The syntax and licensing of Gapping and Fragments

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CHAPTER 4

Exceptional movement under ellipsis

1 Introduction

In chapter 2, I have argued, (following Merchant, 2004), that the remnants of Gapping and Fragments move out of the ellipsis site, as shown in (1).

(1) a. Max ate the apple and Sally [the hamburger]$_i$ ~~[ate t$_i$]~~ Gapping
b. Who did you see? - [Bill]$_i$ ~~[I saw t$_i$]~~ Fragments

The analysis of Gapping and Fragments in (1) raises many questions, such as why remnants must move out of the ellipsis site and how they do so. These questions are most prominent in the case of remnants that appear in an 'exceptional' position. For example, in (1a), *the hamburger* appears in a position where it cannot normally surface. Witness the non-elliptical version of (1a) in (2).

(2) * Max ate the apple and Sally [the hamburger]$_i$ [ate t$_i$]

Following Thoms (2013), I call the movement of *the hamburger* 'exceptional movement' (henceforth EM), a movement that only occurs under ellipsis. Although the existence of EM has been acknowledged in the literature, a satisfactory account of this phenomenon is still lacking. The only dedicated account of EM is Thoms (2013), but, as I show in section 3.2, this theory does not answer all the questions pertaining to EM. A theory of EM should at least address the following questions. First and foremost, it must account for why EM is parasitic on ellipsis. That is, why is movement of *the hamburger* possible in the elliptical (1a), but not in the non-elliptical (2)? Throughout, I will refer to this as the 'ellipsis question'. A theory of

EM should also explain the locality conditions that EM is subject to (i.e. the 'locality question'). Finally, a theory of EM should explain what type of movement EM is (e.g. A vs A') and what causes this movement to take place (i.e. the 'trigger question'). These three questions are listed in (3).

(3) **Questions to be answered by a theory of EM:**

- Why is EM parasitic on ellipsis? (Ellipsis question)
- What locality conditions is EM subject to? (Locality question)
- What triggers EM? (Trigger question)

In section 2, I review some well-known ellipsis constructions and discuss whether or not they involve EM. In sections 3.1 and 3.2, I review the literature on EM. I show that the accounts in the literature are not able to answer the questions in (3). In section 4, I introduce Fox and Pesetsky's (2005) theory of Spell-out Domains as a first step towards a theory of EM. According to this theory, Spell-out involves the transfer of a Spell-out Domain to the PF interface, where ordering statements are calculated and added to an ordering table. I show, following Fox and Pesetsky (2005) and Takahashi (2004), that exceptional movement gives rise to conflicting ordering statements and that ellipsis has the ability to eliminate conflicting ordering statements. Fox and Pesetsky's theory thus provides a solution to the ellipsis question. I proceed by arguing that Fox and Pesetsky's theory also provides an explanation for the fact that EM always lands next to the ellipsis site, but only if we assume that EM takes place counter-cyclically. As for the answer to the locality question, I show in section 5 that EM is finite clause bound. If EM is clause bound, it patterns neither with A- nor with A'-movement. It does, however, pattern with Quantifier Raising, which is also finite clause bound (cf. May, 1985). Taking the results of section 5 into account, I propose in section 6, that EM instantiates the same type of movement as Quantifier Raising, namely movement that is driven by 'interface goals' in the sense of Reinhart (2006). For EM, I hypothesize that this interface goal is *recoverability*. In the final part of this chapter, I discuss the consequences of my theory for the 'repair by ellipsis' hypothesis, according to which ellipsis can repair ungrammatical outputs of the grammar.

2 Exceptional movement

EM occurs in many ellipsis constructions (cf. Abe and Hoshi, 1997; Merchant, 2004; Takahashi, 2004; Lasnik, 1999a; Takaki, 2011; Park and Kang, 2007; Lasnik, 2013; Thoms, 2013, a.o.), though not every. This section gives for English an overview of well-known elliptical constructions and whether or not they involve exceptional movement.

Merchant (2001) argues that Sluicing involves ellipsis fed by regular *wh*-movement. The *wh*-phrase in Sluicing, see (4b), occurs in the same position as in non-elliptical sentences, see (4a). According to Merchant, the *wh*-phrase in (4b) moves

to spec,CP in the same way as the *wh*-phrase does in (4a). Under this assumption, Sluicing does not involve exceptional movement.

(4) **Sluicing - No EM**

a. I saw someone, but I don't know [who]$_i$ [I saw t$_i$]

b. I saw someone, but I don't know [who]$_i$ ~~[I saw t$_i$]~~

Multiple Sluicing in English, on the other hand, involves exceptional movement of the second *wh*-phrase. As shown in example (5a), the movement of the second *wh*-phrase is impossible in the absence of ellipsis, as English lacks multiple *wh*-fronting. As for the first *wh*-phrase, I adopt the null hypothesis that it undergoes regular *wh*-fronting, similar to the single *wh*-phrase in (4).

(5) **Multiple Sluicing - EM**

One of the students spoke to one of the professors, but …

a. * I don't know which [to which]$_i$ [spoke t$_i$]

b. I don't know which [to which]$_i$ ~~[spoke t$_i$]~~

Merchant (2004) extends Merchant's (2001) analysis of Sluicing to Fragments. He argues that fronting operations in English, such as focus movement and topicalization, drive the movement of a remnant in Fragments. Under that hypothesis, the movement we observe in (6a) is the same movement as the movement in (6b).

(6) **Fragments - No EM**

a. A: Who did you see? B: [Bill]$_i$ [I saw t$_i$]

b. A: Who did you see? B: [Bill]$_i$ ~~[I saw t$_i$]~~

Multiple Fragments involves an elliptical answer to a multiple *wh*-question.[1] Multiple Fragments differs from Fragments in that it leaves two remnants instead of one. As shown in (7), the second remnant in Multiple Fragments undergoes EM. By hypothesis, the first remnant fronts non-exceptionally, just as the single remnant in Fragments.

(7) **Multiple Fragments - EM**

A: Who bought what?

a. * B: John [a book]$_i$ [bought t$_i$] (and Mary a pencil)

b. B: John [a book]$_i$ ~~[bought t$_i$]~~ (and Mary a pencil)

As noted in chapter 1, I assume Stripping to be an instance of Gapping with one remnant. Just like the other single-remnant constructions, Sluicing and Fragments, Stripping does not involve exceptional movement. In a run-of-the-mill Stripping case, the movement of the remnant patterns with conjunction internal fronting.

[1] Since multiple *wh*-questions in English require a pair-list answer, the examples of Multiple Fragments involve a pair of Multiple Fragments. This second instance of Multiple Fragments is not necessary to illustrate its properties.

(8) **Stripping - No EM**

a. John ate macaroni and [spaghetti]$_i$, [John ate t$_i$] too

b. John ate macaroni, and [spaghetti]$_i$, ~~[John ate t$_i$]~~ too

By definition, Gapping leaves two or more remnants. The first remnant is assumed here to front in a similar fashion to the single remnant in Stripping. However, since English lacks multiple fronting, as in (9a), the second remnant can only move to its surface position exceptionally.

(9) **Gapping - EM**

a. * John ate macaroni and Bill [spaghetti]$_i$ [ate t$_i$]

b. John ate macaroni and Bill [spaghetti]$_i$ ~~[ate t$_i$]~~

Pseudogapping is standardly taken to involve VP ellipsis involving one surviving remnant (cf. Jayaseelan, 1990; Lasnik, 1995, 1999a,b; Takahashi, 2004; Gengel, 2013; Thoms, to appear). An example is given in (10). The movement of *to India* in this example can only be exceptional, since the remnants of Pseudogapping cannot surface in this position in the absence of ellipsis, see (10a).

(10) **Pseudogapping - EM**

a. * John has travelled to Spain and Bill has [to India]$_i$ [travelled t$_i$]

b. John has travelled to Spain and Bill has [to India]$_i$ ~~[travelled t$_i$]~~

The findings of this section are summarized in (11).

(11) **EM in elliptical constructions in English:**

Sluicing		✗
Multiple Sluicing	1st remnant	✗
	2nd remnant	✓
Fragments		✗
Multiple Fragments	1st remnant	✗
	2nd remnant	✓
Stripping		✗
Gapping	1st remnant	✗
	2nd remnant	✓
Pseudogapping		✓

One noteworthy property of EM that can be deduced from the cases in this section, is that EM always lands next to the ellipsis site. In the case of clausal ellipsis, one might attempt to explain this observation by saying that if EM did not land next to the ellipsis site, this would be ruled out because ellipsis could have deleted more than it did. This would not work for cases involving Pseudogapping, since in Pseudogapping, ellipsis targets a sub-clausal constituent anyway, namely a VP. Still, EM must land next to (i.e. target the sister position) of the ellipsis site, as illustrated by the contrast between (12a) and (12b).

