

Extra deletion in fragment answers and its implications

Duk-Ho An¹

Received: 22 January 2015 / Accepted: 30 March 2016 / Published online: 12 July 2016
© Springer Science+Business Media Dordrecht 2016

Abstract In this paper, I examine a phenomenon in Korean involving fragment answers and consider its implications. Taking as a point of departure the generalization that case markers on ellipsis remnants in fragment answers can be omitted only in string-final position, I argue that in these situations, PF deletion extends into the ellipsis remnant, deleting parts of it, such as a case marker, a postposition or, sometimes, even the head noun, up to recoverability and under adjacency to a string of elements that are deleted in PF for independent reasons. This parasitic deletion process, which I term “extra deletion,” sheds light on the nature of PF deletion, which I argue operates on strings of elements, similarly to the way that syntactic operations target constituents. The crucial idea is that, although it is mostly syntax that determines what is to be deleted (and, thus, elements that undergo ellipsis are usually syntactic constituents), PF deletion also has its own guidelines when it applies—namely that elements that are elided should form an unbroken, continuous string. What is interesting is that in contexts of extra deletion, the string of deleted elements is extended beyond what is initially marked for deletion by syntax, an important consequence of which is that PF deletion can ignore syntactic constituents. Furthermore, I make the novel observation that there exists a significant parallelism between fragment answers and right node raising, which has not been noted in the literature due to the sheer differences in their structure, surface form, and use. I argue that postulating extra deletion allows us to capture the parallelism straightforwardly, which in turn provides an additional argument for the PF deletion analysis of the latter construction, for which there have been several alternatives.

✉ Duk-Ho An
andukho@konkuk.ac.kr

¹ Department of English, Konkuk University, 120 Neungdong-ro, Gwangjin-gu, Seoul 05029, South Korea

Keywords Fragment answers · Right node raising · PF deletion · Ellipsis · String deletion · Case marker · Constituency

1 Introduction

In the past decade or so, various ellipsis phenomena, in particular fragment answers (FA), have received much attention in the literature, which has deepened our understanding of the nature of the interaction between syntax and other components of grammar. This is also true for the literature on Korean, where there have been extensive discussions on the construction in question. (See Ahn 2012; Ahn and Cho 2011; Ku and Cho 2014; Park 2005a, b, 2013; Park and Oh 2014; Park and Shin 2014, among others.) (1) is an example of FA in Korean.

- (1) nwu-ka John-ul manna-ss-ni?¹
 who-Nom J.-Acc meet-Past-Q
 ‘Who met John?’
 → Mary-ka.
 M.-Nom
 ‘Mary (met John).’²

Concerning the derivation of FA, Merchant’s (2004) analysis, where the remnant undergoes focus movement to the left periphery followed by PF deletion of the rest of the clause, has been very influential in the literature.³ Thus, under the Merchant-style analysis of FA in Korean, advocated by several researchers, the FA in (1) will be derived as in (2).

- (2) [_{FP} Mary-ka_i [_{TP} ~~t_j John-ul manna-ss-e~~]
 M.-Nom J.-Acc meet-Past-Dec

In this paper, taking as a point of departure the generalization that case markers on ellipsis remnants in FA can be omitted only in string-final position, I argue that in these situations, PF deletion extends into the ellipsis remnant, deleting parts of it, such as a case marker, a postposition or, sometimes, even the head noun, up to recoverability and under adjacency to a string of elements that are deleted in PF for

¹ FAs are usually used as an answer to a question and are casual in style. Note that in Korean, the speech level (or the degree of politeness) is morphologically indicated. For instance, in (1), the question marker *ni* is indicative of the casual speech level.

² Elements in parentheses indicate the interpretation of the elided part of the sentence.

³ As an alternative analysis of FA, there is also the so-called “direct interpretation” analysis proposed by researchers like Yanofsky (1978) and Stainton (2006). According to this analysis, FAs are generated as they are on the surface, i.e., as non-sentential utterances, and are licensed pragmatically. However, it seems fair to say that the Merchant-style analysis of FA is virtually the standard in the recent literature. Furthermore, the parallelism between FA and right node raising, discussed below, makes it difficult to maintain those alternative analyses of FA that do not employ PF deletion, such as the direct interpretation analysis. Given this, I will not be concerned with such alternatives in this paper.

independent reasons. I argue that this parasitic deletion process, which I term “extra deletion” (ED), sheds light on the nature of PF deletion. More specifically, I suggest that PF deletion operates on strings of elements, similarly to the way that syntactic operations target constituents. Thus, to be well-formed, deleted elements in PF should form an unbroken, continuous string. The crucial idea is that although it is mostly syntax that determines what is to be deleted and, thus, elements that undergo ellipsis are usually syntactic constituents, PF-deletion also has its own guidelines when it takes place, among which is the requirement that deleted elements form an unbroken, continuous string. An interesting consequence of this is that the string of deleted elements can sometimes be extended beyond what is initially marked for deletion by syntax, a situation that I call extra deletion. As a consequence, PF deletion can sometimes ignore syntactic constituents (although, in many cases, the deleted material does correspond to a constituent). The way in which ED works can be schematically represented as in (3). Note that, in a situation like this, only a bare NP (i.e., an NP without a case marker) will surface as a result.

- (3) NP-case marker [~~rest of the clause~~] basic PF deletion (clausal ellipsis in FA)
- ←
- NP-case marker [~~rest of the clause~~] PF deletion extended into the remnant (ED)
- ← ←

Furthermore, I make the novel observation that there exists a significant parallelism between FA and right node raising (RNR), which has not been noted in the literature due to the sheer differences in their structure, surface form, and use. More specifically, I show that RNR behaves exactly the same as FA with respect to the omission of case markers, postpositions, and head nouns, and that it is also subject to the same kind of adjacency requirement as FA. I argue that postulating ED allows us to capture the parallelism straightforwardly, which in turn provides an additional argument for the PF deletion analysis of the latter construction, for which there have been several alternatives.

This paper is organized as follows: in Sect. 2, as a point of departure for our discussion, I introduce and revise Park’s (2013) generalization concerning the distribution of case markers in FA; in Sect. 3, based on a set of new data, I argue that omission of case markers in FA should be distinguished from the phenomenon of case marker drop in Korean, which naturally leads to the question about the real nature of the omission phenomenon in question; in Sect. 4, I propose an answer to the questions raised in the previous sections, introducing ED; in Sect. 5, I elaborate on aspects of ED; in Sect. 6, I show that there is a parallelism between FA and RNR and consider its implications; in Sect. 7, I elaborate on the current analysis and further consider its consequences; Sect. 8 concludes.

2 The distribution of case markers in FA

In this section, I will introduce Park's (2013) generalization on the distribution of bare NPs in FA, which will serve as a point of departure for our discussion. I will show that, although Park's generalization is basically on the right track, it can be refined further to accommodate a wider range of data.

First, note that the remnant in (1), repeated below, is a case-marked NP.

- (4) nwu-ka John-ul manna-ss-ni?
 who-Nom J.-Acc meet-Past-Q
 'Who met John?'
 → Mary-ka.
 M.-Nom
 'Mary (met John).'

Interestingly, the utterance is still perfectly fine even if the remnant is without the case marker.

- (5) nwu-ka John-ul manna-ss-ni?
 who-Nom J.-Acc meet-Past-Q
 'Who met John?'
 → Mary.
 M.
 'Mary (met John).'

Concerning this, it has been noted that the omission of case markers in FA is restricted in an interesting way. In particular, dealing with multiple FA contexts, Park (2013) proposes the generalization in (6).⁴

- (6) Multiple FA Generalization
 Multiple FAs that have the form of [NP-marker, NP-marker/-Ø]
 are acceptable, but not [NP-Ø, NP-marker/-Ø]. (Park 2013, p. 461)

What this means is that, when there are two remnant NPs, the first NP cannot be bare, while the second NP can. In fact, the first NP cannot be bare *at all* regardless of whether the second NP is case-marked or bare. This correctly captures the distribution of the case markers in (7).

⁴ A comment on the terminology is necessary here. Note that, in (6), Park uses the term "marker" instead of "case marker." This is because the generalization in (6) is supposed to apply to cases involving omission of postpositions as well, as discussed below. Thus, in Park's work, the term *marker* seems to be a cover term for postnominal elements like case markers and postpositions.

- (7) nwu-ka nwukwu-lul manna-ss-ni?
 who-Nom who-Acc meet-Past-Q
 ‘Who met whom?’
 → a. Cho-ka Yang-ul.
 C.-Nom Y.-Acc
 ‘Cho (met) Yang.’
 b. Cho-ka Yang.
 c. * Cho Yang-(ul).

Consider also the contrast in (8). These examples show that, when a remnant NP is followed by an adverbial remnant, the remnant NP cannot be bare either.

- (8) nwu-ka encey wa-ss-ni?
 who-Nom when come-Past-Q
 ‘Who came when?’
 → a. Yang-i ecey.
 Y.-Nom yesterday
 ‘Yang (came) yesterday.’
 b. ?*Yang ecey. (adapted from Park and Oh 2014)

Note, incidentally, that Park’s generalization, as formulated in (6), may not be directly applied to a case like (8), because it involves an adverb, not an NP. Given this, (6) can be revised (tentatively) as in (9).

- (9) Multiple FA Generalization (revised; tentative)
 Multiple FAs that have the form of [NP-marker, XP] are acceptable,
 but not [NP-∅, XP].

Note here that the number of remnants in FA need not be limited to two. Consider, for instance, (10a) and (10b).

- (10) a. nwu-ka nwukwu-eykey mwues-ul cwu-ess-ni?
 who-Nom who-Dat what-Acc give-Past-Q
 ‘Who gave what to whom?’
 → Cho-ka Yang-eykey chayk-ul.
 C.-Nom Y.-Dat book-Acc
 ‘Cho (gave) Yang a book.’
 b. nwu-ka nwukwu-eykey mwues-ul encey cwu-ess-ni?
 who-Nom who-Dat what-Acc when give-Past-Q
 ‘Who gave what to whom when?’
 → Cho-ka Yang-eykey chayk-ul ecey.
 C.-Nom Y.-Dat book-Acc yesterday
 ‘Cho (gave) Yang a book yesterday.’

The pattern of omission of case markers in these examples can be summarized as in (11).

- (11) a. Cho-*(ka) Yang-*(eykey) chayk-(ul). (cf. (10a))
 b. Cho-*(ka) Yang-*(eykey) chayk-*(ul) ecey. (cf. (10b))

The distribution of the case markers in (11) clearly indicates that, regardless of how many remnants are involved, non-final remnant NPs cannot be bare. This is further confirmed by the fact that when a non-final remnant NP is reordered to final position, it suddenly can be bare, as shown in (12).

- (12) Cho-*(ka) Yang-*(eykey) ecey chayk-(ul). (cf. (11b))

Given this, I propose a revised version of Park's generalization as in (13).

- (13) Periphery-sensitivity of Bare NPs in FA
 Bare NPs in FA should be in final position.

(13) correctly captures the distribution of bare NPs in all the examples examined so far. For instance, in (11a), the NP *chayk-ul* is the final element in the sequence and can therefore be bare, while the same NP in (11b) cannot, because it is not the final element. Note also that, unlike (6) and (9), (13) is not limited to multiple FA contexts. Therefore, cases that involve a single remnant, as in (4)/(5), repeated below, are also subsumed under (13), because, in such contexts, the remnant is necessarily in final position.

- (14) nwu-ka John-ul manna-ss-ni?
 who-Nom J.-Acc meet-Past-Q
 'Who met John?'
 → Mary-(ka).
 M.-Nom
 'Mary (met John).'

To summarize, I have argued in this section that there is a way to sharpen Park's generalization in a way that retains his original insight, while allowing it to be extended to all the relevant cases without making additional assumptions. The revised version improves on its predecessor in that it is simpler and, most crucially, can be extended to a larger set of data that go beyond the boundary of FA, as shown below.

