta.
 NEG-DO-PRES-D
 ‘Mary does not think that Kim likes Bill.’
- (61) * Sewul-ul₂ cek-i [VP t₂ phakoy] an-ha-ess-ta. Haciman
 Seoul-ACC enemy-NOM destruction NEG-DO-PAST-D but
 Pusan-ul₃ kutul-un [~~VP t₃ phakoy~~] ha-ess-ta.
 Busan-ACC they-TOP destruction DO-PAST-D
 ‘The enemy did not destroy Seoul. But they destroyed Busan.’

In this section, I demonstrate that elements that are elided during the derivation as a result of ellipsis can move further out of the ellipsis site, as long as they are not phonologically pronounced. This is argued by examining LV-stranding ellipsis with Korean Exceptional Case Marking (ECM) constructions and Negative Polarity Item (NPI) licensing. This is possible because ellipsis is an operation that gets rid of only

the PFMs of the lexical items inside the ellipsis site, but preserves their FFMs, which allows them visible for further formal operations that occur after ellipsis.

4.3.1.1. Exceptional Case Marking (ECM) constructions

ECM constructions in Korean have the following properties: First, complements of ECM verbs are finite CPs. Second, ECM subjects seem to be able to occur either with a nominative case marker or an accusative marker. These properties are illustrated in (62).

- (62) a. Salamtul-i tolkolay-ka ttokttokha-ta-ko sayngkak-ha-n-ta.
People-NOM dolphin-NOM clever-D-C think-DO-PRES-D
‘People think that dolphins are clever.’
- b. Salamtul-i tolkolay-ul ttokttokha-ta-ko sayngkak-ha-n-ta.
People-NOM dolphin-ACC clever-D-C think-DO-PRES-D
‘People think dolphins to be clever.’

Here are some arguments supporting the claim that accusative ECM subjects can be located in the matrix clauses: First, unlike nominative marked ECM subjects, accusative marked ECM subjects can precede an adverb modifying the matrix predicate.

- (63) a. *Na-nun motun tongmwul-i elisekkeyto ttokttokha-ta-ko mit-ess-ta.
 I-TOP every animal-NOM foolishly clever-D-C believe-PAST-D
 ‘I foolishly believed that every animal is clever.’
- b. Na-nun motun tongmwul-ul elisekkeyto ttokttokha-ta-ko mit-ess-ta.
 I-TOP every animal-ACC foolishly clever-D-C believe-PAST-D
 ‘I foolishly believed that every animal is clever.’

In (63), the adverb *elisekkeyto* ‘foolishly’ is a speaker-oriented adverb that expresses the attitude toward the matrix proposition, but not toward the embedded proposition. This entails that the adverb must be generated in the matrix clause. On the basis of this, the sentences in (63) indicate the following: the nominative marked ECM subject in (63a) cannot move out of the embedded clause, while the accusative ECM subject in (63b) is located in the matrix clause.

Additionally, nominative marked ECM subjects and accusative marked ECM subjects exhibit different scope interpretations relative to negation in the matrix clause, as shown in (64).

- (64) a. Tom-un [_{CP} motun haksayng-i chakhata-ko] sayngkak an-hay.
 Tom-un every student-NOM clever-C think NEG-DO.PRES
 ‘Tom does not think that every student is clever.’
 (✓NEG > every, *every > NEG)

b. Tom-un [motun haksayng-ul]₁ [CP t₁ chakhata-ko] sayngkak
 Tom-TOP every students-ACC clever-C think
 an-hay.

NEG-.PRES

(lit.) ‘Tom does not think/consider every student to be clever.’

(✓NEG > every, ✓every > NEG)

In (64a), where the embedded ECM subject is nominative marked, the universal quantifier embedded subject always scopes under short form negation in the matrix clause. On the other hand, when the ECM subject is accusative marked as in (64b), the universal quantifier can take scope over negation in the matrix clause. The availability of wide scope for the universal quantifier in this sentence indicates that at some point in the derivation, the ECM subject is located higher than negation (on the standard assumption that the scope of negation is fixed). If the accusative ECM subject remained inside the embedded clause, then it would be predicted that negation would always scope over the universal quantifier, similar to (64a).

Regarding the base position of accusative ECM subjects, some researchers suggest that they are base-generated inside the embedded clause and move to the matrix clause (Yoon 2007; Hong and Lasnik 2010, among others), following Postal (1974), Kuno (1976), Lasnik and Saito (1991), and Koizumi (1993). I will call this the Subject-to-Object Raising (SOR) analysis. On the other hand, other researchers (Hong 1990, 1997; Hoji 1991, among others), suggest that the accusative marked

subjects are base-generated in matrix clauses, without SOR. I will call this the proleptic object analysis.

Yoon (2007) points out that the proleptic object analysis has the following two problems. First, it is not clear how the base-generated proleptic object gets its theta role – semantically, it is not an object of the ECM verb, but the subject of the embedded predicate. Second, we can find cases where the accusative marked ECM subject retains the case/postposition associated with the embedded predicate.

(65) a. Cheli-**hanthey**-man-i mwuncey-ka iss-ta.

Cheli-DAT-only-NOM problem-NOM exist-D

‘Only Cheli has problems.’

a’: Na-nun Cheli-**hanthey**-man-ul mwuncey-ka iss-ta-ko

I-TOP Cheli-DAT-only-ACC problem-NOM exist-D-C

sayngkak-ha-n-ta.

think-DO-PRES-D

‘I think that only Cheli has problems.’

b. Yeki-**pwuthe**-ka nay ttang-i-ta.

here-from-NOM my land-COP-D

‘From about here is my property.’

b’: Na-nun yeki-**pwuthe**-lul nay ttang-ila-ko sayngkak-ha-n-ta.

I-TOP here-from-ACC my land-COP-C think-DO-PRES-D

‘I consider from about here to be my property.’

The matrix verbs in (65a') and (65b') do not take dative and locative complements. Nonetheless, the sentences are grammatical, which cannot be easily accounted for under the proleptic object analysis. However, the SOR analysis can explain where the accusative marked ECM subjects receive their theta role from, and how the dative in (65a') and the locative in (65b') are licensed: since the accusative ECM subjects are base-generated as subjects as in (65a) and (65b) in the embedded clauses, they can be semantically connected to the embedded predicates, and can contain the dative and locative markers simultaneously, as instances of case- stacking (Gerds and Youn 1988, 1990; Yoon 1996, 2004, 2005, among others).

Given the discussion above, I assume that accusative marked ECM subjects can be located in the matrix clause through SOR. Regarding the issue about whether or not SOR is obligatory or optional, here are two arguments showing that SOR is optional, i.e., that the accusative ECM subjects can remain inside the embedded CP. One comes from the fact that a preposed embedded CP can contain the accusative ECM subject:

- (66) [CP *tolkolay-ka/lul* *yengliha-ta-ko*]₁ *John-i* *t*₁ *sayngkak-ha-n-ta*.
 dolphin-NOM/ACC clever-D-C John-NOM think-DO-PRES-D
 'John thinks that dolphins are clever.'