(12) **Pseudogapping**

a. John has travelled to Spain and Bill has [to India]$_i$ ~~[travelled t$_i$]~~

b. John has travelled to Spain and Bill [to India]$_i$ has ~~[travelled t$_i$]~~

I will henceforth refer to the puzzling contrast between (12a) and (12b) as the 'landing site question'. I provide an explanation for it in section 4.2.

3 Theories of exceptional movement

3.1 Rightward movement

In the literature, Gapping, Multiple Sluicing and Pseudogapping have all been argued to involve rightward movement of the remnants that we have established to undergo EM in the previous section. The rightward movement account is attractive in that it eliminates the need to postulate exceptional leftward movement in many instances of ellipsis. To see why this is so, consider (5a), repeated here as (13a), under a rightward movement analysis, as in (13b).

(13) **Multiple Sluicing - EM**

One of the students spoke to one of the professors, but …

a. I don't know which [spoke t$_i$] [to which]$_i$

b. I don't know which ~~[spoke t$_i$]~~ [to which]$_i$

(13) shows that, if rightward movement is possible in non-elliptical contexts (13a), then there is no need to postulate exceptional movement in elliptical contexts, as shown in (13b). The hypothesis that only regular syntactic movement is possible under ellipsis is the null hypothesis. This section reviews the rightward movement proposals that have appeared in the literature.

3.1.1 Gapping

Jayaseelan (1990) argues that Gapping involves ellipsis fed by leftward movement of the first remnant, and rightward movement of the second remnant. His analysis of an example such as (1a) is sketched in (14).

(14) Max at the apple and [Sally]$_i$ ~~[t$_i$ ate t$_j$]~~ [the hamburger]$_j$

Jayaseelan provides several arguments in favor of the analysis in (14). First, he notes that this analysis explains why Gapping cannot leave more than two remnants (cf. Jackendoff, 1971; Kuno, 1976; Pesetsky, 1982). The reason, according to Jayaseelan, is that no more than one phrase can move rightward; this is shown in (15a). In the same vain, the Gapping example in (15b) is ungrammatical, because two remnants undergo rightward movement.

(15) a. * John built t_i t_j yesterday [with a hammer]$_j$ [the house that he will live in]$_i$.

b. * John built the house with a hammer and [Mary]$_i$ ~~[t_i built t_j t_k]~~ [the garage]$_j$ [with a saw]$_k$

The rightward movement account of Gapping moreover provides an explanation for the clause-boundedness of the second remnant. As Jayaseelan points out, if the second remnant in Gapping undergoes rightward movement, the prediction is that this remnant is subject to Ross's (1967) Right Roof Constraint. (16) shows that this prediction is borne out. In this example, the second remnant has moved rightwards crossing a finite clause boundary. Since this is in violation of the Right Roof Constraint, the example is ungrammatical.

(16) * John thinks that Bill will see Susan and [Harry] ~~[t_i thinks [that Bill will see t_j]]~~ [Mary]$_j$

A third piece of evidence that Jayaseelan puts forth in favor of the rightward movement account of Gapping is that it correctly predicts that a second remnant cannot strand a preposition. The example in (17b) illustrates this. As Jayaseelan points out, the ban on P-stranding follows immediately from the rightward movement account, because P-stranding is not possible under rightward movement, see (17a).

(17) a. * I talked about t_i yesterday [the man I recently met]$_i$

b. * John talked about Bill and [Mary]$_i$ ~~[t_i talked about t_j]~~ [Susan]$_j$

Although Jayaseelan's arguments seem to support a rightward movement account of Gapping, this account is not without problems. One problem is that it overgenerates. Specifically, Park and Kang (2007) observe that rightward movement of the subject of an ECM infinitival clause is impossible (18a), while the case of Gapping in (18b) shows that movement of the remnant *Mary* out of the ECM infinitival clause is allowed.

(18) a. * I believe t_i to be dishonest [the politician with high profile in international affairs]$_i$.

b. Some believe John to be the best candidate, and others Mary.

Similarly, Thoms (to appear) observes that the direct object of a ditransitive verb cannot move rightwards. Again, contrary to what the rightward movement account of Gapping predicts, the direct object of a ditransitive verb can be a remnant in Gapping.

(19) a. * John gave t_i a lot of money [the people that deserved it most]$_i$.
(Thoms, to appear)

b. John gave Bill a lot of money, and Mary Susan.

Moreover, non-heavy pronominals may be remnants too (20b), but they may not undergo Heavy NP Shift, see (20a).

(20) a. * I saw t_i yesterday $[\text{you}]_i$. (Thoms, to appear)
b. Fred tries to treat his parents well, and they him. (Hudson, 1989)

The rightward movement account of Gapping predicts that Gapping should be impossible in languages that lack rightward movement. This prediction is not borne out, though. The examples in (21) show that, whereas PPs can extrapose in Dutch (21a), DPs cannot (21b). Since the DP in (21b) is heavy, this example also shows that Dutch lacks Heavy NP Shift. Contrary to what the rightward movement of Gapping predicts, Gapping is possible in Dutch when the second remnant is a DP, as shown in (22).

(21) a. Jan heeft t_i een boek gegeven $[$aan Peter$]_i$.
John has a book given to Peter
b. ?? Jan heeft t_i geleend $[$een zware hamer met een goede grip$]_i$.
John has borrowed a heavy hammer with a good grip

(22) Jan heeft een hamer geleend en Peter een zaag.
John has a hammer borrowed and Peter a saw

The examples in (18)-(22) show that the rightward movement account of Gapping undergenerates: phrases that may not undergo rightward movement are nonetheless possible as non-initial remnants in Gapping. In the face of (17)-(19), one might suppose that Gapping in English involves rightward movement, whereas Gapping in Dutch does not. Aelbrecht (2007), for instance, argues that Dutch Gapping is derived by ellipsis fed by leftward focus movement of the remnants. If in English, the second remnant of Gapping moves rightwards, whereas all remnants move leftwards in Dutch, this might explain why there is a restriction on the number of remnants in English that is not found in Dutch. Whereas English only allows for two remnants under Gapping, in Dutch, there is no restriction on the number of remnants (Neijt, 1979). (23) is an example with three remnants.

(23) Jan heeft Marie een boek gegeven en Peter Suzan een CD.
John has Mary a book given and Peter Susan a CD
'John has given Mary a book and Peter has given Susan a CD.'

If the limitation on the number of remnants only holds for English, it might be that remnants escape ellipsis by rightward movement only in English. However, the hypothesis that English Gapping differs from Dutch Gapping in the way the remnants escape the ellipsis site loses credence by the fact that Dutch Gapping is clause bound, too.

(24) * Jan denkt dat Bill Suzan zal zien en Harry Marie.
John thinks that Bill Susan will see and Harry Mary
(Intended:) 'John thinks Bill will see Susan and Harry thinks Bill will see Susan.'

The idea that remnants in Dutch escape ellipsis by leftward movement is plausible, given that rightward movement is unavailable, at least for DPs. Consequently, the fact that the movement of a non-initial remnant is finite clause bound cannot be taken as an argument for rightward movement. As this also holds for English, the rightward movement account of Gapping loses much of its appeal. Moreover, we have already seen that the rightward movement account undergenerates for English. Taking all of this into account, I conclude that Gapping in English and in Dutch, is not derived by rightward movement of the remnants. I adopt the hypothesis that the remnants of Gapping uniformly move leftwards, both in English (cf. Coppock, 2001; Johnson, 2004, 2009) and in Dutch. This hypothesis is in line with the facts that both English Gapping and Dutch Gapping are extremely similar. That is, English and Dutch Gapping have the same syntax (cf. chapter 2), show the same distribution and are licensed in the same way (cf. chapter 3). These observations strongly favor a uniform analysis. The only problem left for a uniform leftward movement account of the remnants in Gapping are the P-stranding facts. As we will see below, the facts about P-stranding under ellipsis are complicated and, at this point, do not warrant any conclusions about the direction of movement.

3.1.2 Multiple Sluicing

Nishigauchi (1998) and Lasnik (2013) observe that the second *wh*-phrase in Multiple Sluicing is clause bound, just as the second remnant in Gapping. This is illustrated in (25a). For this and other reasons, Nishigauchi and Lasnik adopt Jayaseelan's (1990) Gapping analysis for Multiple Sluicing. (25b) illustrates why (25a) is ungrammatical under the rightward movement account. The reason is that the second remnant violates the Right Roof Constraint.

(25) a. * One of the students said that Mary spoke to one of the professors, but I don't know which student to which professor.

b. * One of the students said that Mary spoke to one of the professors, but I don't know [which student]$_i$ ~~[t$_i$ said that Mary spoke t$_j$]~~ [to which professor]$_j$

The rightward movement account of Multiple Sluicing is further supported by the fact that the second *wh*-remnant cannot strand a preposition. As shown in (26b), if the second remnant moves rightward, P-stranding leads to ungrammaticality. Under a rightward movement account, this ungrammaticality follows from a general ban on P-stranding under rightward movement, illustrated in (26a).