3 Bare NP remnants and case marker drop

Given the discussion in Sect. 2, a question naturally arises concerning the nature of the omission phenomenon of case markers in FA. We should also ask why the omission of case markers manifests periphery sensitivity in the way that the

generalization in (13) describes. Given this, it should be pointed out that omission of case markers is actually a well-known property of Korean. For instance, the examples in (15) illustrate that the three main types of case markers in Korean can all be omitted even outside the context of FA. (Following the usual practice, I will refer to this phenomenon as “case marker drop”. See Ahn 1999; Ahn and Cho 2007; An 2009, 2014; Bak 2006; Choi 2009; Hong 1994, 2004; Kim 1998, among others, for relevant discussion and references.)

- (15) a. Cho-nun ku chayk-(ul) sa-ss-ta.
C.-Top that book-Acc buy-Past-Dec
'Cho bought that book.'
- b. Cho-(ka) ecey wa-ss-ta.
C.-Nom yesterday come-Past-Dec
'Cho came yesterday.'
- c. Cho-(uy) chayk
C.-Gen book
'Cho's book'

What is of significance to our discussion is the fact that case marker drop is not free. Thus, there are several contexts that are known to prohibit case marker drop. For instance, when an object comes before a subject, the subject may not be bare, as shown in (16a). Numerals in prenominal position must bear the genitive case marker *uy*, as shown in (16b). Indefinite, non-specific subjects cannot be bare either, as shown in (16c).

- (16) a. ppang-un Cho-*(ka) mek-ess-ta.
bread-Top C.-Nom eat-Past-Dec
'Cho ate the bread.' (Ahn 1999)
- b. sey-kwen-*(uy) chayk
three-CL-Gen book
'three books' (An 2009)
- c. chayk-*(i) seysang-ul pakkwun-ta.
book-Nom world-Acc change-Dec
'Books change the world.' (Hong 1994)

Crucially, however, the configurations in (16) allow the relevant case markers to be omitted when used in FA contexts. Thus, in (17)–(19), the elements *Cho*, *sey-kwen*, and *chayk* are all used without a case marker, although they occur precisely in the configurations that do not allow case marker drop, as shown above.

- (17) ppang-un nwu-ka mek-ess-ni?
bread-Top who-Nom eat-Past-Q
'Who ate the bread?'
- ppang-un Cho.
bread-Top C.
'Cho (ate) the bread.'

- (18) Cho-nun myech-kwen-uy chayk-ul ilk-ess-ni?
 C.-Top how many-CL-Gen book-Acc read-Past-Q
 ‘How many books did Cho read?’
 → Cho-nun sey-kwen.
 C.-Top three-CL
 ‘Cho (read) three (books).’
- (19) mwues-i seysang-ul pakkwu-ess-ni?
 what-Nom world-Acc change-Past-Q
 ‘What changed the world?’
 → chayk.
 book
 ‘Books (changed the world).’

This is crucial evidence that, in the examples of FA involving bare NP remnants, we are dealing with a process totally different from ordinary instances of case marker drop.^{5,6}

⁵ There have been several proposals concerning the nature of case marker drop. To name a few: Ahn (1999), Ahn and Cho (2007) argue that clause-initial caseless NPs are a kind of topic; Hong (1994, 2004) argues that caseless NPs undergo incorporation into the predicate; Bak (2006), focusing on the genitive case marker, argues that caseless NPs receive inherent case, which is realized by a null case marker.

It is clear, however, that these analyses are not applicable to the cases at hand. For instance, given that FAs are typically assumed to be a focus, generating them as a bare topic will not be an option. Furthermore, since we are dealing with ellipsis remnants, there is nothing for the bare noun to incorporate into. It is also very unlikely that numerals are assigned inherent case. Furthermore, under all these analyses, it would not be clear why bare NPs in FA are limited to final position. In any case, given that we are not dealing with ordinary instances of case marker drop, I will not be concerned with these analyses any more in this paper.

⁶ An anonymous reviewer points out that (18) is not conclusive evidence that omission of case markers in FA is different from case marker drop, because numerals like *sey-kwen* ‘three-CL’ can be used alone without a noun head in non-elliptical contexts, as in (i).

- (i) Cho-nun sey-kwen ilk-ess-e.
 C.-Top three-CL read-Past-Dec
 ‘Cho read three (books/magazines/novels, etc.).’

Though I agree that (i) is possible, there are a couple of things to note. First, the meaning of the numeral in cases like (i) is highly context dependent, as indicated in the glosses. Thus, the sentence is not natural in an out-of-the-blue context and cannot be used as a starter of a conversation. This suggests that an additional element, such as a null pronoun, may be involved in (i). In fact, concerning cases like (i), I argued independently in An (2013) that they arise via null pronominalization from a quantifier float construction, as illustrated in (ii).

- (ii) Cho-nun chayk-ul sey-kwen ilk-ess-e. → Cho-nun pro sey-kwen ilk-ess-e.
 C.-Top book-Acc three-CL read-Past-Dec
 ‘Cho read three books.’

Recall that in (18), we are dealing with a context of question-answer pair. The basic assumption under the movement and deletion analysis of FA is that there is a structural parallelism between the pair so that deletion is possible. Furthermore, it is well-known that pronominal genitive numerals and quantifier float structures differ in their interpretation (Kang 2002). Therefore, it is reasonable to assume that the FA in (18) is derived by PF deletion in the way suggested in (26d) below. See also Sect. 5.4 for further discussion on similar cases.

There is an additional reason to conclude that the omission phenomenon captured by the generalization in (13) is not to be equated with case marker drop. That is, not only case markers, but also postpositions can be omitted from remnants in FA. Crucially, when postpositions are so omitted, they also behave in accordance with (13). For instance, (20b) shows that a postposition like *eyse* ‘from/at’ can be omitted in FA contexts, while the same postposition resists omission if it occupies a non-final position, as shown by the contrast in (21). The examples in (22) and (23) further confirm this.

- (20) Cho-ka eti-eyse cenhwa-lul ha-ess-ni?
 C.-Nom where-from phone call-Acc do-Past-Q
 ‘From where did Cho make a phone call?’
 → a. suthapeksu-eyse.
 Starbucks-from
 ‘(Cho called) from Starbucks.’
 b. suthapeksu.
- (21) Cho-ka eti-eyse nwukwu-eykey cenhwa-lul ha-ess-ni?
 C.-Nom where-at who-to phone call-Acc do-Past-Q
 ‘Where did Cho make a phone call to whom?’
 → a. suthapeksu-eyse Yang-(eykey).
 Starbucks-at Y.-to
 ‘At Starbucks to Yang.’
 b. * suthapeksu Yang-(eykey).
- (22) nwu-ka mwue-lo changmwun-ul kkay-ess-ni?
 who-Nom what-with window-Acc break-Past-Q
 ‘Who broke the window with what?’
 → a. Cho-ka mangchi-lo.
 C.-Nom hammer-with
 ‘Cho (broke the window) with a hammer.’
 b. Cho-ka mangchi.
 c. * Cho mangchi-(lo).
- (23) Cho-ka mwue-lo mwues-ul kkay-ess-ni?
 C.-Nom what-with what-Acc break-Past-Q
 ‘What did Cho break with what?’
 → a. mangchi-lo changmwun-ul
 hammer-with window-Acc
 ‘(Cho broke) a window with a hammer.’
 b. mangchi-lo changmwun
 c. * mangchi changmwun-(ul)

In sum, I have established in this section that omission of case markers in FA is not the same phenomenon as case marker drop, because the omission phenomenon in question is available even in contexts that do not allow case marker drop. I have

also shown that it can apply to postpositions and head nouns.⁷ It is important that, in all these cases, the generalization in (13) is at work. The obvious question then is what the nature of this omission phenomenon is and why it behaves in the way (13) describes. I propose an answer to these questions in the next section.

4 Analysis: extra deletion

Let us answer the questions raised at the end of Sect. 3. Recall two things: first, in FA contexts, parts of a remnant can be omitted only if the remnant occupies final position; second, PF deletion is involved in deriving FA. Given this, I propose that in the relevant FA contexts with a bare NP remnant, we are dealing with a situation where PF deletion extends into the ellipsis remnant, deleting parts of it, such as a case marker, a postposition or, sometimes, even the head noun. As mentioned at the outset, I refer to this process as ED. Thus, what happens in ED contexts is that the string of deleted elements is extended (or stretched) into the remnant, as was illustrated in (3), repeated below.

- (24) NP-case marker [~~rest of the clause~~] basic PF deletion (clausal ellipsis in FA)
- ←
- NP-case marker [~~rest of the clause~~] PF deletion extended into the remnant (ED)
- ← ←

ED is an optional deletion process that applies to parts of an ellipsis remnant up to recoverability and under adjacency to a string of elements that are deleted in PF for independent reasons, such as deriving FA. Given the latter property, we can say that ED is parasitic in nature, i.e., it can only take place when there is an element that independently undergoes PF deletion. Furthermore, from the adjacency requirement, it follows that deleted elements should form an unbroken, continuous string. (I will elaborate on these properties in subsequent sections.)

To avoid confusion, I should mention here that ED is not supposed to be an additional, brand-new deletion operation. Rather, there is just one type of PF deletion as before. What I am proposing here is that, in applying the good old PF deletion, we can sometimes delete “a bit more,” extending the deletion string into the remnant. This is what I mean by ED. Thus, the term ED is just a mnemonic device that I will be using to refer to situations like this, i.e., cases where PF deletion is extended beyond the original target and into the remnant, sometimes disregarding syntactic constituency, as will be shown below. I will discuss further details of the nature of ED and their implications in the sections that follow.

Under this analysis, the omission of the case marker in (14), for instance, will proceed as in (25). (In what follows, I will use ~~italicized bold strikethrough~~ for elements that undergo ED and ~~italicized strikethrough~~ for elements that undergo

⁷ The latter case is illustrated by (18). See (26d) for further details. See also the discussion in Sect. 5.4.

standard PF deletion in order to make the distinction visually more prominent. Where such distinction is not crucial, I will use the regular strikethrough notation for deleted material.)

- (25) Mary-~~ka_i~~ [_{TP} ~~t_i~~ John ul ~~manna ss e~~]
 M.-Nom J.-Acc meet-Past-Dec
 ‘Mary (met John).’

Here, the elements in TP are deleted as part of the standard PF deletion process for deriving FA, while the case marker on the remnant NP is EDED. The same applies to all the grammatical cases examined above. I repeat the relevant examples below.

- (26) a. Cho-ka_i Yang-~~ul_j~~ [_{TP} ~~t_i t_j manna ss e~~] (= (7b))
 C.-Nom Y.-Acc meet-Past-Dec
 ‘Cho (met) Yang.’
- b. Cho-ka_i Yang-eykey_j chayk-~~ul_k~~ [_{TP} ~~t_i t_j t_k ewu ess e~~] (= (10a))
 C.-Nom Y.-Dat book-Acc give-Past-Dec
 ‘Cho (gave) Yang a book.’
- c. ppang-un Cho-~~ka_i~~ [_{TP} ~~t_i e mek ess e~~]⁸ (= (17))
 bread-Top C.-Nom eat-Past-Dec
 ‘Cho (ate) the bread.’
- d. Cho-nun [sey-kwen-~~uy chayk ul_i~~] [_{TP} ~~e t_i ilk ess e~~]⁹ (= (18))
 C.-Top three-CL-Gen book-Acc read-Past-Dec
 ‘Cho (read) three (books).’
- e. chayk-~~i_i~~ [_{TP} ~~t_i seysang ul pakkwu e~~] (= (19))
 book-Nom world-Acc change-Dec
 ‘Books (change the world).’
- f. suthapeksu-~~eyse_i~~ [_{TP} ~~Cho ka t_i eenhwa lul ha ess e~~] (= (20b))
 Starbucks-from C.-Nom phone call-Acc do-Past-Q
 ‘(Cho called) from Starbucks.’
- g. Cho-ka_i mangchi-~~lo_j~~ [_{TP} ~~t_i t_j changmwun ul kkay ess e~~] (= (22b))
 C.-Nom hammer-with window-Acc break-Past-Dec
 ‘Cho (broke the window) with a hammer.’
- h. mangchi-lo_i changmwun-~~ul_j~~ [_{TP} ~~Cho ka t_i t_j kkay ess e~~] (= (23b))
 hammer-with window-Acc C.-Nom break-Past-Dec
 ‘(Cho broke) a window with a hammer.’