In the previous chapter, I argued that the nominal verb *sayngkak* 'think' is base-generated in V, and does not move to *v*. Nominal verbs are always followed by short form negation *an*, which is base-generated adjoined to the right of VP. Given that the

overt verb is not part of the fronted phrase in (66), the fronted phrase must be a projection lower than matrix V. The fronted constituent contains a complementizer, indicating that it is no smaller than CP. If SOR were obligatory, then it would be predicted that (66) could not be generated, since the accusative ECM subject would not be located inside the fronted constituent.

Here is another argument for optional SOR. Both nominative and accusative ECM subjects can be preceded by elements associated with the embedded clause. Consider the following sentences, which are equivalent to Japanese sentences in Hiraiwa (2010).

- (67) a. John-i [CP Mary-ka/lul ku cikep-ey cekhapha-ci ahn-ta-ko]
 John-NOM Mary-NOM/ACC that job-DAT suitable-CI NEG-D-C
 sayngkak-ha-n-ta.
 think-DO-PRES-D
 ‘John thinks that Mary is not suitable for the job.’
- b. John-i [CP ku cikep-ey₂ Mary-ka/lul t₂ cekhapha-ci ahn-ta-ko]
 John-NOM that job-DAT Mary-NOM/ACC suitable-CI NEG-D-C
 sayngkak-ha-n-ta.
 think-DO-PRES-D

In (67a), the argument *ku cikep-ey* ‘that job-DAT’ follows the ECM subject. On the other hand, in (67b), it moves to the clause initial position through scrambling. The fact that the dative marked embedded element can be followed by the accusative

ECM subject indicates that the latter can stay inside the embedded CP. Due to this, the proposed embedded CP can contain the accusative (and nominative) ECM subject, as illustrated in (68).

- (68) [CP ku cikep-ey₂ Mary-ka/lul t₂ cekhapha-ci ahn-ta-ko]₃
 that job-DAT Mary-NOM/ACC suitable-CI NEG-D-C
 John-i t₃ sayngkak-ha-n-ta.
 John-NOM think-DO-PRES-D
 ‘John thinks that Mary is not suitable for the job.’

To recapitulate, accusative ECM subjects are base-generated inside the embedded CP, and they can move to the matrix CP.⁵² If this is right, the scope facts

⁵² Hong and Lasnik (2010) suggest that accusative marked ECM subjects obligatorily move into the matrix clause, based on the contrast between the following sentences:

- (i) a. John₁-un ku₁-ka taytanhata-ko sayngkak-ha-n-ta.
 John-TOP he-NOM great-C think-DO-PRES-D
 ‘John₁ thinks that he₁ is great.’
 b. *John₂-un ku₂-lul taytanhata-ko sayngkak-ha-n-ta.
 John-TOP he-ACC great-C think-DO-PRES-D
 ‘John₂ thinks that he₂ is great.’

Assuming that the relevant domain for Condition B is the clause (Lasnik 2002), the ungrammaticality of (ib) indicates that the accusative marked ECM subject, unlike the nominative marked embedded subject in (ia), must be located in the matrix clause. If it could remain inside the lower clause, then it is predicted that the sentence would be grammatical, since it would obey Condition B.

At first glance, this does not seem compatible with the view that accusative ECM subjects move into the matrix CP only optionally. However, suppose that the binding domain in Korean is TP, and the accusative marked ECM subject is located between the embedded clause boundary and TP. Then, we can get the intended binding facts in (i). The following Japanese sentences suggest that such an analysis may be on the right track. The sentences contain the local anaphor *zibunzisin* ‘self’

in (64) entail the followings: first, wide scope of the ECM subject in (64b) cannot be attributed to quantifier raising (QR), but to overt movement of the ECM subject, given that Korean lacks QR across clause boundaries. Additionally, the accusative ECM subject moves to a position higher than short form negation, in order to achieve wide scope of the ECM subject, assuming that scope is read off the syntactic structure. The ECM subject still has to be located below Spec,TP of the matrix clause, where the matrix subject is located. Spec,vP is not an appropriate position either. This is because *v* is not a phase head, nor does it have the classic EPP (Recall that I assume in this dissertation that VoiceP but not vP is a phase; and see the argument against the existence of the classic EPP on *v* in section 4.2.1.2). Given this, I assume that

(see Saito 2003, among many others), and its possible indices vary depending on its position.

- (ii) a. Taroo-ga₁ [_{CP} Hanako-ga₂ [_{CP} Ziroo-ga₃ zibunzisin-o*_{1/2/3} hihanita to] Taroo-NOM Hanako-NOM Ziroo-NOM self-ACC criticized that itta to] omotteiru (koto) said that think fact
 ‘Taroo thinks that Hanako said that Ziroo criticized self.’
- b. Taroo-ga₁ [_{CP} zibunzisin-o_{1/2/3} Hanako-ga₂ [_{CP} Ziroo-ga₃ *t* hihanita to] Taroo-NOM self-ACC Hanako-NOM Ziroo-NOM criticized that itta to] omotteiru (koto) said that think fact
 ‘Taroo thinks that Hanako said that Ziroo criticized self.’ (Saito 2003: 508)

We can assume that (iib) is derived from (iia) through long-distance scrambling. It is widely assumed that long-distance scrambling in Japanese is an instance of \bar{A} -movement (see Mahajan 1990; Saito 1992, among many others), and that scrambled elements move to their surface position via Spec,CP. A noteworthy point in (iib) is that the final landing site of the scrambled element is the highest embedded Spec,CP. Due to the ban on string vacuous scrambling (Hoji 1985; Fujii 2004; Takita 2009, among others), it does not move further to a position in the matrix clause. If this is true, the binding fact in (iib) implies that the binding domain is not the clause. If the clause were the binding domain, then it would be predicted that the anaphor could not refer to the matrix subject. However, if the binding domain is TP, then we explain how the anaphor in (iib) can be coreferential with the matrix subject.

In order to account for PBC effects, Hiraiwa (2010) made the following generalization.

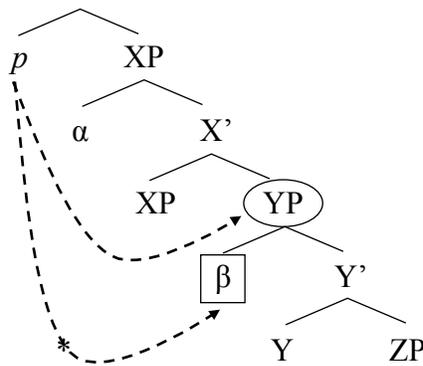
(71) Generalization: The Edge and the PBC

In a remnant movement of y , PBC effects are induced only when the operation that extracts x out of y is a movement to the edge of a phase.