(26) a. * A linguist spoke about t$_i$ yesterday [some paper about Sluicing]$_i$.

b. ?* Some linguist spoke about some paper on Sluicing, but I don't know [which linguist]$_i$ ~~[t$_i$ spoke about t$_i$]~~ [which paper on Sluicing]$_j$.

To give further support for the rightward movement analysis, Lasnik notes that the grammaticality of Multiple Sluicing tracks the possibility for the second remnant to undergo rightward movement. In (27a), extraposition of the PP *to who* is possible.

(27b) shows that this PP can also be a second remnant in Multiple Sluicing. The 'light' DP *what* in (28a), on the other hand, cannot extrapose. As correctly predicted by the rightward movement account, this light DP also cannot be a second remnant either, see (27b).

(27) a. Who was talking t_i yesterday [to who]$_i$?
b. Someone was talking (yesterday) to someone, but I don't know [who] ~~[t_i was talking t_j]~~ [to who]$_j$.

(28) a. ?* Who bought t_i yesterday [what]$_i$?
b. ?* Someone bought something, but I don't know [who] ~~[t_i bought t_j]~~ [what]$_j$.

Lasnik furthermore points out that if the second *wh*-phrase is 'heavier', Heavy NP Shift is possible (29a) and so is Multiple Sluicing (29b).

(29) a. Which linguist criticized t_i yesterday [which paper about sluicing]$_i$?
b. ? Some linguist criticized (yesterday) some paper about Sluicing, but I don't know [which linguist]$_i$ ~~[t_i criticized t_j]~~ [which paper about Sluicing]$_j$.

(25)-(29) illustrate that the possibility of Multiple Sluicing seems to pattern with the availability of rightward movement. However, there are also cases in which the availability of rightward movement and the possibility of Multiple Sluicing diverge. We saw in (18a), repeated here as (30), that rightward movement of the subject of an ECM infinitival clause is impossible (Park and Kang, 2007). Nonetheless, as shown in (31), subjects of an ECM clause can be the second remnant in Multiple Sluicing. As Park and Kang (2007) point out, the grammaticality of (31) is unexpected under the rightward movement analysis, since this analysis predicts that Multiple Sluicing should only be possible when rightward movement is also.

(30) a. * I believe t_i to be dishonest [the politician with high profile in international affairs]$_i$.

(31) a. One of the boys believes behind one of the trees to be the best place to hide, but I don't know [which] [behind which tree].
b. One of the RAs expects from one of the cells to emerge a tiny being, but I don't know [which] [from which cell].

Similarly, we saw that the direct object of a ditransitive verb cannot move rightwards (Thoms, to appear). This is shown in (32a), repeated from (19a). (32b) shows that a direct object of a ditransitive verb can be a remnant in Multiple Sluicing. This is problematic for the rightward movement account of Multiple Sluicing for the same reason the examples in (31) are.

(32) a. * John gave t_i a lot of money [the people that deserved it most]$_i$.
(Thoms, to appear)

b. Some student gave some professor a lot of money, but I don't know [which student] [which professor].

It is clear from (31) and (32) that Multiple Sluicing is not fed by (regular) rightward movement. This conclusion is supported by the fact that Multiple Sluicing even occurs in languages such as Dutch and Korean, which do not allow rightward movement (nor do they have multiple *wh*-fronting). As we saw in the previous section, DPs in Dutch cannot undergo rightward movement (cf. (21b)). This is once again illustrated in (33a,b), this time for *wh*-phrases. Problematic for the rightward movement account of Multiple Sluicing, is that the DP that fails to undergo rightward movement in (33b) can nonetheless be a second remnant in Multiple Sluicing, as shown in (33c).

(33) a. Welke linguïst heeft welk paper over Sluicing becritiseerd vandaag?
which linguist has which paper on Sluicing criticized today
'Which linguist criticized which paper on Sluicing today?'

b. * Welke linguïst heeft *t* becritiseerd vandaag [welk paper over sluicing]

c. Een linguïst heeft vandaag een paper over Sluicing bekritiseerd, maar
a linguist has today a paper about Sluicing criticized but
ik weet niet welke linguïst welk paper over Sluicing.
I know not which linguist which paper on Sluicing
'A linguist criticized a paper on Sluicing today, but I don't know which linguist which paper on Sluicing.'

Park and Kang (2007) show that Korean also has Multiple Sluicing, see (34a). Yet, just like Dutch, this language lacks rightward movement. They also point out that the clause boundedness of Multiple Sluicing is observed in this language. This is shown in (34b).

(34) a. nuwkuwnka-ka etten iyaki-ul malhayss-ciman, na-nun [nuw-ka
someone-NOM some story-ACC said-but I-TOP who-NOM
etten iyaki-inci] kiekha mos hanta.
which story-COMP remember not do
'Someone told some story, but I cannot remember who which story.'

b. * Mary-ka nuwkuwnka-eykey [John-i etten umsik-ul
Mary-NOM someone-to John-NOM some food-ACC
cohahanta-ko] malhayss-ciman, kunye-nun [nuwkuw-eykey etten
like-COMP said-but Mary-TOP whom-to which
umsik-inci] kiekhaci mos hanta
food-Q remember not do
'Mary said to someone that [John liked some food], but Mary cannot remember to whom which food.' Park and Kang (2007)

The contrast in (35) shows that the clause boundedness of second remnants in Multiple Sluicing is observed in Dutch, too.

(35) a. Een student zag een linguïst, maar ik weet niet welke student welke linguïst
a student saw a linguist but I know not which student which linguist

b. * Een student zei dat Marie een professor zag, maar ik weet niet welke student welke professor.
a student said that Mary a professor saw, but I don't know which student which professor

Since Dutch and Korean do not allow rightward movement, the clause boundedness of Multiple Sluicing observed in (34) and (35) cannot be caused by rightward movement. This conclusion deprives the rightward movement of one of the core arguments in favor of it. The argument that still stands is that the second remnant in Multiple Sluicing patterns to a large extent (crucially, as we have established from (31) and (32), not to the full extent) with phrases capable of undergoing rightward movement. I will provide a tentative alternative explanation for this observation in section 6. The other argument in favor of a rightward movement account of Multiple Sluicing is the impossibility of P-stranding under Multiple Sluicing. As already mentioned, though, the P-stranding facts do not warrant any decisive conclusions.

At this point, there is no conclusive evidence for the rightward movement account of Multiple Sluicing. However, as I showed in this section, there are several facts that argue against it. For this reason, I adopt the leftward movement account of Multiple Sluicing as it appears in Merchant (2001) and Richards (2001).

3.1.3 Pseudogapping

Jayaseelan (1990) provides an analysis of Pseudogapping in terms of VP ellipsis plus rightward movement of the remnant. The main argument in favor of postulating rightward movement is that the remnant cannot strand a preposition. As (36a) shows, stranding a preposition is not possible under rightward movement. Under Jayaseelan's analysis, the ungrammaticality of (36b) is due to the fact that the remnant that moves rightwards strands a preposition.

(36) a. * John counted on t_i for support $[\text{a total stranger}]_i$.

b. * You cannot count on a stranger,
but you can $\overline{[_{\text{VP}}\ \text{~~count on } t_i\text{~~}]}\ [\text{a friend}]_i$.

Jayaseelan's analysis predicts that remnants in Pseudogapping can never strand a preposition. Lasnik (1999a,b) points out, however, that the result of P-stranding under Pseudogapping is not always ungrammatical (cf. also Thoms (to appear) who reports that his informants disagree that (36b) is ungrammatical).

(37) John spoke to Bill and Mary should Susan.

Another problem for the rightward movement account is that some phrases that cannot undergo rightward movement, can nonetheless be remnants of Pseudogapping. Indirect objects, for example, can be remnants, see (38b) (repeated from (32a)), but they cannot undergo Heavy NP Shift, as shown in (38a).

(38) a. * John gave t_i a lot of money [the people that deserved it most]$_i$.
(Thoms, to appear)

b. ? John gave Bill a lot of money, and Mary will Susan.
(Lasnik, 1999b)

Likewise, non-heavy pronominals may be remnants too (39b), but they cannot be the target of Heavy NP Shift either (39a).