⁸ A comment is necessary concerning (26c, d). Here, I assume that the topic-marked initial elements have nothing to do with the focus movement involved in deriving FA. Given the usual assumption about the rich CP system (à la Rizzi 1997), I assume that the topic-marked elements reside in TopicP, which is standardly assumed to be higher than FocusP. Thus, I indicated the clausal-internal positions corresponding to the topic elements as *e*. Whether they are derived by movement or base-generation is tangential to the current discussion.

⁹ In (26d), I assume that what undergoes focus movement is the whole DP *sey-kwen-uy chayk* ‘three books,’ not just the genitive-marked numeral *sey-kwen-uy* as Korean does not allow left branch extraction. Therefore, (26d) exemplifies a case where the head noun (along with the case markers) is EDED. See Sect. 5.4 for further discussion.

One important property to note from the representations in (25) and (26) is that the deleted material forms a continuous string. Thus, the struckthrough portion of the sentence looks like a straight line. I suggest that this is an important property of PF deletion, which is one of the factors determining its well-formedness. I will return to this shortly below.

5 On the nature of ED

Before moving on to consider the implications of the current analysis, let me elaborate on a few things about ED in this section.

5.1 Strings in PF

I suggested above that ED applies up to recoverability to parts of an ellipsis remnant when the remnant is adjacent to the elements that are deleted in PF for independent reasons. In a sense, what ED does is “stretch” a deletion string. Thus, for a case marker (or other elements) to undergo ED, it has to be adjacent to other elements that are independently deleted, so that it can be part of the deletion string. (See also Mukai 2003; An 2007, among others, for “PF string deletion”.) As a result, the entire deleted material will form an unbroken string (or a straight line), as pointed out at the end of the previous section. I suggest that this is because PF deletion operates on strings of elements, in a manner similar to the way that syntactic operations operate on constituents.

As mentioned before, it is mostly syntax that determines what is to be deleted and, as a result, elements that undergo ellipsis are usually syntactic constituents. However, PF deletion also has its own guidelines—namely, elements that are elided should form an unbroken string. Furthermore, the string of deleted elements can be extended beyond what is initially marked for deletion by syntax (ED). Consequently, PF deletion can sometimes ignore syntactic constituents (though, in many cases, the deleted material does correspond to a constituent). I think this is plausible, because in phonology, notions like adjacency and linearity play an important role.¹⁰ (See also Sect. 7.1 for further discussion on this point.)

Another important consequence of this is the periphery-sensitivity generalization in (13), repeated below.

- (27) Periphery-sensitivity of Bare NPs in FA
 Bare NPs in FA should be in final position.

That is, the periphery-sensitivity generalization proposed in Sect. 2 derives from the inherent property of PF deletion that it operates on strings of elements. This also allows us to understand why the ungrammatical instances of ED above are

¹⁰ Note that units in phonology (e.g., intonational phrases) often do not correspond to a syntactic constituent. However, there does not seem to be any case where discontinuous elements form a single phonological unit.

ungrammatical. I repeat the relevant examples below. (For ease of exposition, traces are not indicated.)

- (28) a. * Cho-~~ka~~ Yang-~~ul~~ ~~manna-ss-e~~. (= (7c))
 C.-Nom Y.-Acc meet-Past-Dec
- b. * Yang-~~i~~ ecey ~~wa-ss-e~~.¹¹ (= (8b))
 Y.-Nom yesterday come-Past-Dec
- c. * Cho-~~ka~~ Yang-~~eykey~~ chayk-~~ul~~ ~~ewu-ess-e~~. (= (11a))
 C.-Nom Y.-Dat book-Acc give-Past-Dec
- d. * Cho-~~ka~~ Yang-~~eykey~~ chayk-~~ul~~ ecey ~~ewu-ess-e~~. (= (11b))
 C.-Nom Y-Dat book-Acc yesterday give-Past-Dec
- e. * suthapeksu-~~eyse~~ Yang-~~eykey~~ Cho-~~ka~~ ~~eenhwa-lul~~ ~~ha-ess-e~~. (= (21b))
 Starbucks-at Y.-Dat C.-Nom phone call-Acc do-Past-Dec
- f. * Cho-~~ka~~ mangchi-~~to~~ ~~changmwun-ul~~ ~~kkay-ess-e~~. (= (22c))
 C.-Nom hammer-with window-Acc break-Past-Dec
- g. * mangchi-~~to~~ changmwun-~~ul~~ ~~Cho-ka~~ ~~kkay-ess-e~~. (= (23c))
 hammer-with window-Acc C.-Nom break-Past-Dec

Here, the deletion string is discontinuous because the case markers and postpositions undergoing ED are not contiguous to the elements that are deleted for the purpose of deriving FA. Not being contiguous to the deletion string, these elements eventually show up in non-final position, which was the aspect that the generalization above (and its predecessors) paid attention to.

5.2 ED is parasitic

ED is parasitic. Only when there is PF deletion can there be ED. This has to be the case, because what happens in ED contexts is that a deletion string is extended. Therefore, there has to be a string of deleted elements in the first place. This is readily confirmed by the fact that applying ED without concomitant PF deletion renders the examples in (17)–(19) completely ungrammatical, as shown below. Recall that these examples involve contexts that disallow case marker drop, though

¹¹ An anonymous reviewer raises a question about the ungrammaticality of (28b) (and other similar cases where the subject remnant cannot be bare). His/her point is this: as was shown in (15b), repeated below as (i), subjects can in principle allow case marker drop. If that is correct, why can't we simply apply case marker drop to the subject in (28b), instead of resorting to ED, which will avoid the problem of discontinuity of deletion?

- (i) Cho-(ka) ecey wa-ss-ta.
 C.-Nom yesterday come-Past-Dec
 'Cho came yesterday.'

It is correct that an independent sentence like (i) is possible with a bare subject. However, there is an important difference between (28b) and (i). That is, caseless subjects like that in (i) are standardly assumed to be a kind of topic, base-generated in its surface position, say, TopP Spec. (See Ahn 1999; Bak 2006; Choi 2009; Hong 1994, 2004; Kim 1998, among others, for relevant discussion.) However, (28b) is supposed to be an answer to a question. Therefore, the subject NP here is a focus and undergoes movement to a focus position. As such, it does not have the same option as the bare subject in (i).

the relevant case markers can be omitted in FA contexts, i.e., when PF deletion takes place.

- (29) a. ppang-un nwu-ka mek-ess-ni?
bread-Top who-Nom eat-Past-Q
'Who ate the bread?'
→ * ppang-un Cho-~~ka~~ mek-ess-e.
bread-Top C.-Nom eat-Past-Dec
'Cho (ate) the bread.'
→ ppang-un Cho. ((17))
- b. Cho-nun myech-kwen-uy chayk-ul ilk-ess-ni?
C.-Top how many-CL-Gen book-Acc read-Past-Q
'How many books did Cho read?'
→ * Cho-nun sey-kwen-~~uy~~ chayk-ul ilk-ess-e.
C.-Top three-CL-Gen book-Acc read-Past-Dec
'Cho (read) three (books).'
→ Cho-nun sey-kwen. ((18))
- c. mwues-i seysang-ul pakkwu-ess-ni?
what-Nom world-Acc change-Past-Q
'What changed the world?'
→ * chayk-~~i~~ seysang-ul pakkwu-ess-e.
book-Nom world-Acc change-Past-Dec
'Books changed the world.'
→ chayk. ((19))

5.3 Variations in the availability of ED

Consider the contrast between (30) and (31). In (30b), the genitive case marker on the remnant is omitted. However, a seemingly equivalent construction is not allowed in English, as shown by the ungrammaticality of (31b).

- (30) nwukwu-uy cha-lul Cho-ka sa-ss-ni?
who-Gen car-Acc C.-Nom buy-Past-Q
'Whose car did Cho buy?'
→ a. Yang-uy.
Y.-Gen
'(Cho bought) Yang's (car).'
b. Yang.
- (31) Whose car did you take?
→ a. John's.
b. * John. (Ahn and Cho 2011, pp. 31–32)

There are a couple of possibilities to consider concerning this contrast. First, it may be that ED is a language-particular rule of Korean, and that English does not allow it.¹² Another possibility is that ED is available in all languages, but can be blocked by independent factors. For instance, it might be that in (31b), ED is not possible due to incorporation of *ś*.¹³

Given the latter suggestion, it is also interesting to note that in cases like (18), repeated below as (32), ED may not apply to the classifier *kwen*, though it seems recoverable from an antecedent in the preceding utterance. I assume, following several researchers (Cheng and Sybesma 1999; Choi 2011; Saito et al. 2008; Simpson 2005, among others), that the classifier cliticizes or incorporates onto the numeral and that this prevents ED from applying to the classifier alone.^{14,15}

- (32) Cho-nun myech-kwen-uy chayk-ul ilk-ess-ni?
 C.-Top how many-CL-Gen book-Acc read-Past-Q
 ‘How many books did Cho read?’
 → Cho-nun sey-kwen.
 C.-Top three CL
 ‘Cho (read) three (books).’
 → * Cho-nun sey.

In a similar vein, an anonymous reviewer points out that in cases like (33), the complementizer *ko* and the declarative marker *ta* in the remnant cannot be omitted, although there does not seem to be an obvious reason to disallow ED from targeting them. (Note incidentally that the complementizer *ko* can be omitted in the initial sentence.)

¹² I should note that several Japanese linguists have informed me that ED works mostly in the same way in both FA and RNR in Japanese as well. I am not sure at the moment whether Japanese and Korean are unique in allowing ED or whether ED is also attested in a wider variety of languages. It will be instructive to conduct a cross-linguistic survey concerning the availability of ED and see what the deciding factors are, a task that I have to put aside for future research.

¹³ Following Merchant (2004), I assume that cases like (i) involve preposition stranding, as illustrated in (ia), not deletion (or ED) of the preposition, as in (ib), which would be impossible due to word order.

- (i) Who was Peter talking with?
 → Mary.
 a. [_{FP} Mary [_{TP} ~~Peter was talking with t~~]]
 b. [_{FP} [~~with~~ Mary] [_{TP} ~~Peter was talking t~~]]

¹⁴ I thank Hideaki Yamashita (p.c.) and an anonymous reviewer for pointing out this issue to me.

¹⁵ Concerning the suggestion that incorporation precludes ED in cases like (31) and (32), an anonymous reviewer asks whether that implies that there is an ordering between incorporation and PF-deletion to the effect that the former applies before the latter. While that is plausible, it is also stipulative, as the reviewer points out. As far as I am concerned, what is important here is that incorporated elements are inaccessible for the purpose of applying PF-deletion (or ED for that matter). Presumably, incorporated elements and their hosts are treated as a single unit and are thus inseparable in the relevant sense. Whether that necessarily requires an explicit ordering of operations or whether it can be attributed to some other independent property is not well understood to me at the moment. I put this question aside for future research.

- (33) Yang-i [_{CP} Cho-ka mwues-ul sa-ss-ta-(ko)] malha-ess-ni?
 Y.-Nom C.-Nom what-Acc buy-Past-Dec-C say-Past-Q
 ‘What did Yang say Cho bought?’
 → [_{CP} Cho-ka chayk-ul sa-ss-ta-ko] [_{TP} Yang-i t-malha-ess-e]
 C.-Nom book-Acc buy-Past-Dec-C Y.-Nom say-Past-Dec
 ‘(Lit.) That Cho bought a book, Yang said’

Note, however, that in (33), to be more precise, it is not just the elements *ta* and *ko* that resist ED, but also the past tense morpheme *ss*. It is instructive to discuss what happens when the sequence *ss-ta-ko*, including the past tense morpheme, is EDED. In that case, what remains will be the verb stem, *sa* ‘to buy’, which is a bound morpheme. This leads to a morphological violation of the kind that Lasnik (1981) rules out by the Stray Affix Filter. Furthermore, the tense morpheme itself is also a bound morpheme, requiring elements both before and after it. Thus, applying ED to the sequence *ta-ko* leads to the same kind of problem. Finally, concerning the possibility of applying ED to the complementizer *ko*, I independently argued in An (2007a, b) that when a CP is displaced, its C head cannot be null, due to an independent prosodic requirement, while CPs in situ allow their C head to be null. This is exactly what we see in the contrast between the two sentences in (33) concerning the possibility of omitting the complementizer. (See An 2007a, b; Bošković and Lasnik 2003 and references therein for relevant discussion.)