(Hiraiwa 2010: 143)

Let us examine the following derivation. According to the generalization above, in (72), when the phase head p attracts YP to its specifier position, movement of β to specifier of p induces PBC effects.

(72)



Given this, suppose that the embedded CP is preposed via phase edges, and thus, it moves through Spec, VoiceP in the matrix CP. This can account for the ungrammaticality of (69) as follows: An EPP-feature on Voice in the matrix clause probes a goal. Since the accusative ECM subject moves to Spec, VoiceP, and the

embedded CP moves via Spec, VoiceP en route to its surface position (assuming that every \bar{A} -moving element undergoes movement via phase edges), this induces the PBC effects. On the other hand, in order for the embedded CP to be preposed, the ECM subject must remain inside the embedded CP. Note that this also supports the proposal made in section 4.2.1.1 that ν does not have the classic EPP. Suppose that ν contained the classic EPP, and thus, the accusative embedded subject could move to Spec, ν P before Voice is introduced into the derivation. Then, the embedded CP could be preposed via Spec, VoiceP. This derivation is legitimate, and does not induce the PBC effects. Thus, if it is assumed that ν contains the classic EPP, it is not easy to explain how the sentence (69) is ruled out.

Bearing this in mind, consider (73).

- (73) A: Tom-un [motun haksayng-ul]₁ [VP [CP t₁ ttokttokhata-ko]₂ sayngkak]
 Tom-TOP every student clever-C think
 an-ha-n-ta.
 NEG-DO-PRES-D
 ‘Tom thinks that for every student, s/he is not clever.’
- B: Na-to [VP e]₂ an-ha-n-ta
 I-also NEG-DO-PRES-D
 ‘I also think that for every student, s/he is not clever’

In (73A), wide scope of the accusative marked ECM subject is available, which means that the accusative marked ECM subject is moved from the embedded clause

to a position higher than short form negation in the matrix CP (i.e. Spec, VoiceP). Wide scope of the ECM subject is also available in (73B), where VP is elided. According to the present proposal, in (73B), VP deletes when the licenser LV is introduced into the derivation, since it does not have any featural requirement that causes the elision of VP to be delayed. If this is so, then the ECM subject must be deleted inside VP. This is because it fails to be located outside the ellipsis site at the point of ellipsis. How can the intended scope be available in (73B)? The proposal advanced in chapter 2 can account for this straightforwardly. As a result of ellipsis, the PFMs of *sayngkak* ‘think’ and its complement CP are eliminated, but their FFMs are preserved. Consequently, even after the accusative ECM subject is deprived of its PFM, the ECM subject is still eligible for further syntactic operations. Due to this, the ECM subject which now lacks its PFM can raise to the position that the ECM subject in (73A) lands in, over short form negation in the matrix clause.

4.3.1.2. Negative Polarity Item (NPI) licensing

In Korean, nominals containing *amwu* ‘any’ and the particle *to* have been analyzed as negative polarity items. Choe (1988) and Kuno (1998) argue that Korean (and Japanese) NPIs must be licensed by a negation marker located in the same clause, which is known as the Clausemate Condition on NPI licensing. This condition can account for the contrast illustrated in (74).

- (74) a. *John-un [CP Cheli-ka amwu chyak-to sa-ess-ta-ko]
 John-TOP Cheli-NOM any book-TO buy-PST-D-C
 sayngkak-ha-ci ani-ha-ess-ta.
 think-DO-CI NEG-do-PAST-D
- b. Amwu chayk-to₁ John-un [CP Cheli-ka t₁ sa-ess-ta-ko]
 any book-TO John-TOP Cheli-NOM buy-PAST-D-C
 sayngkak-ha-ci ani-ha-ess-ta.
 think-DO-CI NEG-do-PAST-D
- ‘John did not think that Cheli bought any book.’

The embedded clause in (74a) does not contain a negation marker, so the NPI in the embedded clause cannot be licensed. In (74b), the NPI is not licensed within the embedded clause either; but after scrambling into the matrix clause, the NPI is licensed by the matrix negation marker (See Sells and Kim 2006).

Given this, let us consider the following sentences.

- (75) A: Amwu si-to₁ Na-nun [VP [CP Tom-i t₁ ssu-ess-ta-ko]
 Any poem-TO I-TOP Tom-NOM write-PAST-D-C
 sayngkak]₂ an-hay.
 think NEG-DO.D
- ‘I don't think that Tom wrote any poem.’

B: ?Na-to [_{VP} [_{CP} Tom-i _____ amwu si-to_i _____ ssu-ess-ta-ko] _____ sayngkak]₂

I-also Tom-NOM any poem-TO write-PAST-D-C think

an-hay.

NEG-DO.D

‘I don’t think that Tom wrote any poem, either.’

In (75A), the NPI *amwu si-to* ‘any poem-TO’ is base-generated in the embedded clause. In its base position, it is not licensed. When the NPI is moved to the matrix clause, short form negation *an* licenses the scrambled NPI. An interesting point is that the sentence (75B) is grammatical, even though the NPI base-generated inside the ellipsis site is elided along with VP: the elision of VP occurs when the LV, which functions as the ellipsis licensor, merges with the ellipsis site. At the point of ellipsis, the NPI not only stays inside the ellipsis site, but also is located inside the embedded clause, since neither Spec,vP nor Spec,VP in the matrix clause is an appropriate landing site for \bar{A} -moving elements, assuming that long distance scrambling has the properties of \bar{A} -movement only (Mahajan 1990; Saito 1992, among others). If this is right, then how can the sentence (75B) be grammatical? I propose that the NPI in (75B) can move to the matrix clause even after ellipsis, and thus, it can be licensed by short form negation in the matrix clause. If NPI were frozen for formal operations occurring after ellipsis, it is erroneously predicted that the NPI could never be licensed, and thus, the sentence (75B) would be ungrammatical. Consequently, (75B) supports the present proposal that what is elided as a result of ellipsis is the PFMs of

lexical items, but their FFMs are preserved, which makes them visible for formal operations.

4.3.2. The British English (BrE) *do* construction

As mentioned in section 2.5.1, the BrE *do* construction, where the complement of *do* located in *v* is elided, has a property with respect to \bar{A} -extraction out of the ellipsis site – \bar{A} -movement out of the ellipsis site is not allowed, as shown in (76).

- (76) *Although we don't know what John might read, we do know what Fred
might do ____.

However, a number of researchers have observed that not all instances of \bar{A} -movement are blocked by the elision of VP in this construction. Abels (2012) and Thoms and Sailor (2017) point out that topicalization of a direct object base-generated inside the ellipsis site is permitted in the BrE *do* construction. In addition, Baker (1984) observes that relativization is not blocked by the elision of VP. These are exemplified in (77a) and (77b), respectively.