(39) a. * I saw t_i yesterday [you]$_i$. (Thoms, to appear)

b. ? I didn't expect John to like it, but I did you. (Lasnik, 1999b)

These arguments constitute strong evidence that the remnant in Pseudogapping does not survive ellipsis by rightward movement (i.e. Heavy NP Shift or extraposition). Therefore, I adopt the hypothesis that the remnant of Pseudogapping undergoes leftward movement to an IP-internal position (Jayaseelan, 2001; Gengel, 2013; Thoms, 2010, 2013).[2]

3.1.4 Summary

In this section, I have reviewed the theories that postulate that remnants move rightwards. All of these theories fall short for two main reasons. First, all of the theories undergenerate. For all of Gapping, Multiple Sluicing and Pseudogapping, we have seen cases in which a phrase that cannot move rightwards survives as a remnant. Second, Gapping and Multiple Sluicing are possible in languages that lack rightward movement. What's more, all of these theories beg the question as to why a remnant would move rightwards in the first place.[3]

Finally, I would like to consider how the rightward movement theories fair with regard to the questions in (3) (repeated here as (40)), which any theory of movement under ellipsis should account for. The rightward movement accounts postulate that rightward movement of remnants involves extraposition or Heavy NP Shift. This predicts that the movement that remnants undergo is possible outside of ellipsis contexts. As we have seen in this section, this is correct. The rightward movement

[2] Lasnik argues that the remnant of Pseudogapping moves leftward to spec,AgrOP to get case. Thoms (to appear) points out that this analysis undergenerates. First, PPs can be remnants in Pseudogapping, yet they do not need case. Second, objects of embedded clauses (ia), indirect objects (ib) and direct object in ditransitives (ic) can be remnants in Pseudogapping. As Thoms points out, all of these remnants should induce an A-Minimality violation because another case-bearing phrase is in the way.

i. ? Kathy wants to study astronomy, but she doesn't meteorology. (Lasnik, 2006)

ii. ? The DA will prove Jones guilty and the assistant will Smith. (Lasnik, 1999b)

iii. ? Although John wouldn't give Bill the book, he would the paper. (Baltin, 2003)

[3] Abe and Hoshi (1997) suggest for Gapping that the second remnant moves rightwards, because only one phrase can adjoin to a constituent. They argue that the leftward moved remnant adjoins to TP and that the rightwards moved phrase adjoins to T' (where the direction of adjunction is indirectly governed by the head parameter). I refer the reader to the original paper for their precise implementation. It should be clear, however, that the hypothesis that only one phrase can adjoin to a constituent, is not able to account for why there is no limit on the number of remnants in languages like Dutch.

account also answers the locality question. If the second remnant in Gapping and Multiple Sluicing and the single remnant of Pseudogapping move rightwards, the clause boundedness immediately follows, since rightward movement is subject to the Right Roof Constraint. Lastly, the trigger question reduces to the question of what triggers extraposition and HNPS, a question not directly related to ellipsis.

(40) **Questions to be answered by a theory of EM:**

- Why is EM parasitic on ellipsis? (Ellipsis question)
- What locality conditions is EM subject to? (Locality question)
- What triggers EM? (Trigger question)

All in all, then, the rightward movement account does an admirable job at accounting for the properties of movement under ellipsis. The main problem for the rightward movement account is that it undergenerates. For English, I have shown that phrases incapable of undergoing rightward movement can nonetheless be remnants of ellipsis. From a cross-linguistically perspective, the problem of undergeneration is arguably even more severe. The fact that most of these elliptical constructions are also possible in languages that lack rightward movement, means that, whatever the direction of the movement of remnants is in these languages, it will always be exceptional movement. This is so, because the movement is not possible in non-elliptical contexts, neither rightward nor leftward.

All of the accounts that postulate rightward movement of (non-initial) remnants have brought forth the argument that they disallow P-stranding. For Pseudogapping, we have seen that P-stranding is, in fact, possible. As noted by Thoms (2013), Multiple Fragments also allow for P-stranding:

(41) A: Who did you speak to about what?
B: Mary (about) the weather, and Rab (about) the government.

In section 2, I showed that the second remnant in Multiple Fragments moves exceptionally. At this point, then, it is not clear what exactly the link is between EM and P-stranding. I leave this topic for future research.

3.2 LF parallelism

In this section, I discuss Thoms' (2013) theory of EM. His proposal is based on LF parallelism and builds on the works by Fox and Lasnik (2003) and Griffiths and Lipták (2014). I provide a summary of the account in the next section. In section 3.2.2, I show that Thoms' LF parallelism theory suffers from conceptual and empirical problems. Moreover, I show that it does not meet the requirements on a theory of EM (cf. (40)).

3.2.1 Thoms (2013)

Thoms (2013) argues that EM is not constrained by syntax, but that its application is subject to an LF parallelism constraint, as informally stated in (42). It follows from

the definition in (42) that LF parallelism is a condition that is only active under ellipsis.

(42) **LF parallelism (Fox and Lasnik, 2003):**
Variables in the antecedent A and the elliptical clause E must be bound from parallel positions.

Thoms shows that LF parallelism captures why, in ellipsis constructions with more than one remnant, the two remnants must be clause mates (the Clause Mate Condition, Lasnik 2013). Consider the contrast between the Multiple Sluicing examples in (43) and (44). In both (43) and (44), the *wh*-phrase *what* in the antecedent takes scope over the matrix clause at LF. As dictated by LF parallelism, the trace/variable of the remnant in the ellipsis site must be bound from the same position. This is the case in (43), where *a book* takes matrix scope. In (44), on the other hand, the *wh*-phrase *what* takes clause bound scope at LF in the antecedent (cf. Dayal, 2002). The corresponding remnant in the ellipsis site, *a book*, on the other hand, takes scope over the matrix clause, where it binds its trace. LF parallelism is thus not satisfied in (44) and the sentence is therefore ungrammatical.[4]

(43) a. A: Who bought what?
B: John a book (and Mary a pencil).
b. LF_A $[[\text{who}]_i\ \lambda\text{x}.[\text{what}]_j\ \lambda\text{y}.[\text{x}_i\ \text{bought}\ \text{y}_j]]$
LF_E $[[\text{John}]_i\ \lambda\text{x}.[\text{a book}]_j\ \lambda\text{y}.[\text{x}_i\ \text{bought}\ \text{y}_j]]$

(44) a. A: Who said you bought what?
B: *John a book (and Mary a pencil).
b. LF_A $[[\text{who}]_i\ \lambda\text{x}.[\text{x}_i\ \text{said}\ [\text{what}]_j\ \lambda\mathbf{y}.[\text{you bought}\ \mathbf{y}_j]]$
LF_E $[[\text{John}]_i\ \lambda\text{x}.[\text{a book}]_j\ \lambda\mathbf{y}.[\text{x}_i\ \text{said you bought}\ \mathbf{y}_j]]$

Next, we consider elliptical structures with a single remnant, comparing cases in which there is a contrastive correlate in the antecedent with cases where there is a non-contrastive correlate in the antecedent. To begin with the latter, consider (45), which features a non-contrastive correlate *a Balkan language*. This correlate can be bound in situ from the matrix clause via choice function mechanisms (cf. Reinhart, 1997). The fact that the correlate takes matrix scope in the antecedent, allows the corresponding remnant, *Serbo-Croatian* to move to, and take scope from, the corresponding position in the ellipsis clause (even crossing an island boundary).

(45) a. A: I heard they hired someone who speaks a Balkan language fluently.
B: Yeah, Serbo-Croatian.
b. LF_A $\exists\text{f}[\text{I heard they hired someone who speaks f(a Balkan language)}]$.
LF_E $[\text{Serbo-Croatian}]\ \lambda\text{x}_i.[\text{I heard they hired someone who speaks x}_i]$

[4] I refer the reader to Thoms (2013) and Park and Kang (2007) for the LF parallelism account of Multiple Sluicing, which runs parallel to the discussion in the main text about Multiple Fragments.

According to Thoms, contrastively focused phrases take clause bound scope at LF by undergoing Quantifier Raising. This explains the contrast between (45) and (46). In (46), the contrastively focused correlate *Bulgarian* takes clause bound scope at LF, see LF_A in (46b). The corresponding remnant in LF_E, *Serbo-Croatian*, takes matrix scope. Since the traces of the correlate *Bulgarian* and the remnant *Serbo-Croatian* are not bound from identical positions, this derivation is ruled out by LF parallelism.

(46) a. A: I heard they hired someone who speaks BULGARIAN fluently.
B: *No, SERBO-CROATIAN.

b. LF_A [I heard they hired someone [Bulgarian]$_i$ $\lambda\mathbf{x}$.[who speaks $\mathbf{x}_i$]].
LF_E [Serbo-Croatian]$_i$ $\lambda\mathbf{x}$.[I heard they hired someone who speaks $\mathbf{x}_i$]

To summarize Thoms' (2013) theory, the idea is that EM is not constrained in the syntax, but its application is subject to the independent requirement of LF parallelism. Part of the elegance of the LF parallelism theory is that it makes use of a condition for which there is independent support outside the domain of EM.[5] Unfortunately, this theory suffers from several conceptual and empirical problems.