5.4 ED further into the remnant

The examples in (30) and (31), above, raise another interesting point. Recall that, under the Merchant-style analysis of FA, remnants are supposed to undergo movement before the application of PF deletion. In the cases at hand, however, it is not clear if the remnants can undergo movement to begin with, seeing the ungrammaticality of the examples below.

- (34) * Yang-uy_i Cho-ka [t_i cha-lul] sa-ss-e.
 Y.-Gen C.-Nom car-Acc buy-Past-Dec
 ‘Cho bought Yang’s car.’

- (35) * John’s_i I took [t_i car].

Given this, let us consider first how (31a) is derived. Here, given the ungrammaticality of (35), I assume that what undergoes movement is actually the whole DP object, not just the genitive remnant, as shown in (36a). In addition to that, an independent ellipsis process, i.e., NP-ellipsis, takes place, as shown in (36b), which then correctly derives the surface form of the example.¹⁶

- (36) a. [[_{DP} John’s car]_i] [_{TP} I took t_i]
 b. [[_{DP} John’s car]_i] [_{TP} I took t_i]

¹⁶ Note that by the discussion of (36a, b), I am not implying that there is a strict ordering between the two types of ellipsis phenomena involved there. If NP-ellipsis involves LF-copying, as argued by Saito and An (2014), the head noun *car* could be null even before the DP undergoes movement for FA. This is not crucial for our discussion.

The same analysis cannot be extended to (30), because Korean does not allow NP-ellipsis, as argued by An (2009, 2013, 2014), Saito and An (2014).¹⁷ However, even though there is no NP-ellipsis in Korean, the language allows ED. Thus, we can still derive (30a, b) by taking the latter option, as illustrated in (37) and (38), respectively. In (37), the target of ED includes the head noun as well as the case marker on it. In (38), the deletion string extends further into the remnant, so that it now includes the genitive case marker on the possessive phrase as well.¹⁸ Thus, the availability of (30a, b) provides additional support for the ED analysis.¹⁹

¹⁷ Consider the contrast between (i) and (ii). The former is an example of NP-ellipsis in Japanese, and the latter its direct counterpart in Korean.

- (i) Taroo-no taido-wa yoi ga, [Hanako-no taido]-wa yokunai. (J)
 T.-Gen attitude-Top good though H.-Gen attitude-Top not.good
 ‘Taroo’s attitude is good, but Hanako’s isn’t.’ (Saito et al. 2008)
- (ii) * John-uy thayto-nun coh-ciman, [Mary-uy thayto]-nun cohci ahnta. (K)
 J.-Gen attitude-Top good-though M.-Gen attitude-Top good not
 ‘Though John’s attitude is good, Mary’s isn’t.’ (An 2013)

¹⁸ Actually, (37) and (38) are not the only possibilities. (i) and (ii), below, are also possible. Note that (i) does not involve ED. It just involves regular PF deletion. Thus, (ii), (37), and (38) are derived from (i) by deleting incrementally into the remnant.

- (i) [DP Yang-uy cha-lul]_i [_{TP} Cho-ka t_i sa-ss-e]
 Y.-Gen car-Acc C.-Nom buy-Past-Dec
- (ii) [DP Yang-uy cha-~~lul~~]_i [_{TP} Cho-ka t_i sa-ss-e]
 Y.-Gen car-Acc C.-Nom buy-Past-Dec

¹⁹ An anonymous reviewer raises a question based on the example in (i), pointing out that the genitive case marker *uy* cannot undergo ED here.

- (i) nwu-ka nwukwu-uy ttal-ul ttayli-ess-ni?
 who-Nom who-Gen daughter-Acc hit-Past-Q
 ‘Who hit whose daughter?’
 → John-i Mary-*(uy).
 J.-Nom M.-Gen
 ‘John (hit) Mary’s (daughter).’

I agree that the FA in (i) sounds somewhat awkward if *uy* is omitted (though I do not think that it is totally ungrammatical). Although not everything is well understood here, there seem to be a couple of interfering factors that might contribute independently to the degraded status of this example.

First, if the FA in (i) is provided in multiple pairs, omission of the genitive case marker from the second remnant seems much more natural.

- (ii) John-i Mary; Tom-i Susan; Bill-i Jane, ...
 J.-Nom M. T.-Nom S. B.-Nom J.
 ‘John (hit) Mary(’s daughter); Tom (hit) Susan(’s daughter); Bill (hit) Jane(’s daughter); ...’

They sound perfectly natural if the subject is contrastive.

- (iii) John-un Mary; Tom-un Susan; Bill-un Jane, ...
 J.-Top M. T.-Top S. B.-Top J.

I take this to be indicating that an independent factor concerning multiple wh-questions and their answers is playing a role here.

(37) [_{DP} Yang-uy ~~*cha-lul*~~]_i [_{TP} ~~*Cho-ka*~~ ~~*t_i*~~ ~~*sa-ss-e*~~] ((30a))
 Y.-Gen car-Acc C.-Nom buy-Past-Dec
 ‘Cho bought Yang’s car.’

(38) [_{DP} Yang-uy *cha-lul*]_i [_{TP} ~~*Cho-ka*~~ ~~*t_i*~~ ~~*sa-ss-e*~~] ((30b))
 Y.-Gen car-Acc C.-Nom buy-Past-Dec

6 Parallelism between FA and right node raising

I have argued in the previous sections that allowing a deletion string to be extended further into the remnant, i.e., ED, makes it possible to account for the omission phenomenon of case markers, postpositions, and head nouns in FA. In this section, I will argue that there exists a parallelism between FA and RNR in this regard. As mentioned at the outset, these constructions have not been examined alongside each other due to the sheer differences in their structure, surface form, and use. I will show, however, that there is a significant parallelism in their behavior, which has not been noted in the literature. More specifically, I will argue that ED is also attested in RNR, and that it behaves in the same way as in FA. Moreover, I will show that elements affected by RNR are also subject to an adjacency requirement just like in FA.

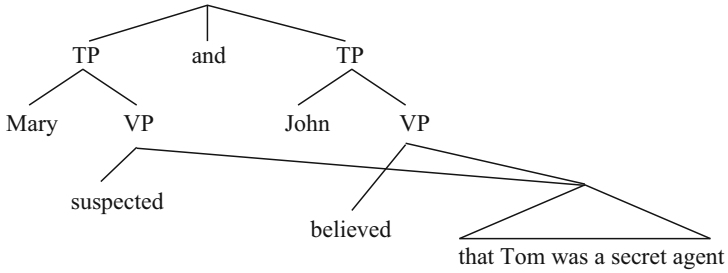
This novel observation has important implications. First, it indicates that ED is not limited to FA, which makes it appealing to explore other types of ellipsis phenomena from the point of view of ED.²⁰ Second, the discussion here provides an additional argument for the PF deletion analysis of RNR, for which there have been several alternative analyses. I briefly sketch below three major analyses of RNR—namely, the multi-dominance analysis, the ATB movement analysis, and the PF deletion analysis in (39a), (39b), and (39c), respectively.

Footnote 19 continued

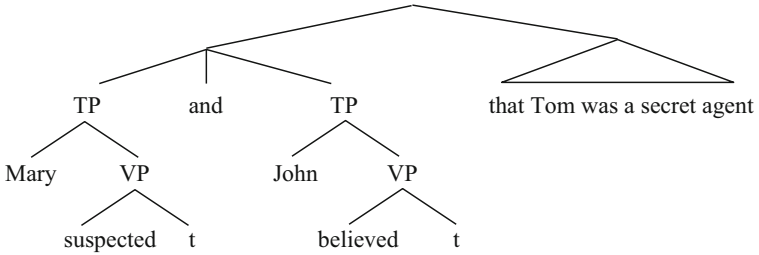
Second, the notion of animacy might also be playing a role in an intricate way here. That is, Ku and Cho (2014) independently argue that omission of case markers in multiple FA contexts is less preferred if the remnants have the same animacy value and that this restriction has something to do with processing. In this regard, note that in (i), three animate NPs, two of which are also in an inalienable possession (or kinship relationship), co-occur. (An anonymous reviewer points out, however, that the overall correctness of the animacy restriction remains to be tested further, noting that there are counterexamples to it. Since Ku and Cho’s proposal is not crucial for our discussion, I will not go into this here.) In sum, though the nature of the interfering factors mentioned above requires further investigation, they seem to be playing a role in making (i) less natural than a similar example in (30). I put aside further explorations of this issue for future research.

²⁰ But this is a task that I will have to put aside for future research. See also the conclusion section for some discussion.

(39) a.



b.



c. Mary suspected ~~that Tom was a secret agent~~ and John believed that Tom was a secret agent.

It should be pointed out that most of the existing analyses of FA and RNR do not provide an obvious way to assimilate them. For instance, the direct interpretation analysis of FA, where remnants are non-sentential elements licensed by pragmatics, is not applicable to RNR, because we are clearly dealing with sentential elements here. Similarly, the multi-dominance analysis and the ATB movement analysis of RNR are not applicable to FA either, because these analyses presuppose sharing of elements in coordinated structures, while there is no sharing, nor coordination, in FA. However, the fact that both constructions have been independently argued to employ PF deletion makes PF deletion a good candidate, and this will be the hypothesis that I will explore in this paper. Thus, for the sake of argument, I will adopt the PF deletion analysis of RNR in what follows, and argue that, by doing so, we can capture several important properties.

With these considerations in mind, let us examine the parallelism between FA and RNR.

6.1 Adjacency

I suggested above that PF deletion targets strings of elements, the consequence of which is that deleted elements should be adjacent to each other, forming a continuous string. Interestingly, we observe the same kind of behavior in RNR. That

is, RNRed elements should form a continuous string as well. To see this, consider the contrast between (40) and (41).²¹

(40) * Lydia-nun Ana-ka ppang-ul ~~mek-ess-tako malha-ess-ta~~, kuliko
 L.-Top bread-Acc and
 Nina-nun Ana-ka pap-ul mek-ess-tako malha-ess-ta.
 N.-Top A.-Nom rice-Acc eat-Past-Comp say-Past-Dec
 ‘Lydia (said that Ana ate) bread and Nina said that Ana ate rice.’

(41) Lydia-nun ppang-ul_i Ana-ka t_j ~~mek-ess-tako malha-ess-ta~~, kuliko
 L.-Top bread-Acc and
 Nina-nun pap-ul_j Ana-ka t_i mek-ess-tako malha-ess-ta.
 N.-Top rice-Acc A.-Nom eat-Past-Comp say-Past-Dec
 ‘Lydia (said that Ana ate) bread and Nina said that Ana ate rice.’

In (40), overt NPs *ppang-ul* ‘bread’ and *pap-ul* ‘rice’ intervene in between the deleted elements, preventing them from forming a continuous string. If these NPs are moved away, allowing the deleted elements to form an unbroken string, as in (41), the sentence becomes perfect.²² (See An 2007b for further discussion.) This is reminiscent of the behavior of ED in the many examples of FA examined above. I repeat the relevant examples below.

²¹ In the RNR examples below, underlined elements in the second conjunct indicate the shared (or RNRed) elements. Underscores in the first conjunct indicate the corresponding positions of the deleted elements. Strikethrough notations should be interpreted as before.

²² An anonymous reviewer raises a question about (40), pointing out that there may be an alternative derivation available for it. That is, suppose that the object *ppang-ul* ‘bread’ undergoes scrambling only in the first conjunct, as in (ia). (I only show the first conjunct here.) Then, RNR (i.e., PF deletion) applies, as in (ib). Assuming that traces do not intervene, this will make the subject *Ana-ka* adjacent to the deletion string, which makes it eligible for ED, as in (ic).