- (77) a. Hazelnuts, I won't eat. Peanuts, I might do. (Thoms and Sailor 2017)

- b. A man who steals does not incur the same measure of public reprobation
which he would have done in the past. (Baker 1984)

Thoms and Sailor (2017) account for the contrast between (76) and (77) as follows: According to Haddican (2008), unlike emphatic *do*, BrE *do* generated in *v* has clitic-

like properties. First, it cannot be stressed. Second, it cannot be separated from the verb it cliticizes to by epistemic adverbs or parentheticals. Additionally, T-to-C movement, stranding *do*, is not available.

- (78) a. Q: Has Ines eaten?
 A: I don't know, but she SHOULD do./*I don't know, but she should DO.
 b. *I don't know if she'll come, but she should obviously do.
 c. *I don't know if she'll come, but she should, it seems, do.
 d. *I know Maria will come, but will your brother do? (Haddican 2008)

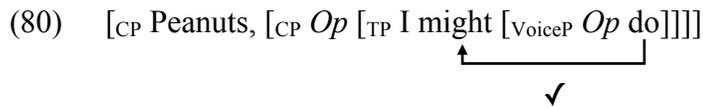
Following Haddican's analysis, Thoms and Sailor assume that cliticization of BrE *do* is prosodic incorporation, which is followed by copy deletion of the moving element in the post-syntactic derivation (Thoms et al. 2016). Given this, they propose that, in a sentence like (76), an overt copy of the *wh*-element left as the derivation proceeds is located in Spec, VoiceP (i.e. between *do* and the modal which *do* cliticizes into), and thus, cliticization is blocked.⁵³ This is illustrated in (79).

- (79) ... we do not know what Fred might [VoiceP what do].


On the other hand, elements that are lexically specified as null, such as null operators and PRO, do not preclude prosodic incorporation. Assuming that what is extracted

⁵³ In their original analysis, the relevant phase edge where the moving element leaves its copy is Spec, vP. This is because they do not assume that verbal domains contain VoiceP. The absence/presence of VoiceP does not cause any difference in analyzing the contrast between (79) and (80) with phonological incorporation.

out of the ellipsis site in the sentences in (77) is a null operator (see section 3.3.3.), cliticization can occur. Since they assume that A-movement does not leave a copy (Chomsky 1995, Lasnik 1999), movement of the subject base-generated in Spec, VoiceP to Spec, TP does not block phonological incorporation. The derivation of (77a) is illustrated in (80).



In this analysis, the (un)availability of extraction out of the ellipsis site is reduced to whether BrE *do* can be phonologically incorporated or not.

However, I have several concerns about this approach. First, even though Thoms and Sailor can successfully account for the contrast between (76) and (77), this approach cannot explain the extraction facts in English, Korean, Farsi, and BrE *do* construction in a uniform way, since, in the first three languages, (overt) extraction is barred even in environments where phonological incorporation is not observed. In contrast, the derivational approach to ellipsis advanced in this dissertation can capture the contrast between (76) and (77) as well as the extraction facts in English, Korean and Farsi without assuming further mechanisms. In (77a), the elision of VP occurs when *do* merges with the ellipsis site. At the point of ellipsis, the null operator undergoing \bar{A} -movement is still in the ellipsis site, and thus, the PFM of the null operator is eliminated. However, since it still contains its FFM, the null operator can undergo further movement. This process satisfies the relevant EPP requirement – an uninterpretable feature on C which attracts an element to its specifier position.

respectively. We can get inverse scope when an interpreted copy of a moved quantifier is located higher than the other quantifier, while what is pronounced is the lowest copy.

Between these two approaches, only the first approach is compatible with Thoms and Sailor's analysis. This is because, under that approach, there is no copy left in Spec,VoiceP (i.e., between *do* and its host modal). Thus, phonological incorporation can occur. However, suppose that QR also occurs in the narrow syntax. Since QR is an instance of \bar{A} -movement, it proceeds via phase edges (Bruening 2001). Then, the quantifier object in (81b) leaves a copy in Spec,VoiceP, en route to its final landing site over negation in the narrow syntax. If so, it is predicted that the sentence would be ungrammatical, since phonological incorporation of *do* is precluded by the copy of the quantifier located in Spec,VoiceP. On the other hand, the proposal advanced in this dissertation is compatible with either of the two approaches mentioned above, since elements whose PFMs are eliminated still contain their FFMs, and thus, they are visible for operations occurring not only in narrow syntax but also at LF.

To summarize, even though Thoms and Sailor's analysis can capture the extraction facts in the BrE *do* construction, the present proposal based on the derivational approach in the previous chapter is superior to their analysis, in that it can account for the extraction facts in Standard English, Korean, Farsi and British English in a uniform way, and it is more compatible with existing analyses of QR. Additionally, my approach does not need to make the invidious distinction between A- and \bar{A} -movement, in terms of leaving copies.

4.4. *Wh*-scrambling out of the ellipsis site

Even though Korean LV-stranding ellipsis does not allow any element base-generated inside the ellipsis site to be pronounced outside the ellipsis site, I have argued that elided elements can move further. Nonetheless, *wh*-phrases whose PFMs are eliminated do not seem to participate in further operations, as illustrated in (82). In (82A) and (82B), the *wh*-elements come to be located in their sentence initial position through long-distance scrambling.

- (82) A: Mwues-ul₁ Mary-nun [VP [CP John-i t₁ mek-ess-ta-ko]]
 what-ACC Mary-TOP John-NOM eat-PAST-D-C
 sayngkak]₂ ha-ni?
 think DO-Q
 ‘What does Mary think John ate?’
- B: *Molukeyss-e. Kulem, ne-nun [VP e]₂ ha-ni?
 don’t.know then you-TOP DO-Q
 (lit.)‘I have no idea. Then, what do you?’

The ungrammaticality of (82B) can be explained by means of the prosodic requirement I proposed in the previous chapter, repeated here as (83).

(83) **Contiguity (modified version)**

Every pair $\langle C, wh\text{-phrase} \rangle$ that stand in an Agree relation must be associated with PFMs $\langle \text{PFM}[C], \text{PFM}[wh\text{-phrase}] \rangle$, such that there is at least one ϕ that contains both of these PFMs, and within which $\text{PFM}[wh\text{-phrase}]$ is Contiguity-prominent.

(84) **Contiguity-prominent**

α is Contiguity-prominent within ϕ if α is adjacent to a prosodically active edge of ϕ .

The *wh*-element base-generated inside the ellipsis site in LV-stranding ellipsis is deprived of its PFM when VP is elided. Thus, at the point when the matrix interrogative complementizer, which is head-final, is introduced into the derivation, the *wh*-element which Agrees with the complementizer lacks its PFM. Due to this, the derivation fails to obey the prosodic requirement in (83). Now consider the following sentence:

(85) A: Mary-nun [CP John-i mwues-ul sa-ess-nunci]₃ mwul-ess-ta.