3.2.2 Problems for the LF parallelism account of EM

In this section, I discuss several problems for the hypothesis that EM is constrained by LF parallelism. To begin with, the LF parallelism theory fails to meet all the requirements that a theory of EM should meet. That is, it fails to address all the questions in (40), repeated here as (47).

(47) **Requirements on a theory of EM:**

- Why is EM parasitic on ellipsis? (Ellipsis question)
- What locality conditions is EM subject to? (Locality question)
- What triggers EM? (Trigger question)

One question that the LF parallelism theory does answer is the locality question. The answer to this question is that EM is not constrained by any locality conditions (cf. the island violation in (45)). One of the problems with the claim that EM is not constrained by syntactic locality conditions, is that it leaves no room for cross-linguistic variation. That is, if EM is unconstrained under ellipsis, it should be so in any language. In section 5, I show that there is, contrary to what the LF parallelism theory predicts, cross-linguistic variation with regard to movement under ellipsis.

Since LF parallelism is a condition on ellipsis, it may appear as if the LF parallelism theory also answers the ellipsis question. This is not the case, though. Under the LF parallelism theory, the question remains what constrains EM when no ellipsis applies. Because LF parallelism does not come into play when no ellipsis takes place, the expectation is that nothing constrains EM when no ellipsis applies. This

[5] LF parallelism was first postulated in Fox (2000) to explain scope parallelism in conjunctions.

is clearly incorrect, as EM only occurs under ellipsis, but in the absence of ellipsis, EM is impossible, see the contrast between (48a) and (48b).

(48) a. * John has travelled to Spain and Bill has [to India]$_i$ travelled t$_i$

exceptional movement

b. John has travelled to Spain and Bill has [to India]$_i$ [$_{\text{VP}}$ ~~travelled t$_i$~~]

The answer to the trigger question under the LF parallelism theory is that it is not triggered at all. Application of EM is free, as long as LF parallelism is obeyed. Again, this is problematic when non-elliptical structures are considered. If nothing triggers EM, why can't EM be triggered in the absence of ellipsis?

These considerations lead to the conclusion that EM is constrained by some factor and that this factor is absent when ellipsis applies and not the other way around. EM is not more constrained (e.g. by LF parallelism) when ellipsis applies, rather it is less constrained: a movement is possible in elliptical, but not in non-elliptical structures. Likewise, there must be something that triggers EM under ellipsis, and this trigger must be absent when no ellipsis applies (see section 6).

Another theoretical problem for the LF parallelism theory is the following. Under the LF parallelism theory, the LF position of the correlate determines the LF position of the remnant. However, it does not follow from this that the LF position of the remnant should be the same as the *PF position* of the remnant. Since May (1977), it is well-known that PF spell-out position and LF scope position do not always coincide. To make the problem more concrete, consider the example in (49). Nothing in the LF parallelism theory rules out (49a) with the derivation in (49b). In this derivation, LF$_A$ and LF$_E$ satisfy LF parallelism: the remnant *a book* and its corresponding correlate *what* take scope over the embedded clause, binding their trace from an identical position. At PF, *a book* is spelled out in a left-peripheral position in the matrix clause. In other words, *a book* has moved into the matrix clause in the syntax, but at LF reconstructs to (i.e. is interpreted in) a position where it scopes only over the embedded clause, thereby satisfying LF parallelism. The problem is even more severe if the de dicto reading in (49), in which John and Mary do not have a specific book and pencil in mind, involves narrow scope of the indefinite with respect to the intensional verb (Russell, 1905; Fodor, 1970; Montague, 1973; Partee, 1974; Cresswell and Stechow, 1982; Keshet, 2008, a.o.). In that case, (49b) is in fact the only possible LF/PF representation for (49aB).

(49) a. A: Who believed you bought what?
B: *John a book, and Mary a pencil.

b. LF$_A$ [[who]$_i$ λx.[x$_i$ believed [what]$_j$ λy.[you bought y$_j$]]
LF$_E$ [John]$_i$ λx.[x$_i$ believed [a book]$_j$ λy.[you bought y$_j$]]
PF$_E$ [[John]$_i$ [a book]$_j$ [t$_i$ believed you bought t$_j$]]

Next to these conceptual problems, there are empirical problems for the LF parallelism theory, as well. One problem is that, if contrastively focused correlates take

clause bound scope by Quantifier Raising, (50) should be ungrammatical, since no LF parallelism obtains. The focused correlate *Greek* takes scope over the embedded clause at LF, but the corresponding remnant *Albanian* takes matrix scope (50b).[6]

(50) a. A: Did Abby claim she speaks GREEK fluently?
B: No, ALBANIAN.
b. LF_A [did Abby claim [Greek]$_i$ $\lambda\mathbf{x}$.[she speaks $\mathbf{x}_i$ fluently]]
LF_E [[Albanian] $\lambda\mathbf{x}_i$[Abby claimed she speaks $\mathbf{x}_i$ fluently]]

A final drawback of the LF parallelism theory, is that it leaves unexplained what I have called the landing site question (i.e. why EM must land next to the ellipsis site), illustrated by the contrast between (51a) and (51b).

(51) a. John has travelled to Spain and Bill has [to India]$_i$ [$_{\text{VP}}$ ~~travelled t_i~~].
b. * John has travelled to Spain and Bill [to India]$_i$ has [$_{\text{VP}}$ ~~travelled t_i~~].

Under the LF parallelism theory, the landing site of EM is constrained by the LF position of the correlate. The answer to the question why the remnant lands next to the ellipsis site, is thus that it is a coincidence: the correlate happens to be in an identical position in the non-elliptical antecedent. It seems the LF parallelism theory overlooks a generalization here. I provide an answer to the landing site question in section 4.2.

To sum up, Thoms' (2013) theory of EM in terms of LF parallelism suffers from conceptual as well as empirical problems. Moreover, I showed that it fails to meet the requirements on a theory of EM (cf. (47)). In the next section, I explore an alternative view on EM, retaining the idea that EM involves leftward movement.

4 EM and ordering statements

In this section, I answer the ellipsis question and the landing site question. I will implement my proposal in Fox and Pesetsky's theory of Spell-out Domains.

4.1 Answering the ellipsis question

Fox and Pesetsky (2005) (henceforth F&P) present a theory of Spell-out Domains that is based on Chomsky's (2000; 2001) notion of *phases* (vP and CP). However, F&P's theory differs from Chomsky's in how cyclicity is derived in that it does not postulate 'phase impenetrability'.[7] Under F&P's conception, it is not the uninterpretability of features that drives movement of a phrase out of a Spell-out Domain

[6] Thoms (to appear) solves this issue by arguing that focused correlates in clausal ellipsis can also take scope by in situ choice function mechanisms. Since this addition does not solve any of the other problems of the LF parallelism theory, I refrain from discussing it here.

[7] Under Chomsky's conception, phasal domains are sent off to the PF and LF interfaces at the point of Spell-out. After sending a phase off to the interfaces, it is impenetrable for further syntactic computations. The main consequence of phase impenetrability is that any uninterpretable feature must have vacated the Spell-out Domain prior to Spell-out. If it does not, this unvalued uninterpretable feature will be unable to become valued and consequently cause the derivation to crash at (one of) the interfaces.

(and thus cyclic movement), but considerations of linear precedence. At the point of Spell-out, Linearization applies. I give F&P's definitions of Spell-out Domain and Linearization in (52).

(52) **Spell-out Domains**

a. Spell-out Domain: domains whose construction is immediately followed by linearization (roughly Chomsky's notion of *phases* (CP, DP, *v*P/VP).

b. Linearization adds new ordering statements to the set of statements established by the linearization of previous Spell-out Domains.

Linearization adds ordering statements to an ordering table. What drives cyclic movement is that, once a phrase α gets ordered, say after another phrase β, α cannot come to precede β in a later stage of the derivation. α can only come to precede β by moving across β prior to Spell-out (i.e. prior to the calculation of ordering statements). To illustrate how this derives cyclicity, consider the following schematic scenario's.

The Spell-out Domain D in scenario 1 in (53) contains X, Y and Z. At the point of Spell-out, Linearization applies and ordering statements of the elements within D are added to an ordering table, see (53a). Upon Spell-out of the next Spell-out Domain D', Linearization adds new ordering statements to the ordering table. Note that X has moved from an edge position of D to a position within D'. This is possible, since X preceded all other elements within D.