- (i) a. Lydia-nun ppang-ul_i Ana-ka t_j mek-ess-tako malha-ess-ta, kuliko ...
 L.-Top bread-Acc A.-Nom eat-Past-Comp say-Past-Dec and
 b. Lydia-nun ppang-ul_i Ana-ka t_j ~~mek-ess-tako malha-ess-ta~~, kuliko ...
 c. Lydia-nun ppang-ul_i ~~Ana-ka t_j~~ ~~mek-ess-tako malha-ess-ta~~, kuliko ...

If this derivation were available, the ungrammaticality of (40) would be unexpected. Given its ungrammaticality, though, I suspect that a problem arises at the point of (ib), because the sentence is quite degraded, as several speakers I have consulted confirm. Note that in RNR, the last element in the first conjunct is contrasted with the last element in the second conjunct before the shared material. In the case of (ib), the contrasted elements will be *Ana-ka* and *pap-ul*, which is inappropriate. Of course, if the relevant elements are reordered so that they occupy equivalent positions in their conjuncts, the sentence is perfect, as is shown by the grammaticality of (41).

- (42) a. Cho-ka_i Yang-~~ul_j~~ [_{TP} ~~t_i~~ ~~t_j~~ *manna ss-e*]
C.-Nom Y.-Acc meet-Past-Dec
'Cho (met) Yang.'
- b. Cho-ka_i Yang-eykey_j chayk-~~ul_k~~ [_{TP} ~~t_i~~ ~~t_j~~ ~~t_k~~ *ewu-ess-e*]
C.-Nom Y.-Dat book-Acc give-Past-Dec
'Cho (gave) Yang a book.'
- c. ppang-un Cho-~~ka_i~~ [_{TP} ~~t_i~~ ~~e~~ *mek-ess-e*]
bread-Top C.-Nom eat-Past-Dec
'Cho (ate) the bread.'
- d. Cho-nun [*sey-kwen-uy chayk ul*]_i [_{TP} ~~e~~ ~~t_i~~ *ilk-ess-e*]
C.-Top three-CL-Gen book-Acc read-Past-Dec
'Cho (read) three (books).'
- e. chayk-~~i_i~~ [_{TP} ~~t_i~~ *seysang-ul pakkwu-e*]
book-Nom world-Acc change-Dec
'Books (change the world).'
- f. suthapeksu-~~eyse_i~~ [_{TP} *Cho-ka* ~~t_i~~ *cenhwa-lul* ~~ha-ess-e~~]
Starbucks-from C.-Nom phone call-Acc do-Past-Q
'(Cho called) from Starbucks.'
- g. Cho-ka_i mangchi-~~lo_j~~ [_{TP} ~~t_i~~ ~~t_j~~ *changmwun-ul kkay-ess-e*]
C.-Nom hammer-with window-Acc break-Past-Dec
'Cho (broke the window) with a hammer.'
- h. mangchi-lo_i changmwun-~~ul_j~~ [_{TP} *Cho-ka* ~~t_i~~ ~~t_j~~ *kkay-ess-e*]
hammer-with window-Acc C.-Nom break-Past-Dec
'(Cho broke) a window with a hammer.'
- (43) a. * Cho-~~ka~~ Yang-~~ul~~ ~~manna-ss-e~~.
C.-Nom Y.-Acc meet-Past-Dec
- b. * Yang-~~i~~ ecey ~~wa-ss-e~~.
Y.-Nom yesterday come-Past-Dec
- c. * Cho-~~ka~~ Yang-~~eykey~~ chayk-~~ul~~ ~~ewu-ess-e~~.
C.-Nom Y.-Dat book-Acc give-Past-Dec
- d. * Cho-~~ka~~ Yang-~~eykey~~ chayk-~~ul~~ ecey ~~ewu-ess-e~~.
C.-Nom Y.-Dat book-Acc yesterday give-Past-Dec
- e. * suthapeksu-~~eyse~~ Yang-~~eykey~~ ~~Cho-ka~~ ~~cenhwa-lul~~ ~~ha-ess-e~~.
Starbucks-at Y.-Dat C.-Nom phone call-Acc do-Past-Dec
- f. * Cho-~~ka~~ mangchi-~~lo~~ ~~changmwun-ul~~ ~~kkay-ess-e~~.
C.-Nom hammer-with window-Acc break-Past-Dec
- g. * mangchi-~~lo~~ changmwun-~~ul~~ ~~Cho-ka~~ ~~kkay-ess-e~~.
hammer-with window-Acc C.-Nom break-Past-Dec

6.2 ED in RNR

A more important parallelism between FA and RNR is that ED is also possible in the latter construction. Note first that RNR allows case markers and postpositions to be omitted from remnants, as shown in (44a) and (44b), respectively.

- (44) a. Cho-nun Yang__ __ __ __, kuliko
 C.-Top Y. and
 Mini-nun Swuni-lul paykhwacem-ey teyliko ka-ss-ta.
 M.-Top S.-Acc department store-to take go-Past-Dec
 ‘Cho (took) Yang (to the department store), and Mini took Swuni to the department store.’
- b. Yang-un polpheyn__ __ __ __, kuliko
 Y.-Top ballpoint pen and
 Cho-nun mannyenphil-lo sensayngnim-kkey pheyn-ci-lul sse-ss-ta.
 C.-Top fountain pen-with teacher-Dat letter-Acc write-Past-Dec
 ‘Yang (wrote a letter to his teacher) with a ballpoint pen, and Cho wrote a letter to her teacher with a fountain pen.’

Recall that there are contexts that disallow case marker drop, while FA nevertheless allows case markers to be omitted in such contexts. I repeat the relevant examples below.

- (45) a. ppang-un Cho-*(ka) mek-ess-ta.
 bread-Top C.-Nom eat-Past-Dec
 ‘Cho ate the bread.’
- b. sey-kwen-*(uy) chayk
 three-CL-Gen book
 ‘three books’
- c. chayk-*(i) seysang-ul pakkwun-ta.
 book-Nom world-Acc change-Dec
 ‘Books change the world.’
- (46) a. ppang-un nwu-ka mek-ess-ni?
 bread-Top who-Nom eat-Past-Q
 ‘Who ate the bread?’
 → ppang-un Cho.
 bread-Top C.
 ‘Cho (ate) the bread.’
- b. Cho-nun myech-kwen-uy chayk-ul ilk-ess-ni?
 C.-Top how many-CL-Gen book-Acc read-Past-Q
 ‘How many books did Cho read?’
 → Cho-nun sey-kwen.
 C.-Top three-CL
 ‘Cho (read) three (books).’

- c. mwues-i seysang-ul pakkwu-ess-ni?
 what-Nom world-Acc change-Past-Q
 ‘What changed the world?’
 → chayk.
 book
 ‘Books (changed the world).’

Crucially, case markers on these elements can also be omitted in RNR.

- (47) a. ppang-un Cho__ __ __, kuliko
 bread-Top C. and
 pap-un Yang-i Swuni-eykeyse patao-ass-ta.
 rice-Top Y.-Nom S.-from receive-Past-Dec
 ‘Cho (received) bread (from Swuni) and Yang received rice from Swuni.’
- b. Cho-nun sey-kwen__ __ __, kuliko
 C.-Top three-CL and
 Yang-un twu-kwen-uy chayk-ul ilk-ess-ta.
 Y.-Top two-CL-Gen book-Acc read-Past-Dec
 ‘Cho (read) three (books) and Yang read two books.’
- c. Cho-nun chayk__ __ __, kuliko
 C.-Top book and
 Yang-un intheneys-i seysang-ul pakkwu-ess-tako malha-ess-ta.
 Y.-Top internet-Nom world-Acc change-Past-Comp say-Past-Dec
 ‘Cho (said that) books (changed the world), but Yang said that the internet changed the world.’

Furthermore, if we modify the sentences in (47) in a way that makes the final remnants *Cho*, *sey-kwen*, and *chayk* non-final, the sentences become ungrammatical if these elements are bare, exactly as expected. Of course, if they retain their case marker, the sentences are perfect.

- (48) a. ppang-un Cho-*(ka) Mini-eykeyse __ __, kuliko
 bread-Top C.-Nom M.-from and
 pap-un Yang-i Swuni-eykeyse patao-ess-tako tul-ess-ta.
 rice-Top Y.-Nom S.-from receive-Past-Comp hear-Past-Dec
 ‘(I heard) Cho (received) bread from Mini and Yang received rice from Swuni.’
- b. Cho-nun sey-kwen-*(uy) chayk-ul __ __, kuliko
 C.-Top three-CL-Gen book-Acc and
 Yang-un twu-kwen-uy nonmwun-ul ss-ess-tako tul-ess-ta.
 Y.-Top two-CL-Gen article-Acc write-Past-Comp hear-Past-Dec
 ‘(I heard) Cho (wrote) three books and Yang wrote two articles.’

- c. Cho-nun chayk-*(i) eccemyen __ __ __, kuliko
 C.-Top book maybe and
 Yang-un intheneys-i pwunmyenghi seysang-ul pakkwu-ess-tako
 Y.-Top internet-Nom definitely world-Acc change-Past-Comp
malha-ess-ta.
 say-Past-Dec
 ‘Cho (said that) maybe books (changed the world), but Yang said
 that the internet definitely changed the world.’

This state of affairs can be straightforwardly accounted for if we assume that PF deletion and ED are involved in the RNR examples above. ((49) and (50) correspond to (47) and (48), respectively.)

- (49) a. ppang-un Cho-~~ka~~ Swuni-eykeyse ~~patao-ass-ta~~, kuliko
 bread-Top C. and
 pap-un Yang-i Swuni-eykeyse patao-ass-ta.
 rice-Top Y.-Nom S.-from receive-Past-Dec
 b. Cho-nun sey-kwen-~~uy~~ chayk-ul ~~ilk-ess-ta~~, kuliko
 C.-Top three-CL and
 Yang-un twu-kwen-uy chayk-ul ilk-ess-ta.
 Y.-Top two-CL-Gen book-Acc read-Past-Dec
 c. Cho-nun chayk-~~i~~ ~~seysang-ul pakkwu-ess-ta-ko malha-ess-ta~~, kuliko
 C.-Top book and
 Yang-un intheneys-i seysang-ul pakkwu-ess-tako malha-ess-ta.
 Y.-Top internet-Nom world-Acc change-Past-Comp say-Past-Dec
- (50) a. * ppang-un Cho-~~ka~~ Mini-eykeyse ~~patao-ass-tako-tul-ess-ta~~, kuliko
 bread-Top C. M.-from and
 pap-un Yang-i Swuni-eykeyse patao-ass-tako tul-ess-ta.
 rice-Top Y.-Nom S.-from receive-Past-Comp hear-Past-Dec
 b. * Cho-nun sey-kwen-~~uy~~ chayk-ul ~~ss-ess-tako-tul-ess-ta~~, kuliko
 C.-Top three-CL book-Acc and
 Yang-un twu-kwen-uy nonmwun-ul ss-ess-tako tul-ess-ta.
 Y.-Top two-CL-Gen article-Acc write-Past-Comp hear-Past-Dec
 c. * Cho-nun chayk-~~i~~ eccemyen ~~seysang-ul pakkwu-ess-tako malha-ess-ta~~,
 C.-Top book maybe
 Kuliko Yang-un intheneys-i pwunmyenghi
 and Y.-Top internet-Nom definitely
seysang-ul pakkwu-ess-tako malha-ess-ta.
 world-Acc change-Past-Comp say-Past-Dec

6.3 ED further into the remnant in RNR

Recall that, in dealing with (30), repeated below as (51), I suggested the possibility of applying ED to the head noun of the remnant NP, not just to its case marker. Thus, (51a, b) are derived as in (52a, b). Furthermore, as pointed out in footnote 18, FAs like those in (53) are also available for the wh-question in (51). Thus, there are four varieties of FA to the wh-question in (51) depending on how far the deletion string is extended into the remnant.