Mary-TOP John-NOM what-ACC buy-PAST-Q ask-PAST-D

‘Mary asked what John bought.’

B: Tom-to [CP e]₃ mwul-ess-ta.

Tom-also ask-PAST-D

(lit.)‘Tom also asked.’

In (85B), the ellipsis site contains a *wh*-element, similar to (82). Nonetheless, (85B) is grammatical. This is because the prosodic requirement in (83) has already been satisfied in the embedded clause before ellipsis occurs. Recall that the constraint in (83) is calculated at every CP level (see section 3.3.2).

Consequently, the prosodic requirement in (83) can account for why *wh*-elements must not be deprived of their PFM before they Agree with a relevant interrogative C, not only in languages where *wh*-movement is obligatory, such as English and Dutch, but also in *wh*-in-situ languages like Korean.

4.5. Conclusion

In this chapter, I have shown that the extraction contrast in Korean and Farsi LV-stranding ellipsis can be accounted for through the proposal concerning the timing of ellipsis advanced in this dissertation. Furthermore, Korean LV-stranding ellipsis also supports the proposal concerning what is elided as a result of ellipsis, namely that ellipsis targets the PFMs of lexical items inside the ellipsis site, while their FFMs remain intact. This is demonstrated by the fact that the elided elements in LV-stranding ellipsis can interact with another scope bearing element located outside the ellipsis site, and create a new NPI licensing environment. Additionally, topicalization and QR of the direct object in the BrE *do* construction serve as further evidence. Lastly, the modified version of Richard's (2016) Contiguity can account for why *wh*-elements do not seem to be able to participate in operations after ellipsis even in *wh*-in-situ languages.

Chapter 5: Conclusion

In this dissertation, I made two proposals with regard to ellipsis, one of which has to do with when ellipsis occurs in narrow syntax, and the other of which is about what is elided as a result of ellipsis. These proposals were advanced to account for extraction facts which cannot be explained through existing derivational approaches to ellipsis as well as non-derivational approaches to ellipsis, such as the PF-deletion theory and the LF copying theory.

With respect to when ellipsis occurs during the derivation, I made the following proposal in chapter 2, on the basis of extraction facts in English copular phrase ellipsis (CoPE).

(1) **The timing of ellipsis**

XP ellipsis occurs as soon as all the featural requirements of the licensor of XP ellipsis are satisfied.

A consequence of this proposal is that the point when XP ellipsis occurs can vary depending on the derivational point where all the featural requirements of the licensor of XP ellipsis are satisfied. If all the featural requirements of the licensor are satisfied as soon as the licensor is introduced into the derivation, ellipsis occurs before a higher head c-commanding the licensor is externally merged. On the other hand, if all the featural requirements of the licensor are not satisfied until a higher head enters the derivation, ellipsis occurs no sooner than when the higher head is externally merged.

If an element stays inside the ellipsis site at the point of ellipsis, the element is elided. On the other hand, if an element generated inside the ellipsis site can be located outside the ellipsis site at the point of ellipsis, the element can be pronounced outside the ellipsis site. I argued that this proposal can account for why embedded CoPE and matrix CoPE, where T is occupied by a modal, exhibit an unexpected asymmetry in *wh*-phrase object extraction, even though the ellipsis site of the former is identical to that of the latter. Given the discussion that the licenser of CoPE is T, in embedded CoPE, object *wh*-phrases generated inside the ellipsis site cannot be located outside the ellipsis site when all the featural requirements of the licenser T are satisfied, and thus, they must be elided. On the other hand, in matrix CoPE, the uninterpretable [*u*C]-feature of a modal, which drives T-to-C movement, delays the timing of CoPE. That is, ellipsis does not occur until C merges with TP, which allows object *wh*-phrases to escape from the ellipsis site at the point of ellipsis, assuming that all the operations triggered by the features in the same head occur simultaneously. This proposal concerning the timing of ellipsis is also supported by subject *wh*-phrase extraction in Standard English CoPE, object *wh*-phrase extraction in Standard predicate ellipsis, and object *wh*-phrase extraction in Indian Vernacular English as well as Belfast English.

Additionally, I introduced a novel contrast in object *wh*-phrase extraction between embedded CoPE and embedded regular VPE – the latter permits object *wh*-phrase extraction, while the former does not. Given that the ellipsis site of both ellipsis types is *v*P, I proposed that this asymmetry follows from the difference in the size of verbal domains. To be specific, the verbal domain of the copula, which is

semantically vacuous, lacks a VoiceP layer, while the extended domain of verbs which make a semantic contribution contains a VoiceP layer. In embedded CoPE, object *wh*-phrases cannot be located outside the ellipsis site at the point of ellipsis. This is because the licensor T selects the ellipsis site, namely v_bP , and T does not provide \bar{A} -moving object *wh*-phrases with a landing site at the point of ellipsis. On the other hand, in the case of embedded regular VPE, object *wh*-phrases can be located in Spec, VoiceP before vP is elided (i.e. when the featural requirements of the licensor T are satisfied), assuming that VoiceP is a phase.

The proposal concerning the timing of ellipsis has several theoretical implications. First, between the Probe-driven approach to head movement and the Goal-driven approach to head movement, the latter is preferable to the former (at least) in explaining the fact that head movement of the licensor can delay the point where ellipsis occurs. Second, the present proposal shows that English T-to-C head movement and Dutch modal raising to C do not occur in the same manner. Third, in contrast to non D-linked object *wh*-phrases, D-linked object *wh*-phrases can be pronounced outside the ellipsis site in embedded CoPE as well as in matrix CoPE. If D-linked object *wh*-phrases were base-generated inside the ellipsis site, it would be predicted that they could not be pronounced outside the ellipsis site, similar to non D-linked object *wh*-phrases. In order to account for the availability of extraction of D-linked *wh*-phrases, I proposed that they can be base-generated adjoined to CP (i.e., outside the ellipsis site). This is based on the proposals that topic(-like) elements can be base-generated in a CP layer (Chomsky 1991, Lasnik and Stowell 1991, Iatridou 1995), assuming that D-linked *wh*-phrases are topic-like (Rizzi 1990, among others).

In chapter 3, I assumed that every lexical item contains a formal feature matrix (FFM) and a phonological feature matrix (PFM). In narrow syntax, the PFMs of lexical items are empty. When lexical items are sent to PF after Spell-out, segmental content is inserted into their PFMs. Given this, I proposed that what is elided as a result of ellipsis occurring during the derivation is the phonological feature matrices (PFMs) of lexical items inside the ellipsis site. This implies that even though a syntactic operation occurring in narrow syntax cannot look into the information of the segmental content inside the PFMs, it can make reference to PFMs in lexical items.