(53) **Scenario 1 (Movement from an edge position)**

a. $[_{D}\ X\ Y\ Z\ ]$
Ordering table:
X<Y, X<Z
Y<Z

b. $[_{D'}\ \ldots\ X\ W\ [_{D}\ t_{X}\ Y\ Z\ ]$
Updated ordering table:
X<W, X<Y, X<Z
W<Y, W<Z
Y<Z

(54) **Scenario 2 (Movement from non-edge position)**

a. $[_{D}\ X\ Y\ Z\ ]$
Ordering table:
X<Y, X<Z
Y<Z

b. * $[_{D'}\ \ldots\ Y\ W\ [_{D}\ X\ t_{Y}\ Z\ ]$
! *Updated ordering table:*
Y<W, **Y**<**X**, Y<Z
W<X, W<Z
X<**Y**, X<Z

Scenario 2 in (54) illustrates what happens when a phrase moves out of a Spell-out Domain when it does not precede all other elements within that Spell-out Domain. Upon Spell-out of D in (54a), Y is ordered before Z and after X (i.e. X<Y, Y<Z). In (54b), Y has moved out of D into D' crossing W. Upon Spell-out of D', the ordering statements Y<W and Y<X are added to the ordering table. At this point, the ordering table contains an ordering contradiction, namely X<Y and Y<X.[8] That is, Y is required to both preceed and follow X. Subsequently, this derivation will crash at the PF interface.

Cyclicity follows in F&P's theory, as a consequence of the fact that the linear ordering of syntactic units is fixed at the point of Spell-out. If a phrase must check features in a higher Spell-out Domain, the only way for it to get there, is to move via the edge of its current Spell-out Domain.

F&P argue that ellipsis makes non-edge movement possible. They submit that ellipsis eliminates all ordering statements making reference to elements contained in the ellipsis site. Consider scenario 3 in (55), which differs from scenario 2 in (54) in that D gets elided. The ordering conflict (X<Y, Y<X) caused by movement of Y in (55b) is resolved by ellipsis when ellipsis applies in (55c). Ellipsis eliminates all ordering statements that make reference to elements within the ellipsis site. In this case, the ellipsis site contains X and Z. Hence, all ordering statements that make reference to X and Z will be eliminated. Since this includes the ordering statements X<Y and Y<X, the ordering conflict that caused the derivation in scenario 2 to crash, is resolved.

(55) **Scenario 3 (Movement from non-edge position (i.e. scenario 2) followed by ellipsis)**

a. $[_{D}$ X Y Z $]$
Ordering table:
X<Y, X<Z
Y<Z

b. $[_{D'}$ … Y W $[_{D}$ X t_{Y} Z $]$
! *Updated ordering table:*
Y<W, **Y**<**X**, Y<Z, Y<Z
W<X, W<Z
X<**Y**, X<Z

c. $[_{D'}$ … Y W ~~$[_{D}$ X t_{Y} Z $]$~~
Updated ordering table:
Y<W, ~~**Y**<**X**~~, ~~Y<Z~~, ~~Y<Z~~
~~W<X~~, ~~W<Z~~
~~**X**<**Y**~~, ~~X<Z~~

Let's now consider an empirical illustration of scenarios 2 and 3. Takahashi (2004) shows that F&P's theory of Spell-out Domains, plus the assumption that ellipsis

[8] I indicate an ordering table that creates an ordering conflict with *!*. This indicates that there is an ordering conflict, but it does not mean that the derivation will ultimately turn out to be ungrammatical.

eliminates ordering statements, explains why EM is possible in Pseudogapping. Consider first the case in (56), where no VP ellipsis applies (this example corresponds to scenario 2 in (54)). Within the VP Spell-out Domain, we have the ordering statement *travelled<to India*.[9] When *to India* moves to a position outside the VP, see (56b), this PP comes to proceed *travelled*. Upon spell-out of the TP Spell-out Domain, the ordering statement *to India<travelled* is added to the ordering table, creating an ordering conflict, see the ordering table in (56b).

(56) * (John has travelled to Spain and) Bill has [to India]$_i$ travelled t$_i$.

a. [$_{\text{VP}}$ travelled to India].
Ordering table VP Spell-out Domain:
travelled < to India

b. ***to India* undergoes EM**:
[$_{\text{TP}}$ Bill has [to India]$_i$ [$_{\text{VP}}$ travelled t$_i$]].
! *Ordering table TP Spell-out Domain:*
Bill < has, Bill < to India, Bill < travelled
has < to India, has < travelled
to India < travelled
travelled < to India

The example in (57) illustrates scenario 3 in (55), with D as the VP. Ellipsis of the VP eliminates all the ordering statements that make reference to elements within the VP. Since the VP includes *travelled*, both ordering statements *travelled<to India* and *to India<travelled* are deleted from the ordering table. The ordering conflict is thus resolved by ellipsis and the derivation is grammatical. Note that it is crucial to stipulate that the movement of *to India* does not take place via the edge of the VP. If *to India* were to move to the edge of VP prior to spell-out of the VP, *to India* will not be stated to follow *travelled* at any point in the derivation. The prediction in that case is that the derivation without ellipsis would be grammatical as well, contrary to fact (cf. (51a)).

(57) (John has travelled to Spain and) Bill has [to India]$_i$ ~~[$_{\text{VP}}$ travelled t$_i$]~~.

a. [$_{\text{VP}}$ travelled to India].
Ordering table VP SOD:
travelled < to India

b. ***to India* undergoes EM**
[$_{\text{TP}}$ Bill has [to India]$_i$ [$_{\text{VP}}$ travelled t$_i$]].
! *Ordering table TP SOD:*
Bill < has, Bill < to India, Bill < travelled
has < to India, has < travelled
to India < travelled
travelled < to India

[9] For convenience sake, I am abbreviating '*to<India*' here as *to India*.

c. **VP ellipsis:**
$[_{TP}$ Bill has [to India]$_i$ ~~$[_{VP}$ travelled t$_i$]~~$]$.
Updated ordering table:
Bill < has, Bill < to India, ~~Bill < travelled~~
has < to India, ~~has < travelled~~
~~**to India < travelled**~~
~~**travelled < to India**~~

At this point, we have answered the ellipsis question: EM is possible only in ellipsis contexts, because in ellipsis contexts the conflicting ordering statements induced by EM can be deleted, a form of repair by deletion.

4.2 Answering the landing site question

Next, I address the landing site question. The question is, why does *to India* have to land next to the ellipsis site in (51a)? That is, why is (51b) ungrammatical? As it stands, there is nothing that leads us to suspect this example to be ungrammatical. Consider the derivation in (58a-c). At the point of spell-out of the VP, *to India* is not ordered with respect to *has*, because *has* has not been merged in the structure yet. At the point of spell-out of the TP, *to India* has moved over *has*, leading to the ordering statement *to India<has*. The only ordering conflict, namely *travelled<to India - to India<travelled*, is resolved by VP ellipsis as before.

(58) * John has travelled to Spain and Bill to India has.

a. $[_{VP}$ travelled to India$]$.
Ordering table VP Spell-out Domain:
travelled < to India

b. ***to India* undergoes EM**
$[_{TP}$ Bill [to India]$_i$ has $[_{VP}$ travelled t$_i$]$]$.
! *Ordering table TP Spell-out Domain:*
Bill < to India, Bill < has, Bill < travelled
to India < has, **to India < travelled**
has < travelled
travelled < to India

c. **VP ellipsis:**
$[_{TP}$ Bill [to India]$_i$ has ~~$[_{VP}$ travelled t$_i$]~~$]$.
Updated ordering table:
Bill < to India, Bill < has, ~~Bill < travelled~~
to India < has, ~~**to India < travelled**~~
~~has < travelled~~
~~**travelled < to India**~~

As a solution to the landing site problem, I propose that EM is counter-cyclic. After Spell-out, a phrase may undergo EM and 'tuck-in' somewhere in the structure. With

F&P's theory in place, we can actually explain why this tuck-in position must be the position right next to the ellipsis site. Consider the schematic derivation in (59). In (59a), the Spell-out Domain D' has been spelled out and ordering statements have been calculated for it. In (59b), Z moves counter-cyclically to a position next to D, which contains Y. Consequently, a new ordering statement, namely Z<Y is added to the ordering table. This ordering statement is in conflict with the ordering statement Y<Z. When D is deleted in (59c), all ordering statements that make reference to the elements within D are eliminated. This includes the ordering conflict Z<Y-Y<Z. The example in (60) is similar to (59). The difference is that in (60), Z moves out of YP to a position *above* X. This adds to the ordering table in (60a), the ordering statements Z<Y and Z<X, creating the conflicts Z<Y-Y<Z and Z<X-X<Z. The first of these ordering conflicts is resolved by ellipsis. The second, on the other hand, is not elliminated by ellipsis. The reason is that neither Z nor X are part of the ellipsis site. Hence, ordering statements containing both X and Z will not be eliminated.