- (51) nwukwu-uy cha-lul Cho-ka sa-ss-ni?
 who-Gen car-Acc C.-Nom buy-Past-Q
 ‘Whose car did Cho buy?’
 → a. Yang-uy.
 Y.-Gen
 ‘(Cho bought) Yang’s (car).’
 b. Yang.

- (52) a. [Yang-uy ~~cha-lul~~_i] [_{TP} Cho-ka ~~t_i~~ sa-ss-e]
 Y.-Gen car-Acc C.-Nom buy-Past-Dec
 ‘Cho bought Yang’s car.’
 b. [Yang-uy ~~cha-lul~~_i] [_{TP} Cho-ka ~~t_i~~ sa-ss-e]

- (53) a. [Yang-uy cha-lul]_i [_{TP} Cho-ka ~~t_i~~ sa-ss-e]
 b. [Yang-uy cha-~~lul~~_i] [_{TP} Cho-ka ~~t_i~~ sa-ss-e]

As expected, it is perfectly possible to construct equivalent examples in RNR, as shown in (54). Note how the deletion string extends incrementally into the remnants in these examples, as illustrated in (55).

- (54) a. John-un Kim-i [Yang-uy cha-lul] ___ __, kuliko
 J.-Top K.-Nom Y.-Gen car-Acc and
 Tom-un Ko-ka [Jane-uy cha-lul] sa-ss-tako malha-ess-ta.
 T.-Top K.-Nom J.-Gen car-Gen buy-Past-Comp say-Past-Dec
 b. John-un Kim-i [Yang-uy cha__] ___ __, kuliko
 Tom-un Ko-ka [Jane-uy cha-lul] sa-ss-tako malha-ess-ta.
 c. John-un Kim-i [Yang-uy ___ __] ___ __, kuliko
 Tom-un Ko-ka [Jane-uy cha-lul] sa-ss-tako malha-ess-ta.
 d. John-un Kim-i [Yang-__ ___ __] ___ __, kuliko
 Tom-un Ko-ka [Jane-uy cha-lul] sa-ss-tako malha-ess-ta.

Of course, the derivation of these sentences will be on a par with that of (52) and (53).

- (55) a. John-un Kim-i Yang-uy cha-lul ~~sa-ss-tako malha-ess-ta~~, kuliko
 Tom-un Ko-ka Jane-uy cha-lul sa-ss-tako malha-ess-ta.
- b. John-un Kim-i Yang-uy cha-~~lul~~ ~~sa-ss-tako malha-ess-ta~~, kuliko
 Tom-un Ko-ka Jane-uy cha-lul sa-ss-tako malha-ess-ta.
- c. John-un Kim-i Yang-uy ~~cha-lul~~ ~~sa-ss-tako malha-ess-ta~~, kuliko
 Tom-un Ko-ka Jane-uy cha-lul sa-ss-tako malha-ess-ta.
- d. John-un Kim-i Yang-~~uy~~ ~~cha-lul~~ ~~sa-ss-tako malha-ess-ta~~, kuliko
 Tom-un Ko-ka Jane-uy cha-lul sa-ss-tako malha-ess-ta.

6.4 Summary

I have argued in this section that there is a parallelism between FA and RNR: they allow case markers and other elements to be omitted even in contexts that normally disallow their omission; such omission is restricted to final position within the remnant; more generally, deleted elements in these constructions (including elements that undergo ED) are subject to an adjacency requirement, so that they form an unbroken, continuous string.

As I point out in the next section, FA and RNR are also similar in that what is deleted does not have to correspond to a syntactic constituent, which I take to provide additional evidence that PF deletion is involved in deriving these constructions. Note, crucially, that the discussion here provides an argument for the PF deletion analyses of RNR. However, there is no clear way to capture the parallelism between FA and RNR by means of multi-dominance or ATB movement (or, direct interpretation, for that matter), as pointed out earlier.

7 Elaborations and implications

In the previous section, I argued that there is a parallelism between FA and RNR and that this parallelism follows from the fact that they both employ PF deletion, which operates on strings of elements. In this section, I will elaborate on aspects of this proposal and also discuss some implications and consequences of the current analysis.

7.1 PF deletion and syntactic constituents

I argued above that while it is mostly syntax that determines what is to be deleted, PF deletion has its own guidelines, among which is the requirement that deleted elements form an unbroken string. Furthermore, the string of deleted elements can sometimes be extended beyond what is initially marked for

deletion by syntax (ED). Given this, it is actually not difficult to find cases where what is affected by PF deletion in FA and RNR does not correspond to a syntactic constituent, which I believe makes it all the more plausible that we are in the domain of PF.²³ In other words, PF deletion can, in principle, ignore syntactic constituents.

First, in all the ED contexts above, the string of deleted elements does not correspond to a constituent. I repeat below some examples to illustrate this. As the strikethrough notation clearly indicates, the deleted elements form a continuous string in these examples. ((56) and (57) are repeated from (52)/(53) and (55), respectively.)

- (56) a. [Yang-uy cha-~~lul~~_i [_{TP} Cho-ka-~~t_i~~ sa-ss-e]]
 Y.-Gen car-Acc C.-Nom buy-Past-Dec
 ‘(Cho bought) Yang’s car.’
 b. [Yang-uy ~~cha-lul~~_i [_{TP} Cho-ka-~~t_i~~ sa-ss-e]]
 c. [Yang-uy ~~cha-lul~~_i [_{TP} Cho-ka-~~t_i~~ sa-ss-e]]
- (57) a. John-un Kim-i Yang-uy cha-~~lul~~ sa-ss-tako malha-ess-ta, kuliko
 J.-Top K.-Nom Y.-Gen car-Acc and
 Tom-un Ko-ka Jane-uy cha-lul sa-ss-tako malha-ess-ta.
 T.-Top K.-Nom J.-Gen car-Acc buy-Past-Comp say-Past-Dec
 ‘John (said that) Kim (bought) Yang’s car and Tom said that Ko bought Jane’s car.’
 b. John-un Kim-i Yang-uy ~~cha-lul~~ sa-ss-tako malha-ess-ta, kuliko
 Tom-un Ko-ka Jane-uy cha-lul sa-ss-tako malha-ess-ta.
 c. John-un Kim-i Yang-uy ~~cha-lul~~ sa-ss-tako malha-ess-ta, kuliko
 Tom-un Ko-ka Jane-uy cha-lul sa-ss-tako malha-ess-ta.

Interestingly, in the case of RNR, it is even possible to affect non-constituents without ED.²⁴ For instance, arguing for a PF deletion analysis of RNR, I showed in An (2007b) that there are many cases where RNRred elements do not form a constituent. I present below some examples to this effect.

²³ See also An (2007b) for arguments and references for the idea that prosody plays an important role in determining the acceptability of RNR sentences.

²⁴ The same is not possible for FA due to an independent factor. Recall that in FA remnants undergo syntactic movement to a position above TP and the TP is subsequently deleted. Thus, in cases without ED, what is deleted is always a constituent. Of course, remnants in FA may be further affected by ED, in which case the deleted portion of the sentence will not correspond to a constituent.

- (58) a. Tom-un Ana-ka ppang-ul __ __ __, kuliko Nil-un Ana-ka
 T.-Top A.-Nom bread-Acc and N.-Top A.-Nom
 pap-ul mek-ess-ta-ko khun soli-lo malha-ess-ta.
 rice-Acc eat-Past-Dec-Comp big voice-with say-Past-Dec
 ‘Tom (said loudly that) Ana (ate) bread and Nil said loudly that Ana ate rice.’
- b. Tom-nun ppang-ul __ __ __, kuliko Nil-un pap-ul
 T.-Top bread-Acc and N.-Top rice-Acc
Ana-ka t mek-ess-ta-ko malha-ess-ta.
 A.-Nom eat-Past-Dec-Comp say-Past-Dec
 ‘Tom (said that Ana ate) bread and Nil said that Ana ate rice.’
- c. Nil-un Ana-uy __ __, kuliko Lyn-un Tom-uy
 N.-Top A.-Gen and L.-Top T.-Gen
catongcha-lul mol-ass-ta.
 car-Acc drive-Past-Dec
 ‘Nil (drove) Ana’s (car) and Lyn drove Tom’s car.’

In (58a), what is RNRed is the embedded verb, the matrix adverbial, and the matrix verb, excluding the rest of the embedded clause, i.e., its subject and object. In (58b), the embedded object is scrambled within its clause, presumably, to a position adjoined to TP. Then, the embedded subject, the embedded verb, and the matrix verb are RNRed, excluding the scrambled object. In (58c), the verb and a part of the object, excluding its specifier, are RNRed. Therefore, it is clear that forming a constituent based on the RNRed elements in (58) is impossible. (The situation becomes even more complicated if we also take into consideration the functional heads, e.g., T, C, etc.) Note also that the RNRed elements form a continuous string here as well. If they don’t, the sentences become ungrammatical. (See, for instance, (40) and (48)/(50) for such cases.)

Given this, my suggestion is that PF deletion can, in principle, ignore syntactic constituents (while it does end up targeting constituents in many cases). Of course, this does not mean that PF deletion is free. As usual, deleted elements in FA and RNR, with or without ED, should have an antecedent in parallel structure for their recoverability. Further, since strings are PF counterparts of constituents in syntax, deleted elements should be adjacent to each other so that they form an unbroken, continuous string.

Finally, given the observation about the non-constituency of deletion targets in ED contexts (and some instances of RNR without ED), an anonymous reviewer raises a question about the possibility of iterated applications of deletion, where each application of deletion targets a constituent. This is actually not so different from what I am proposing about ED contexts in the current paper. For instance, in ED contexts in FA, a constituent, i.e., TP, is initially deleted, following the movement of the remnant. Then, if the relevant conditions are met, the deletion string can be further extended into the remnant. This latter step is what I have been referring to as ED.²⁵

²⁵ At this point, I should remind the reader that the term ED is just a mnemonic device and does not refer to a separate, brand-new operation. Thus, there is just one operation involved in all the relevant examples we have seen so far—namely, PF deletion. ED simply refers to those situations where PF deletion is extended beyond the original target and into the remnant, sometimes disobeying syntactic constituency.

- (59) NP-case marker [~~rest of the clause~~] basic PF deletion (clausal ellipsis in FA)
 ←←←←←
 NP-case marker [~~rest of the clause~~] PF deletion extended into the remnant (ED)
 ←←←←←

The crucial factor is not whether (or how many times) deletion reiterates, but whether the deleted elements form a continuous string, which can sometimes ignore syntactic constituency. Note further that simply saying that deletion can apply iteratively will not be sufficient, because there is the adjacency requirement on deleted material, as I argued above. Otherwise, one would have to question why examples like (40) and (43), repeated below as (60) and (61), are ungrammatical.

- (60) * Lydia-nun *Ana-ka* ppang-ul *mek-ess-tako*—*malha-ess-ta*, kuliko
 L.-Top bread-Acc and
 Nina-nun *Ana-ka* pap-ul *mek-ess-tako* *malha-ess-ta*.
 N.-Top A.-Nom rice-Acc eat-Past-Comp say-Past-Dec
 ‘Lydia (said that Ana ate) bread and Nina said that Ana ate rice.’

- (61) a. * Cho-*ka* Yang-*ul* *manha-ss-e*.
 C.-Nom Y.-Acc meet-Past-Dec
 b. * Yang-*i* ecey *wa-ss-e*.
 Y.-Nom yesterday come-Past-Dec
 c. * Cho-*ka* Yang-*eykey* chayk-*ul* *ewu-ess-e*.
 C.-Nom Y.-Dat book-Acc give-Past-Dec
 d. * Cho-*ka* Yang-*eykey* chayk-*ul* ecey *ewu-ess-e*.
 C.-Nom Y.-Dat book-Acc yesterday give-Past-Dec
 e. * suthapeksu-*eyse* Yang-*eykey* Cho-*ka* *eenhwa-lul*—*ha-ess-e*
 Starbucks-at Y.-Dat C.-Nom phone call-Acc do-Past-Dec
 f. * Cho-*ka* mangchi-*to* *changmwun-ul* *kkay-ess-e*.
 C.-Nom hammer-with window-Acc break-Past-Dec
 g. * mangchi-*to* changmwun-*ul* Cho-*ka* *kkay-ess-e*.
 hammer-with window-Acc C.-Nom break-Past-Dec

7.2 Island sensitivity

In this section, I’d like to briefly address an issue raised by the editors of JEAL. Given the proposal about the parallelism between FA and RNR, they asked how the constructions in question behave with respect to islands.