A consequence of this proposal is that elements which have been deprived of PFMs as a result of ellipsis can take part in further syntactic operations triggered by formal features. This is because elided elements retain their FFMs, even though they lack their PFMs. One important subcase of this consequence is that null operators located inside the ellipsis site at the point of ellipsis must be able to be visible for further formal operations, assuming that null operators contain the FFMs. In support of this, I used sentences with CoPE inside restrictive relative clauses, the comparative deletion construction, and topicalization. This proposal sharply contrasts with Baltin's (2007, 2012) suggestion that once XP ellipsis occurs in overt syntax, every element inside the ellipsis site becomes frozen for further syntactic operations, which is adopted by Albrecht (2010).

I showed that *wh*-phrases whose PFM is eliminated do not seem to be eligible for further formal operations. Due to this, one might claim that the present analysis has an overgeneration problem. However, I proposed that such a case is ruled out by

the independent prosodic requirement in (2), which is based on Richards' (2016) Contiguity Theory.

(2) **Contiguity (modified version)**

Every pair $\langle C, wh\text{-phrase} \rangle$ that stand in an Agree relation must be associated with PFMs $\langle \text{PFM}[C], \text{PFM}[wh\text{-phrase}] \rangle$, such that there is at least one ϕ that contains both of these PFMs, and within which $\text{PFM}[wh\text{-phrase}]$ is Contiguity-prominent.

(3) **Contiguity-prominent**

α is Contiguity-prominent within ϕ if α is adjacent to a prosodically active edge of ϕ .

I also suggested that the prosodic requirement in (2) is calculated at every CP layer during the derivation. If a CP fails to meet the prosodic requirement, then the sentence is ruled out.

In chapter 4, I argued that the proposal advanced in chapter 2 can also explain the asymmetry between Korean and Farsi light verb (LV) stranding ellipsis in extractability out of the ellipsis site. In LV stranding ellipsis in these two languages, the ellipsis site is the complement of the LV generated in v , and the ellipsis licenser is the LV. Nonetheless, Farsi LV stranding ellipsis allows extraction, while Korean one does not. I argued that this contrast is attributable to the existence/absence of a feature that drives head movement of the LV. Consequently, the difference in the timing of

ellipsis (i.e. the points where all the featural requirements of the LV are satisfied) results in the extraction asymmetry.

Additionally, I showed that the proposal that ellipsis is a syntactic operation that eliminates only the PFMs of lexical items inside the ellipsis site, preserving their FFMs, is compatible with Korean LV stranding ellipsis and BrE *do* construction. Specifically, in Korean ECM construction, accusative ECM subjects elided inside the ellipsis site can scope over negation located outside the ellipsis site. Assuming that scope is read off syntactic structure, this indicates that elided elements can move to a place outside the ellipsis site. Korean NPIs elided in the embedded clause can be licensed by a negation expression in the matrix clause. Given that Korean NPIs are subject to the Clause-mate Condition, it can be concluded that NPIs can be moved further after ellipsis for licensing purpose. Similarly, in the BrE *do* construction, quantifier objects which have been elided inside the ellipsis site can scope over sentential negation outside the ellipsis site. This also demonstrates that elements whose PFMs have been eliminated as a result of ellipsis can be visible for further formal operations following ellipsis.

Lastly, I showed that the prosodic constraint in (2) is subject to not only English and Dutch where a *wh*-phrase is forced to be moved to Spec,CP, but also Korean, which is a *wh*-in-situ language. That is, in order for a *wh*-element to establish an appropriate dependency with C containing Q, it must contain its PFM, whether it obligatorily moves to Spec,CP or remains in-situ.

Appendix: Korean CP ellipsis

One of the peculiar properties that East Asian languages such as Japanese and Korean have is that the argument of the verb can freely be omitted, as illustrated in (1).

(1) a. Japanese (Otani and Whitman 1991)

John-wa [zibun-no tegami-o]₁ sute-ta; Mary-mo *e*₁ sute-ta.

John-TOP self-GEN letter-ACC discard-Perf Mary-also discard-Perf

(lit.)‘John threw out his letters, and Mary also threw out.’

b. Korean

John-un [caki-uy ai-lul]₂ honnay-ess-ta; Tom-to *e*₂ honnay-ess-ta

John-TOP self-GEN child-ACC scold-PAST-D Tom-also scold-PAST-D

(lit.)‘John scolded his child, and Tom also scolded.’

The second sentence, containing the null argument, in both (1a) and (1b) is ambiguous: In (1a), what Mary threw out is either John’s letter or Mary’s letter. In (1b), the sentence can mean either that Tom scolded John’s child or that Tom scolded his own child.

The category of null arguments is not restricted to DPs. According to Shinohara (2006), and Saito (2007), embedded CPs also seem to be able to be omitted in Japanese, as illustrated in (2).

- (2) a. Hanako-wa [_{CP} zibun-no teian-ga saiyoosareru-to]₁ omotteiru-ga
 Hanako-TOP self-GEN proposal-NOM be.accepted-C think-though
 Taroo-wa *e*₁ omotte inai.
 Taroo-TOP think not
 ‘Hanako thinks that her proposal will be accepted, but Taroo does not think
 that her/his proposal will be accepted.’
- b. Taroo-ga [_{CP} Hanako-ga hon-o kata-to]₂ itta si,
 Taroo-NOM Hanako-NOM book-ACC bought-C said and
 Ziroo-mo *e*₂ itta.
 Ziroo-also said
 ‘Taroo said that Hanako bought a book, and Ziroo also said that she bought
 a book’ (Saito 2007)

In Korean, the sentence in (3) shows that the complement of the verb *mit* ‘believe’ can freely be omitted. However, the complement of *sayngkak* ‘think’ cannot, as illustrated in (4).

- (3) A: Na-nun [_{CP} Yenghi-ka Toli-lul salangha-n-ta-ko] mit-nun-ta.
 I-TOP Yenghi-NOM Toli-ACC love-PRES-D-C believe-PRES-D
 ‘I believe Yenghi loves Toli.’
- B: Na-to mit-nun-ta.
 I-also believe-PRES-D
 (lit.) ‘I also believe.’ (Chung 2007)

- (4) A: Na-nun [_{CP} Yenghi-ka Toli-lul salangha-n-ta-ko] sayngkak-ha-n-ta.
 I-TOP Yenghi-NOM Toli-ACC love-PRES-D-C think-DO-PRES-D
 ‘I consider/think that Yenghi loves Toli.’
- B: *Na-to sayngkak-ha-n-ta.
 I-also think-DO-PRES-D
 (lit.)‘I also consider/think.’ (Ahn and Cho 2010)

The (un)availability of the elision of the complement of a verb cannot be reduced to whether the verb is a regular verb or a nominal verb, since some nominal verbs allow the elision, in contrast with (3B), while some regular verbs do not, in contrast with (4B). This is illustrated in (5) and (6), respectively.