(59) Illustration: EM lands next to the ellipsis site.

a. $[_{D'}\ X\ [_{D}\ Y\ Z]]$
Ordering table:
X < Y, X < Z
Y < Z

b. $[_{D'}\ X\ Z\ [_{D}\ Y\ t_z]]$
! *Updated ordering table:*
X < Y, X < Z
Y < Z
Z < Y

c. Ellipsis of D:
$[_{D'}\ X\ Z\ \sout{[_{D}\ Y\ t_z]}]$
Updated ordering table:
~~X < Y~~, X < Z
~~**Y < Z**~~
~~**Z < Y**~~

(60) Illustration: EM lands higher than right next to the ellipsis site.

a. $[_{D'}\ X\ [_{D}\ Y\ Z]]$
Ordering table:
X < Y, X < Z
Y < Z

b. $[_{D'}\ Z\ X\ [_{D}\ Y\ t_z]]$
! *Updated ordering table:*
X < Y, **X < Z**
Y < Z
Z < X, **Z < Y**

c. Ellipsis of D:
$[_{D'}$ X Z $[\sout{_{D}\ Y\ t_z}]]$
! *Updated ordering table:*
~~**X < Y**~~, **X < Z**
~~**Y < Z**~~
Z < X, ~~**Z < Y**~~

To see how this proposal works for Pseudogapping, consider the derivation in (61) for a standard case of Pseudogapping. After construction of the TP Spell-out Domain (cf. (61a,b)), *to India* moves to a VP-external position. In this case this adds the ordering statement *to India*<*travelled* to the ordering table giving rise to the ordering conflict *to India*<*travelled* - *travelled*<*to India*. As before, this ordering conflict is eliminated by VP ellipsis.

(61) John has travelled to Spain and Bill has to India.

a. $[_{VP}$ travelled to India$]$.
Ordering table VP Spell-out Domain:
travelled < to India

b. $[_{TP}$ Bill has $[_{VP}$ travelled to India$]]$.
Ordering table TP Spell-out Domain:
Bill < has, Bill < travelled, Bill < to India
has < travelled, has < to India
travelled < to India

c. **Countercyclic EM of *to India*:**
$[_{TP}$ Bill has $[$to India$]_i$ $[_{VP}$ travelled t_i $]]$.
! *Updated ordering table:*
Bill < has, Bill < travelled, Bill < to India
has < travelled, has < to India
travelled < to India
to India < travelled

d. **VP ellipsis:**
$[_{TP}$ Bill has $[$to India$]_i$ $\sout{[_{VP}\ \text{travelled}\ t_i\ }]]$.
Updated ordering table:
Bill < has, ~~Bill < travelled~~, Bill < to India
~~has < travelled~~, has < to India
~~**travelled < to India**~~
~~**to India < travelled**~~

Now consider the derivation in (62), where, after spell-out of the TP Spell-out Domain, *to India* moves counter-cyclically and tucks in between *Bill* and *has*. After this movement, the ordering statement *to India*<*has* is added to the ordering table. This ordering statement conflicts with the statement *has*<*to India*. Since neither *has* nor *to India* are in the VP, the ordering conflict is not resolved by VP ellipsis.

(62) * John has travelled to Spain and Bill to India has.

a. $[_{VP}$ travelled to India$]$.
Ordering table VP Spell-out Domain:
travelled < to India

b. $[_{TP}$ Bill has $[_{VP}$ travelled to India$]]$.
Ordering table TP Spell-out Domain:
Bill < has, Bill < travelled, Bill < to India
has < travelled, has < to India
travelled < to India

c. **Countercyclic EM of *to India***
$[_{TP}$ Bill $[$to India$]_i$ has $[_{VP}$ travelled t_i $]]$.
! *Updated ordering table:*
Bill < has, Bill < travelled, Bill < to India
to India < **has**, **to India** < **travelled**, has < travelled, **has** < **to India**
travelled < **to India**

d. **VP ellipsis:**
$[_{TP}$ Bill $[$to India$]_i$ has ~~$[_{VP}$ travelled t_i $]$~~$]$.
! *Updated ordering table:*
Bill < to India, Bill < has, ~~Bill < travelled~~
to India < **has**, ~~**to India** < **travelled**~~, ~~has < travelled~~, **has** < **to India**
~~**travelled** < **to India**~~

To sum up this section, I have shown that F&P's theory provides us with an answer to the landing site question if EM is counter-cyclic. In that case, the answer to the landing site question is that EM can only target a position next to the ellipsis site, because if EM lands any higher, it will induce an ordering conflict with the non-elliptical material it crosses. In the next section, I show that the counter-cyclic nature of EM correctly predicts that there are cross-linguistic differences with regard to EM.

4.3 A note on reordering of remnants

If EM takes place counter-cyclically, it is predicted that the 'regular syntax' (i.e. the syntax that is incrementally build by feature driven merge, in accordance with the Extension Condition) feeds EM. Since languages show differences in their syntax, the prediction is that there is cross-linguistic variation when it comes to movement under ellipsis. This variation should not be due to EM, as no reordering between remnants is possible under EM, but due to the differences in the regular syntax of these languages. Any reordering must have been established in the regular syntax, prior to EM. To see this, consider the following schematic derivations. In (63), XP and ZP reorder in the regular syntax. In (63a), XP moves over ZP within D. This results in an ordering statement XP<ZP. In (63b), ZP undergoes EM to a position below XP. This does not add a new ordering statement to the ordering table. Ellipsis

subsequently targets D and the ordering statement XP<ZP determines that we end up with a string XP ZP. In (64), reordering happens by EM. In (64a), the ordering table of D' contains ZP<XP. When EM takes place of ZP in (64b), an ordering statement XP<ZP (and also XP<Y) is added to the ordering table. This gives rise to an ordering conflict XP<ZP-ZP<XP. Because neither XP nor ZP are part of the ellipsis site, this conflict is not resolved by ellipsis, since ellipsis only eliminates ordering statements which contain elements that are in the ellipsis site.

(63) Remnants XP and ZP reorder prior to EM.

a. **XP moves over ZP within D': no ordering conflict:**
$[_{D'}$ XP $[_{D}$ t_{xp} Y ZP $t_{xp}]]$
Ordering table:
XP < Y, XP < ZP
Y < ZP

b. **EM of ZP under XP:**
$[_{D'}$ XP ZP $[_{D}$ t_{xp} Y t_{zp} $t_{xp}]]$
Updated ordering table:
XP < Y, XP < ZP
Y < ZP ZP < Y

c. **Ellipsis of D:**
$[_{D'}$ XP ZP $[\sout{_{D}\ t_{xp}\ Y\ t_{zp}\ t_{xp}}]]$
Updated ordering table:
~~XP < Y~~, XP < ZP
~~**Y < ZP ZP < Y**~~

(64) Remnants XP and ZP reorder by EM.

a. $[_{D'}$ ZP $[_{D}$ Y XP $]]$
Ordering table:
Y < XP
ZP < Y, ZP < XP

b. **EM of XP resulting in reordering of XP and ZP:**
$[_{D'}$ XP ZP $[_{D}$ Y $t_{xp}]]$
! *Updated ordering table:*
XP < ZP, **XP < Y**
ZP < Y, **ZP < XP**
Y < XP

c. **Ellipsis of D:**
$[_{D'}$ XP ZP $[\sout{_{D}\ Y\ t_{xp}}]]$
! *Updated ordering table:*
XP < ZP, ~~**XP < Y**~~
~~**ZP < Y**~~, **ZP < XP**
~~**Y < XP**~~

The prediction that reordering under ellipsis is only possible when the reordering is possible in non-elliptical contexts is borne out cross-linguistically. Let's first consider English. Contrary to common assumptions (see e.g. Hartmann, 2000), Gapping does not require strong syntactic parallelism (Abeillé et al., 2014). As first noted by Sag et al. (1985) for English, the order of remnants in the ellipsis clause does not necessarily parallel that of their correlates in the antecedent, see (65).

(65) a. A policeman walked in at 11, and at 12, a fireman walked in.
b. A policeman walked in at 11, and at 12, a fireman. (Sag et al., 1985)

(63) and (64) showed that remnants cannot reorder by EM. Any reordering of remnants must be established prior to EM (i.e. must be allowed by regular syntactic movement). This explains why (66b) is ungrammatical. (66a) shows that the reordering of *rice* and *Bill* is not possible in the regular syntax. Consequently, this reordering is not possible under ellipsis either. This is so, since EM, which is only possible under ellipsis, cannot reorder *rice* and *Bill*. This is illustrated in (67).

(66) a. * John eats macaroni and rice, Bill eats.
b. * John eats macaroni and rice, Bill.

(67) Remnants *Bill* and *rice* reorder by EM.
a. $[_{\text{TP}}$ Bill $[_{\text{VP}}$ eats rice $]]$
Ordering table:
Bill < eats, Bill < rice
eats < rice
b. **reordering of *Bill* and *rice* by EM of *rice*:**
$[_{\text{TP}}$ rice$_i$ Bill $[_{\text{VP}}$ eats t$_i$ $]]$
! *Updated ordering table:*
rice < **Bill**, **rice** < **eats**
Bill < eats, **Bill** < **rice**
eats < **rice**
c. **Ellipsis of VP:**
$[_{\text{TP}}$ rice Bill $[\sout{_{\text{VP}}\ \text{eats t}_i}]]$
! *Updated ordering table:*
rice < **Bill**, ~~**rice < eats**~~
~~Bill < eats~~, **Bill** < **rice**
~~**eats < rice**~~

As Abeillé et al. (2014) point out, languages with free word-order, like Romanian, allow remnants to be ordered freely under ellipsis. In this language, any of the word-orders possible in the regular syntax is also possible under ellipsis.