First, it is well-known that RNR does not show island sensitivity. (See Abels 2003; An 2007b; Bošković 2004 for relevant discussion and references.)

- (62) a. Josh got angry after he read, and Willow quit after finding out about, the company's pro-discrimination policy.
 b. * What did Josh get angry after he read? (Abels 2003)
- (63) a. I know a man who buys, and you know a woman who sells, gold rings and raw diamonds from South Africa.
 b. * What do you know a man who sells? (Abels 2003)

Interestingly, Park (2005a, b) argues that FA in Korean are not sensitive to islands either.

- (64) John-un [casin-uy tongsayng-eykey mwues-ul cwun salam]-ul manna-ss-ni?
 J.-Top self-Gen brother-to what-Acc gave person-Acc met-Past-Q?
 'What did John meet a person who gave to his brother?'
 → sakwa-lul.
 apple-Acc
 'An apple'
 cf. ?*[sakwa-lul]_i [John-un [casin-uy tongsayng-eykey t_i cwun salam]-ul
 apple-Acc J.-Top self-Gen brother-to gave person-Acc
 manna-ss-e]
 meet-past-Dec
 '(Lit.) The apple_i, John met a person who gave (it_i) to his brother.'
- (65) John-un [nwu-ka cakkokhan nolay]-lul pwul-ess-ni?
 J.-Top who-Nom wrote song-Acc sing-Past-Q
 '*Who did John sing a song that wrote?'
 → Max-ka.
 M.-Nom
 'Max'
 cf. ?*[Max-ka]_i [John-un [t_i cakkokhan nolay]-lul pwul-ess-e]
 M.-Nom J.-Top wrote song-Acc sing-Past-Dec
 '(Lit.) Max_i, John sang a song that (he_i) wrote.'

Therefore, FA and RNR behave similarly with respect to islands in that they are insensitive to them. It should be noted that, in the literature, the source of this island insensitivity has been attributed to different aspects of the derivation of these constructions. For instance, several researchers conclude, based on data like (62) and (63) that RNRed elements do not undergo movement. Hence, no island violation is expected. Park (2005a, b) argues that cases like (64), (65) are instances of repair by deletion. (See Fox and Lasnik 2003; Fukaya and Hoji 1999; Lasnik 2001; Merchant 2001, among others, for relevant discussion.)

Note, however, that the parallelism between FA and RNR that I am concerned with in this paper is the fact that they allow case markers and other elements to be omitted even in contexts that normally disallow their omission, that such omission is restricted to final position within the remnant, and, more generally, that deleted

elements in these constructions are subject to an adjacency requirement, so that they form an unbroken, continuous string of elements. In a nutshell, FA and RNR manifest parallel behavior because they involve PF deletion. The island insensitivity of FA and RNR could also be attributed to PF deletion, but the argument is not entirely conclusive, because, at least in the case of RNR, the lack of island sensitivity does not in and of itself argue specifically for the PF deletion analysis. Thus, though the island insensitivity of these constructions might also be taken to provide an additional argument for the parallelism between the constructions in question, I will not be concerned with this issue any further here.

7.3 Other approaches

In this section, I'd like to briefly discuss some of the previous analyses of FA that are relevant to the current analysis, in particular, work by Ku and Cho (2014), Park and Oh (2014), and Park and Shin (2014).

First, according to Park and Shin (2014), FAs derive from two possible sources: from cleft sentences via clausal ellipsis and null pronominalization, as illustrated in (66a); and, from normal declarative sentences via movement and clausal ellipsis, as illustrated in (66b). (This is a much simplified summary of Park and Shin's analysis. I refer the reader to their work for details.)

- (66) Cho-ka nwukwu-lopwuthe i senmwul-ul pat-ass-ni?
 C.-Nom who-from this present-Acc receive-Past-Q
 'Who did Cho receive this present from?'
 → Yang-ulopwuthe.
 Y.-from
 'From Yang.'
- a. pro (= [Cho-ka nwukwu-lopwuthe i senmwul-ul patun-kes-un])
 C.-Nom who-from this present-Acc received-what-Top
 [[Yang-ulopwuthe]_i [~~Cho-ka t_i i senmwul-ul~~
 Y.-from C.-Nom this present-Acc
 patun kes]]_i ta
 received-what-Cop-Dec
- b. [[Yang-ulopwuthe]_i [~~Cho-ka t_i i senmwul-ul pat ass ta~~]
 Y.-from C.-Nom this present-Acc receive-Past-Dec
 (adapted from Park and Shin 2014, pp. 10–11; the annotation is theirs)

Here, (66b) is not different from Merchant's (2004) analyses of FA, on which the current analysis is also based. Even under the cleft-based analysis in (66a), clausal ellipsis is involved, which can be considered to establish a context for ED. Thus, it seems that Park and Shin's analysis is not inherently incompatible with the current analysis.

Incidentally, there is some reason to prefer the Merchant-style analysis to the cleft-based analysis. For instance, the cleft sentence in (66a) without null pronominalization and clausal ellipsis is completely unacceptable. Concerning the distribution of case markers in multiple FA, i.e., the generalization in (13), Park and Shin suggest that the deviance of the relevant sentences can be attributed to the fact that scrambled elements are not eligible for case marker drop. However, I showed above that omission of case markers in ED contexts is not the same as case marker drop. Furthermore, it is not clear how to capture the parallelism between FA and RNR, because RNR does not involve movement of the remnant (or clefting thereof, for that matter).

Next, Ku and Cho's (2014) analysis, couched in the framework of Construction Grammar, focuses exclusively on the distribution of case markers in multiple FA contexts. They propose that when there are multiple bare remnants in FA, they are treated as a single coordinated constituent, based on the availability of an utterance like (68b).

- (67) The generalization of forming an FA constituent in Korean
When an FA without any marker occurs with its following FA
with or without a marker, they are regarded as
a single coordinated FA. (Ku and Cho 2014, [25])

- (68) Minswu-ka nwukwu-eykey sathang-ul cwu-ess-ni?
M.-Nom who-Dat candy-Acc give-Past-Q
'To whom did Minswu give a candy?'
→ a. Mica-wa Yenghi-eykey.
M.-Conj Y.-Dat
'(Minswu gave a candy) to Mica and Yenghi.'
b. Mica, Yenghi. (Ku and Cho 2014, [24])

Based on this, they argue that the ungrammaticality of an utterance like (69b) is expected, because the two remnants wrongly count as a single coordinated constituent, while there are two independent wh-phrases in the question sentence.

- (69) nwu-ka nwukwu-eykey sathang-ul cwu-ess-ni?
who-Nom who-Dat candy-Acc give-Past-Q
'Who gave a candy to whom?'
→ a. Minswu-ka Mica-eykey.
M.-Nom M.-Dat
'Minswu gave Mica a candy.'
b. * Minswu Mica-(eykey). (Ku and Cho 2014, [26])

Although Ku and Cho make interesting observations that merit further exploration²⁶, there are also aspects that are questionable. For instance, it is not clear why an FA like (22c), repeated below, is ungrammatical. Here, the two

²⁶ For instance, they note that the notion of animacy can play a role in determining the legitimacy of FA. See their work for details.

remnants clearly differ in their category, i.e., NP and PP, precluding the possibility of their coordination.

- (70) nwu-ka mwue-lo changmwun-ul kkay-ess-ni?
 who-Nom what-with window-Acc break-Past-Q
 ‘Who broke the window with what?’
 → Cho-*(ka) mangchi-lo.
 C.-Nom hammer-with
 ‘Cho (broke the window) with a hammer.’

Similarly to Park and Shin’s (2014) analysis, it is also not clear what Ku and Cho have to say about the parallelism between FA and RNR.²⁷

Finally, Park and Oh (2014) also examine the distribution of case markers in multiple FA contexts from the point of view of the movement and deletion analysis. In so doing, they make two interesting points that are of much relevance to the current analysis as well. Thus, I’d like to briefly introduce Park and Oh’s arguments here.

First, recall that I assume in this paper that FA involves focus movement of the remnant and PF deletion of the rest of the clause. I also assume, following Park (2013), Park and Oh (2014), among others, that multiple FAs involve multiple focus movements within a single sentence. (I will refer to this line of analysis as the “single base analysis”.) There are, however, other researchers, e.g., Ahn (2012), Ahn and Cho (2013), who suggest that multiple FAs involve multiple underlying sentences, where each remnant undergoes movement within its own sentence. (I will refer to this line of analysis as the “multiple base analysis”.) This is illustrated in (71).

- (71) nwu-ka nwukwu-lul manna-ss-ni?
 who-Nom who-Acc meet-Past-Q
 ‘Who met whom?’
 a. Cho-ka Yang-ul.
 C.-Nom Y.-Acc
 ‘Cho (met) Yang.’
 b. Cho-ka_i [~~t_i pro manna~~], Yang-ul_j [~~Cho-ka t_j manna~~]
 C.-Nom met Y.-Acc C.-Nom met

Park and Oh argue that the multiple base analysis, as outlined in (71b), cannot be the correct analysis of multiple FAs, due to the following reasons: recall that only the final remnant can omit its case marker. Under the multiple base analysis, each remnant counts as the final remnant in its own sentence. Thus, (72) is expected to be possible as an FA to the wh-question in (71), contrary to fact. To see this, compare

²⁷ In addition to being couched in a different theoretical framework, some aspects of Ku and Cho’s analysis are based on considerations of processing. (Incidentally, this is another aspect which makes it hard to extend Ku and Cho’s analysis to RNR, given the structural and interpretive differences between FA and RNR.) Given these differences and also due to space limitations, I will not go into further details of their analysis here.

(73a) and (73b), which illustrate how (72) is derived under the multiple base analysis and the single base analysis, respectively. In (73a), there are two independent deletion strings, both of which are continuous, so that the derivation is expected to be legitimate, contrary to fact. In (73b), on the other hand, given that the deletion string is discontinuous, the derivation is correctly predicted to be ungrammatical.

(72) * Cho Yang.

- (73) a. Cho-~~*ka_i*~~ [*t_i pro mannasse*], Yang-~~*ul_j*~~ [*Cho-ka t_j mannasse*]
 b. Cho-~~*ka_i*~~ Yang-~~*ul_j*~~ [*t_i t_j mannasse*]

Park and Oh's second observation is about Lasnik's (2014) analysis of multiple sluicing in English, where it is argued that the first *wh*-phrase in multiple sluicing undergoes normal *wh*-movement to the left, while the second *wh*-phrase undergoes extraposition to the right, followed by clausal ellipsis. (74) is an example of multiple sluicing in English.

- (74) ? One of the students spoke to one of the professors,
 but I don't know which to which. (Lasnik 2014, p. 4)

Lasnik does not show exactly what the structure of a sentence like (74) should look like. But, given that extraposition is constrained by the Right Roof Constraint (Ross 1967) and also because the extraposed *wh*-phrase should escape TP-ellipsis, the structure of (74) would be something like (75).

- (75) ... I don't know
-
- ```

graph TD
 CP1[CP] --- CP2[CP]
 CP1 --- towhich[to which]
 CP2 --- which[which]
 CP2 --- Cprime[C']
 Cprime --- C[C]
 Cprime --- TP[TP]

```

Given this, suppose tentatively that multiple FAs are derived in a similar way, i.e., via leftward focus movement of the first remnant and rightward movement of the second remnant, followed by TP ellipsis (cf. Ahn and Cho 2013). This idea, however, seems difficult to maintain. In particular, there does not seem to be any obvious way to capture the fact that only the final element can undergo ED. If multiple FAs are analyzed on a par with (75), it would be predicted that the first remnant, being the element associated with focus movement and clausal ellipsis, allows ED, contrary to fact. Also, more generally, it would be difficult to capture the parallelism between FA and RNR as well.