- (5) A: Mary-nun [_{CP} John-i pemin-i-lako]₂ yeki-ess-ta.
 Mary-TOP John-NOM culprit-COP-C consider-PAST-D
 ‘Mary considered John to be a culprit.’
- B: *Tom-to [_{CP} e]₂ yeki-ess-ta.
 Tom-also consider-PAST-D
 (lit.)‘Tom also considered.’
- (6) A: Mary-nun [_{CP} caki-ka chencay-lako]₂ chakkak-ha-ess-ta.
 Mary-TOP self-NOM genius-C illusion-DO-PAST-D
 ‘Mary was under the illusion that she was a genius.’

B: Tom-to [CP *e*]₂ chakkak-ha-ess-ta.
 Tom-also illusion-DO-PAST-D
 (lit.)‘Tom was also under the elusion.’

To explain the contrast between (3B) and (4B), Ahn and Cho (2009, 2010) propose that there is no CP ellipsis in Korean. Rather, the seemingly elided constituent in (3B) is in fact *pro*, which is anaphoric to the antecedent embedded CP. According to this analysis, there are two types of the verb *sayngkak*. One is interpreted as ‘consider’, and it takes only a CP complement. The other is interpreted as ‘think of’, and this only takes a DP complement. Thus, the reason (4B) is ungrammatical is as follows: assuming that there is no CP ellipsis, the unpronounced constituent in (4B) must be a *pro*. Since *sayngkak* ‘consider/think’ takes a CP complement only, there is no way the sentence in (4B) with the intended meaning can be generated. On the other hand, the reason (3B) is grammatical is that the verb *mit* ‘believe’ can take either a DP or a CP complement without a change in its lexical meaning.

Ahn and Cho’s analysis can be supported by the fact that (3B) and (4B) are parallel with (7B) and (8B) in grammaticality, where *pro* is overtly realized with the pronoun *kukus-ul* ‘it-ACC’.

(7) A: Na-nun [CP Yenghi-ka Toli-lul salangha-n-ta-ko] mit-nun-ta.
 I-TOP Yenghi-NOM Toli-ACC love-PRES-D-C believe-PRES-D
 ‘I believe Yenghi loves Toli.’

B: Na-to kukes-ul mit-nun-ta.
 I-also it-ACC believe-PRES-D
 ‘I also believe it.’

(8) A: Na-nun [_{CP} Yenghi-ka Toli-lul salangha-n-ta-ko] sayngkak-ha-n-ta.
 I-TOP Yenghi-NOM Toli-ACC love-PRES-D-C think-DO-PRES-D
 ‘I think Yenghi loves Toli.’

B: *Na-to kukes-ul sayngkak-ha-n-ta.
 I-also it-ACC think-DO-PRES-D
 ‘I also think it.’

This analysis can also explain why overt elements base-generated inside an embedded CP cannot be extracted out of the ellipsis site, as shown in (9).

(9) A: I chayk-ul₁ Mary-nun [_{CP} Tom-i *t*₁ ilk-ess-ta-ko]₃
 this book-ACC Mary-TOP Tom-NOM read-PAST-D-C
 sayngkak-ha-n-ta / mit-nun-ta.
 think-do-PRES-D believe-PRES-D
 ‘Mary thinks/believes that Tom read this book.’

B: *Ce chayk-ul John-to *e*₃ sayngkak-ha-n-ta. / mit-nun-ta.
 that book-ACC John-also think-do-PRES-D believe-PRES-D
 ‘John also thinks/believes that Tom read that book.’

In the case where the verb is *sayngkak* ‘think’, it cannot take a *pro* complement while maintaining its meaning. Additionally, Korean lacks CP ellipsis. Consequently, there is no way the embedded CP – the complement of *sayngkak* ‘think’ – in (9) can be unpronounced. When the verb is the regular verb *mit* ‘believe’, the embedded CP can be unpronounced, since the verb can take a *pro* complement. Given that *pro* does not have internal structure, it is possible to account for how the phrase *ce chayk* ‘that book’ is extracted from within a proform.

Even though Ahn and Cho’s proposal can account for the (un)grammaticality of the B sentences in (3) and (4), I have several concerns about the proposal that the complement of the verbs in those sentences is *pro*: First, consider the sentence in (10B), where the overt pronoun *kukes* ‘it’ is inserted into the null argument position in (6B).

- (10) A: Mary-nun [_{CP} caki-ka chencay-lako]₂ chakkak-ha-ess-ta.
 Mary-TOP self-NOM genius-C illusion-DO-PAST-D
 ‘Mary was under the illusion that she was a genius.’
- B: *Tom-to kukes-ul chakkak-ha-ess-ta.
 Tom-also it-ACC illusion-DO-PAST-D
 ‘Tom also was under the illusion that she/he was a genius.’

Ahn and Cho’s analysis predicts that (10B) with the overt realization of *pro* would be grammatical, contrary to fact. Thus, the contrast between (6B) and (10B)

demonstrates that whether verbs allow the omission of their complement CP does not fully correlate with whether or not the same verbs can take a DP complement.

Second, it not clear how this analysis can account for the scope facts in the following sentences.

- (11) John-un [_{CP} motun cakpwum-i gacca-lako] mit-ci ani-ha-ess-ta
 John-TOP every work-NOM counterfeit-C believe-CI NEG-do-PAST-D
 ‘John did not believe that every piece of work was counterfeit.’
 (*every > not, ✓not > every)

- (12) A: John-un motun cakpwum-ul₁ [_{CP} t₁ kacca-lako] mit-ci
 John-TOP every work-ACC counterfeit-C believe-CI
 ani-ha-ess-ta
 NEG-do-PAST-D
 ‘John did not believe every piece of work to be counterfeit.’
 (✓every > not, ✓not > every)
- B: Mary-to mit-ci ani-ha-ess-ta.
 Mary-also believe-CI NEG-do-PAST-D
 ‘Mary also did not believe.’ (✓ever > not, ✓not > every)

As shown in (11), when the embedded subject of the ECM verb is nominative marked, only narrow scope of the universal quantifier is available. However, when the ECM subject is accusative marked, the universal quantifier subject can scope over negation

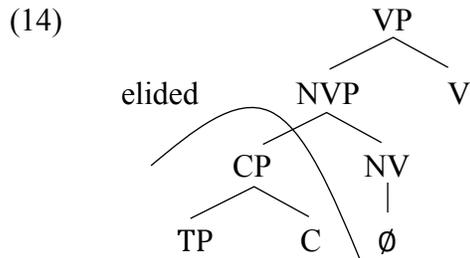
in the matrix CP, as shown in (12A). I have shown in section 4.3.1.1 that this scope interpretation is the result of overt movement of the accusative ECM subject. Interestingly, wide scope of the universal ECM subject is also permitted in (12B). Suppose now that the null argument in (12B) is *pro*, which corresponds to the embedded CP in (12A), as Ahn and Cho suggest. Since the null argument in (12B) is *pro*, and thus, it does not have internal structure, there is no way the universal quantifier subject can be located higher than negation, in order to get the intended interpretation. (For more arguments against Ahn and Cho's analysis, see Park (2009).)