## 8 Conclusion

In this paper, I examined aspects of PF deletion and argued that it targets strings of elements. A consequence of this is that deleted elements should be adjacent to each other and, thus, form an unbroken, continuous string. I also showed that, given this property of string deletion, elements affected by PF deletion do not have to correspond to a syntactic constituent (though in many cases they do for independent reasons), unlike the usual assumption that deletion targets constituents. Furthermore, I argued that a deletion string can sometimes be extended or stretched into an ellipsis remnant up to recoverability if the remnant stays adjacent to a deletion string. This is the situation that I have been referring to as ED. I argued that postulating ED allows us to capture the omission phenomenon involving case markers, postpositions, and head nouns in FA contexts.

I also showed that RNR manifests all the properties discussed above and argued that these properties receive a straightforward account under the current analysis. Thus, there is a parallelism between FA and RNR, which has not been noted in the literature thus far. This is significant, because, as mentioned before, there have not been any serious attempts to relate FA with RNR, given the sheer differences in their structure, form, and use. An important consequence of this is that RNR, for which there have been several different analyses, employs PF deletion for its derivation.

Among the issues that remain to be explored is the extent to which the current analysis can be extended to other constructions. For instance, one may wonder about the behavior of ED in sluicing or right dislocation, illustrated in (76) and (77), respectively. That is because Merchant's (2004) analysis of FA is basically an extension of his (2001) analysis of sluicing, which employs movement and PF deletion. Though there is a variety of analyses of sluicing in Korean, they typically appeal to some type of ellipsis to derive the construction as well. (See Saito and An 2014 for relevant discussion and references.) Right dislocation has also been argued by several researchers to involve clausal ellipsis. (See Lee 2010; Takita 2014 for relevant discussion and references.)

- (76) Cho-nun [<sub>CP</sub> caki-ka way honnassnu-nci] molu-ciman,  
 C.-Top self-Nom why was.scolded-Q not.know-though  
 Yang-un [way-i-nci] anta.  
 Y.-Top why-Cop-Q knows  
 'Cho doesn't know why he was scolded, but (Saito and An 2014)  
 Yang knows why (he/she was scolded).'
- (77) Cho-ka ssu-ess-tey, i phyenci-lul.  
 C.-Nom write-Past-report this letter-Acc  
 'Allegedly, Cho wrote (it), this letter.'

Although these constructions merit further investigation, I put them aside here for future research, given the huge variety of their analyses in the literature and also the many potentially interfering factors involved in their derivation.<sup>28</sup>

Another issue left open is the question of how children know whether their language allows ED, as an anonymous reviewer asks. At the moment, I speculate that encountering an NP remnant without a case marker (or a postposition) in FA will basically be sufficient for a learner to know that ED is available in his language.<sup>29</sup> Given that FA involves movement of the remnant and that moved elements usually resist case marker drop, the learner will know that an additional process is involved. (Of course, things will be even clearer if the remnant is one of those kinds that disallow case marker drop, as discussed in Sect. 3.) In any case, given that a detailed study of language acquisition from the point of view of ED is beyond the scope of this research, the final answer should await further research.

**Acknowledgments** I thank the following people for their helpful comments and discussion: Jun Abe, Hyeyoung Kim, Heejeong Ko, Masao Ochi, Toshiko Oda, Bum-Sik Park, Daiko Takahashi, Myriam Uribe-Etxebarria, and especially, Hideaki Yamashita. I am also grateful to the anonymous reviewers and the editors of JEAL for their insightful comments that greatly helped improve this paper. Earlier versions of this paper were presented at the 11th Workshop on Altaic Formal Linguistics (University of York, England, June 5, 2015), the 10th International Workshop on Theoretical East Asian Linguistics (Tokyo University of Foreign Studies, Japan, June 14, 2015), and the 1st International Workshop on Basque-Japanese and Neighboring Languages (University of the Basque Country, Spain, December 15, 2015).

## References

- Abels, Klaus. 2003. Right node raising: Ellipsis or across the board movement? In *Proceedings of NELS 34*, ed. Keir Moulton, and Matthew Wolf, 45–59. Amherst: GLSA.
- Ahn, Hee-Don. 1999. Notes on case deletion. In *Linguistic investigations: In honor of Professor In-Seok Yang*, ed. Young-Wha Kim, Il-Kon Kim, and Jeong-Woon Park, 1–16. Seoul: Hankuk Publishing.
- Ahn, Hee-Don. 2012. *A study of fragments: Focusing on English and Korean*. Seoul: Hankuk Munhwa.
- Ahn, Hee-Don, and Sungeun Cho. 2007. Non-case-marked wh-phrases and left-dislocation. In *University of Maryland working papers in linguistics*, edited by Akira Omaki, Ivan Ortega-Santos, Jon Sprouse, and Matt Wagers, 111–141. College Park, MD: UMWPL.
- Ahn, Hee-Don, and Sungeun Cho. 2011. Notes on two types of fragments. *Linguistic Research* 28: 19–35.
- Ahn, Hee-Don, and Sungeun Cho. 2013. Notes on right dislocation in Korean. Paper presented at the 2013 Ellipsis Workshop, Dongguk University, Seoul, December 7.
- An, Duk-Ho. 2007a. Clauses in noncanonical positions at the syntax-phonology interface. *Syntax* 10: 38–79.
- An, Duk-Ho. 2007b. *Syntax at the PF interface: Prosodic mapping, linear order, and deletion*. PhD dissertation, University of Connecticut, Storrs.
- An, Duk-Ho. 2009. A note on genitive drop in Korean. *Nanzan Linguistics* 5: 1–16.
- An, Duk-Ho. 2013. What is not NP-ellipsis in Korean. In *Deep insights, broad perspectives*, ed. Yoichi Miyamoto, et al., 22–41. Tokyo: Kaitakusha.

<sup>28</sup> For instance, recall that ED (or PF deletion, more generally) is only possible up to recoverability. In this respect, whether ED is applicable to the case marker on the right-dislocated element in (77) is not immediately clear, as there is no obvious antecedent for this element. Nevertheless, it has been noted in the literature that caseless right-dislocated elements are possible. Thus, there is clearly the question whether such caseless right-dislocated elements are derived by ED or otherwise. (See, in particular, Takita 2014 for relevant discussion and references.)

<sup>29</sup> Although I do not have access to data from actual conversation, I believe such question-answer pairs are rather common in everyday communication.

- An, Duk-Ho. 2014. Genitive case in Korean and its implications for noun phrase structure. *Journal of East Asian Linguistics* 23: 361–392.
- Bak, Jeong-Sup. 2006. On the optionality of the genitive case marker *uy*. *Studies in Generative Grammar* 16: 3–18.
- Bošković, Željko. 2004. Two notes on right node raising. In *University of Connecticut working papers in linguistics 12*, edited by Miguel Rodriguez Mondonero, and Emma Ticio, 13–24. Storrs, CT: Department of Linguistics, University of Connecticut, Storrs.
- Bošković, Željko, and Howard Lasnik. 2003. On the distribution of null complementizers. *Linguistic Inquiry* 34: 527–546.
- Cheng, Lisa Lai-Shen, and Rint Sybesma. 1999. Bare and not-so-bare nouns and the structure of NP. *Linguistic Inquiry* 30: 509–542.
- Choi, Ki-Yong. 2009. *Hankwuke kyek kwa cosauy sayngsengthongsalon. (A generative grammatical analysis of case and nominal suffixes in Korean)*. Seoul: Hankwuk Mwuwhwasa.
- Choi, Kiyong. 2011. On the nature of the dependency between a numeral and a classifier. *Linguistic Research* 28: 517–542.
- Fox, Danny, and Howard Lasnik. 2003. Successive cyclic movement and island repair: The difference between sluicing and VP ellipsis. *Linguistic Inquiry* 34: 143–154.
- Fukaya, Teruhiko, and Hajime Hoji. 1999. Stripping and sluicing in Japanese. *WCCFL* 18: 145–158.
- Hong, Yong-Tcheol. 1994. Ywunhap ilonkwa kyekcosa pwnpho (Incorporation theory and the distribution of case markers). *Studies in Generative Grammar* 4: 1–43.
- Hong, Yong-Tcheol. 2004. Hankwukeu kyekcosa thallakkwa pwucau (Omission and absence of case Markers in Korean). *Phulangsu emwun kyoywuk (French Language Education)* 18: 295–314.
- Kang, Beom-Mo. 2002. Categories and meanings of Korean floating quantifiers—With some reference to Japanese. *Journal of East Asian Linguistics* 11: 375–398.
- Kim, Yong-Ha. 1998. Overt case and covert case in Korean. *Studies in Generative Grammar* 8: 177–237.
- Ku, Nahyun, and Sae-Youn Cho. 2014. Markers, index, and multiple fragment answers in Korean. *Studies in Generative Grammar* 24: 591–612.
- Lasnik, Howard. 1981. Restricting the theory of transformation. In *Explanation in linguistics*, ed. Norbert Hornstein, and David Lightfoot, 152–173. London: Longmans.
- Lasnik, Howard. 2001. When can you save a structure by destroying it? In *Proceedings of the North East Linguistic Society 31*, ed. Min-joo Kim, and Uri Strauss, 301–320. Amherst, MA: GLSA.
- Lasnik, Howard. 2014. Multiple sluicing in English? *Syntax* 17: 1–20.
- Lee, Woosung. 2010. The architecture of right dislocation constructions. *Studies in Generative Grammar* 20: 521–543.
- Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.
- Merchant, Jason. 2004. Fragments and ellipsis. *Linguistics and Philosophy* 27: 661–738.
- Mukai, Emi. 2003. On verbless conjunction in Japanese. In *Proceedings of the North East Linguistic Society 33*, edited Makoto Kadowaki and Shigeto Kawahara, 205–224. Amherst, MA: GLSA.
- Park, Bum-Sik. 2005a. *Identity and locality in ellipsis*. PhD dissertation, University of Connecticut, Storrs.
- Park, Bum-Sik. 2005b. Island-insensitive fragment answers in Korean. In *Proceedings of the 24th west coast conference on formal linguistics*, ed. John Alderete, Chung-hye Han, and Alexei Kochetov, 317–325. Somerville, MA: Cascadilla.
- Park, Bum-Sik. 2013. Multiple fragment answers in Korean. *Linguistic Research* 30: 453–472.
- Park, Bum-Sik, and Oh Sei-Rang. 2014. Multiple fragments do not mean multiple clauses. *Studies in Generative Grammar* 24: 307–323.
- Park, Myung-Kwan, and Ui-Jong Shin. 2014. On the syntax of multiple fragments in Korean. *Studies in Modern Grammar* 80: 1–22.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar*, ed. Liliane Haegeman, 281–337. Dordrecht: Kluwer Academic Publishers.
- Ross, John Robert. 1967. *Constraints on variables in syntax*. PhD dissertation, MIT.
- Saito, Mamoru, and Duk-Ho An. 2014. A comparative syntax of ellipsis in Japanese and Korean. In *Japanese syntax in comparative perspective*, ed. Mamoru Saito, 117–138. Oxford: Oxford University Press.
- Saito, Mamoru, T.-H. Jonah Lin, and Keiko Murasugi. 2008. N'-ellipsis and the structure of noun phrases in Chinese and Japanese. *Journal of East Asian Linguistics* 17: 247–271.

- Simpson, Andrew. 2005. Classifiers and DP structure in Southeast Asia. In *Oxford handbook of comparative syntax*, ed. Guglielmo Cinque, and Richard S. Kayne, 806–838. Oxford: Oxford University Press.
- Stainton, Robert. 2006. *Words and thoughts: Subsentences, ellipsis and the philosophy of language*. Oxford: Oxford University Press.
- Takita, Kensuke. 2014. Pseudo-right dislocation, the bare-topic construction, and hanging topic constructions. *Lingua* 140: 137–157.
- Yanofsky, Nancy. 1978. NP utterances. In *CLS*, ed. Donka Farkas, Wesley Jacobson, and Karol Todrys, 491–502. Chicago: Chicago Linguistics Society.