In what follows, I argue that Korean has CP ellipsis, which occurs in narrow syntax, and explore the nature of CP ellipsis, by investigating why only some of the verbs taking a CP complement allow the elision of embedded CP. Baltin (2012) assumes that *so* in English can act as positive verum focus (VF), which denotes agreement in opinion, as in (13), and it projects a maximal projection by itself, called the Verum Focus Phrase (VFP).

- (13) A: I think/guess/hope that Mary can come to the party
B: I think/guess/hope so.

On the basis of Baltin's assumption, I propose here that Korean has an element similar to *so* which is phonologically null, and functions as a VF. It takes a CP complement and expresses the second speaker's certainty about the truth of the proposition made by the first speaker. This element will be referred to as phonologically null verum (NV). Additionally, the NV serves as the licenser of CP

ellipsis. That is, only CPs selected by NV can be elided, while CPs selected by a lexical verb cannot. This is illustrated in (14).



Among the verbs which can take a CP complement, only verbs whose complement CP can be null, such as *mit* ‘believe’ in (3B) and *chakkak* ‘be under the illusion/mistakenly believe’ in (6B), can select NVP. On the other hand, verbs which do not allow their complement to be omitted, such as *sayngkak* ‘think’ in (12B) and *yeki* ‘consider’ in (5B), cannot take an NVP complement. Based on this, the subcategorization frames of the verbs above are given in (15).

- (15)
- a. *mit* ‘believe’ [___ DP / CP / NVP]
 - b. *sayngkak* ‘think’ [___ CP]
 - c. *yeki* ‘consider’ [___ CP]
 - d. *chakkak* ‘be under the illusion/mistakenly believe’ [___ CP / NVP]

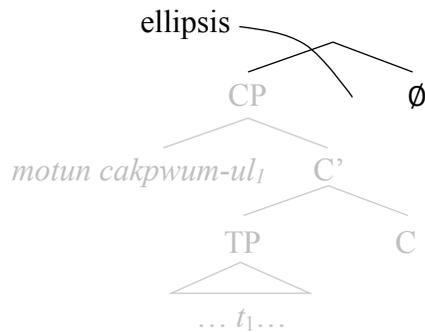
This is why, on the current account, only some verbs which take a CP complement allow CP ellipsis – it is the NV that licenses CP ellipsis, and only some verbs can take an NVP complement. Consequently, it is idiosyncratic properties of the

subcategorization frame (or, c-selection properties in Grimshaw's (1979) terms) of lexical items that determine if verbs can take a NVP complement. Unfortunately, from the perspective of semantics, I cannot find any reason why *sayngkak* 'think' and *yeki* 'consider' cannot take a NVP complement. I will leave this issue to future research.

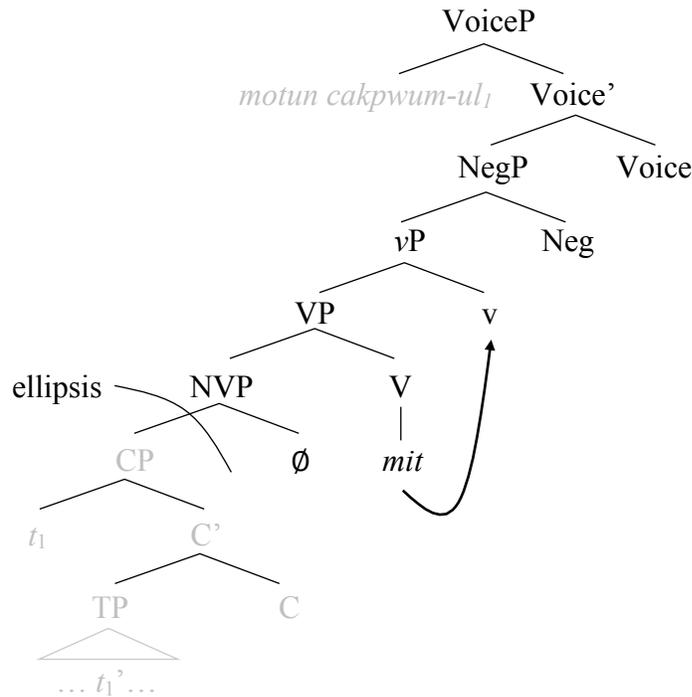
Assume that CP ellipsis occurs using the same mechanism developed throughout this dissertation, and that the NV that licenses CP ellipsis is not a phase head. Then, the unavailability of extraction out of the ellipsis site in (9B) (when the matrix verb is *mit* 'believe'), and the scope fact in (12B) (where the quantifier elided inside the ellipsis site can take scope over negation in the matrix clause) can be accounted for in a uniform way. There are two putative featural requirements that the licensor might bear – the classic EPP and an uninterpretable inflectional feature that motivates head movement. First, if the NV contained the classic EPP, it is erroneously predicted that (3B) and (6B) would not be generated. This is because no element containing the D-feature is located in the specifier position of the NV. Second, it is not clear if the NV contains an uninterpretable feature triggering head movement. Suppose that it contains a feature that drives head movement. In section 4.2.1.2, I argued that regular verbs undergo movement to v , but not as high as Appl (see (21-23) in that section, and the surrounding discussion). This indicates that an uninterpretable feature on the NV would have to be deleted before Voice is introduced into the derivation, even if the NV underwent head movement, since the movement in question terminates lower than the Voice head. This discussion entails that the elision of CP, which is selected by the NV, must occur before Voice enters

the derivation. If this is so, we can conclude that an element base-generated inside the embedded CP cannot be located outside the ellipsis site at the point of ellipsis (i.e. before Voice enters the syntactic structure). Due to this, a moving element's PFM would be eliminated along with the PFMs of the rest of the embedded CP. As a result, an element extracted from this CP can never be pronounced outside the ellipsis site. Nonetheless, the element that has been deprived of the PFM can take part in further formal operations occurring after ellipsis in narrow syntax. Thus, the elided element may move to a position higher than negation in the matrix clause, and wide scope of the universal quantifier would then become available. This is illustrated in (16).

(16) a. STEP 1: Introduction of the VF to the derivation and CP ellipsis



b. STEP 2: Movement of the elided element to the matrix clause



To recapitulate, I have argued that Korean has CP ellipsis. However, CP ellipsis is possible only when the CP is selected by NV, which functions as the licenser of CP ellipsis. On the other hand, CPs selected directly by embedding verbs cannot be elided. Additionally, since only a subset of verbs which can take a CP complement can select NVP, not all embedded CPs can be elided. This section also shows that even though an element base-generated inside the embedded CP (which is selected by NV) cannot be pronounced outside the ellipsis site, it can undergo movement after its PFM is eliminated as a result of the elision of the embedded CP.

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