(68) a. Dimineața (eu) spăl (eu) vesela (eu), iar seara (eu) spăl (eu) vesela (eu), iar seara
in-the-morning (I) wash (I) the-dishes (I) and in-the-evening (I) wash (I) the-dishes (I) and in-the-evening
Ioana.
Ioana

b. Eu spăl vesela dimineața, iar seara Ioana.
I wash the-dishes in-the-morning and in-the-evening Ioana

c. Eu spăl vesela dimineața, iar Ioana Seara.
I wash the-dishes in-the-morning and Ioana in-the-evening

d. Dimineața spăl eu vesela, iar Ioana Seara.
in-the-morning wash I the-dishes and Ioana in-the-evening
'I wash the dishes in the morning, and Ioana in the evening.'

(Abeillé et al., 2014)

To sum up this section, reordering of remnants under ellipsis is only possible when this reordering of remnants is possible independent of ellipsis. The reason is that EM cannot reorder remnants, because this reordering leads to contradictory ordering statements. Note that this only follows from a theory of EM if EM takes place counter-cyclically. The ordering conflict that arises from reordering arises because an ordering statement established in the 'EM cycle' contradicts an ordering statement in the 'regular syntax cycle'. If EM did not take place counter-cyclically, it is unclear why reordering is not possible in (66b) (repeated here as (69c)), as it should pattern with (69b) in that case.

(69) a. John eats macaroni and Bill $[_{\text{VP}}$ eats rice$]$

b. **EM of *rice* below *Bill***
John eats macaroni and Bill rice$_i$ $[_{\text{VP}}$ ~~eats t$_i$~~ $]$

c. * **EM of *rice* above *Bill***
John eats macaroni and rice$_i$, Bill $[_{\text{VP}}$ ~~eats t$_i$~~ $]$

5 Answering the locality question

In this section, I consider the locality of EM. In section 5.2, I discuss ellipsis types which leave a single remnant. In section 5.3, I discuss ellipsis types which leave multiple remnants.

5.1 Exceptional movement is finite clause bound

As already anticipated in section 2, EM is very local. In that section, I also hypothesized that there is a difference between exceptional and non-exceptional movement with regard to locality. In the ellipsis types in which the remnant is able to escape ellipsis by non-exceptional movement, the remnant may cross a finite clause boundary. In the ellipsis types in which the remnant escapes ellipsis by EM, the remnant cannot cross a finite clause boundary. This is shown in the following examples. For the first remnant in multiple remnant constructions, the locality restriction is hard to test independent of the second remnant. Like above, I assume

that initial remnants move like they do in single remnant constructions. This is in line with the theory of EM sketched so far, as the assumption has been that the regular syntax provides the input for ellipsis/EM.

(70) **Sluicing - Non-exceptional movement**
I admitted I saw someone, but
I forgot [who]$_i$ ~~[I admitted [I saw t$_i$]]~~

(71) **Multiple Sluicing - Exceptional movement**
One of the students said that Mary spoke to one of the professors, but I don't know which student [to which professor]$_i$ ~~[spoke t$_i$]~~

(72) **Fragments - Non-exceptional movement**
A: Who did you admit you saw?
B: [Bill]$_i$ ~~[I admitted [I saw t$_i$]]~~

(73) **Multiple Fragments - Exceptional movement**
A: Who said you bought what?
* B: John [a book]$_i$ ~~[said [I bought t$_i$]]~~ (and Mary a pencil)

(74) **Stripping - Subject remnant: No EM**
a. John claimed that birds can fly, and [bats]$_i$, John also claimed can fly t$_i$.
b. John claimed that birds can fly at the conference, and also [bats]$_i$ ~~[John claimed [t$_i$ can fly at the conference]]~~

(75) **Stripping - Direct object remnant: No EM**
a. Lucie didn't write that bees make jam, but [honey]$_i$, Lucie wrote (that) bees make t$_i$.
b. Lucie didn't write that bees make jam in her book, but [honey]$_i$ ~~[Lucie wrote [bees make t$_i$ in her book]]~~

(76) **Gapping - Exceptional movement**
* John thinks that Bill will see Susan and Harry [Mary]$_i$ ~~[thinks [that Bill will see t$_i$]]~~

(77) **Pseudogapping - Exceptional movement**
* Kathy thinks Henry should study astronomy
but she doesn't [meteorology]$_i$ ~~[think [Henry should study t$_i$]]~~.

(78)

Ellipsis type in English		**EM**	**Clause bound**
Sluicing		✗	✗
Multiple Sluicing	1st remnant	✗	✗
	2nd remnant	✓	✓
Fragments		✗	✗
Multiple Fragments	1st remnant	✗	✗
	2nd remnant	✓	✓
English Stripping		✗	✗
Gapping	1st remnant	✗	✗
	2nd remnant	✓	✓
Pseudogapping		✓	✓

The conclusion to be drawn from this table is that EM is finite clause bound. In section 6, I provide a tentative explanation for why this is the case.

5.2 Ellipsis with a single remnant

Let's see how the fact that EM is finite clause bound together with F&Ps theory accounts for the locality of remnants under ellipsis.

In F&P's theory of Spell-out Domains, spell-out of D only involves Linearization of the elements within D. This means that all Spell-out Domains remain accessible throughout the course of the derivation. Hence, the expectation is that countercyclic movement is not constrained by locality. In the previous section I showed that, contrary to expectation, this prediction is incorrect. Rather than unbounded, EM is finite clause bound. To illustrate this, consider first the case of Pseudogapping in (79). This example involves EM of *meteorology* to a position outside the VP headed by *want*.

(79) Pseudogapping, local EM.

a. Kathy wants to study astronomy, but she doesn't meteorology.

b. **Exceptional movement of *meteorology*:**
… she doesn't [meteorology]$_i$ [$_{\text{VP}}$ want to study t$_i$]

c. **VP Ellipsis:**
… she doesn't [meteorology]$_i$ ~~[$_{\text{VP}}$ want to study t$_i$]~~

Consider now the ungrammatical (80) again. In this example, *meteorology* moves out of the VP headed by *thinks*. The ungrammaticality of (80) must be due to the fact that EM of *meteorology* crosses a finite clause boundary, because there is no ordering conflict, since *meteorology* lands next to the ellipsis site (cf. section 4.2)

(80) * Kathy thinks Henry should study astronomy but she doesn't meteorology.

a. **Exceptional movement of *meteorology* across finite clause boundary:**

! …she doesn't [meteorology]$_i$ [$_{VP}$ think [Henry should study t$_i$]]

b. **VP ellipsis (can't save the day):**

* …she doesn't [meteorology]$_i$ ~~[$_{VP}$ think [Henry should study t$_i$]]~~

The Fragments case in (81) involves movement of *Albanian* across a finite clause boundary. Recall, however, that the single remnant in Fragments is not an instance of EM, see (78) (cf. section 2). The input for ellipsis in (81b) is thus not a phrase marker with *Albanian* in its base position, but rather a phrase marker with *Albanian* in topicalized position, as indicated in (81a).

(81) A: Did Abby claim she speaks GREEK fluently?

B: No, ALBANIAN.

a. **Topicalization of *Albanian*:**
[Albanian]$_i$ [Abby claims [she speaks t$_i$ fluently]]

b. **Ellipsis:**
[Albanian]$_i$ ~~[Abby claims [she speaks t$_i$ fluently]]~~

The data in (80) and (81) shows that a remnant *can* cross a finite clause boundary, but only if it does so via regular syntactic movement, not by EM. The cross-linguistic prediction, then, is that languages that allow for a particular type of movement, also allow for this movement under ellipsis. This prediction is borne out. Consider the example in (82) from Spanish (taken from Saab 2010). This example shows that Clitic Left Dislocation can feed ellipsis.[10] In languages lacking CLLD, such as English, the equivalent of (82a) in (83a) is ungrammatical, and so is the equivalent of the elliptical (82b) in (83b).

(82) Yo no dije que desaprobaron a María
I not said that failed.3PL ACC Mary

a. y a Ana$_i$ tampoco [$_{TP}$ dijiste qua la$_i$ desaprobaron]
and ACC Ana neither said.2SG that CL.ACC.3SG.F failed.3PL

b. y a Ana$_i$ tampoco ~~[$_{TP}$ dijiste qua la$_i$ desaprobaron]~~
and ACC Ana neither

(83) a. * I did not say that Mary failed nor [Anna]$_i$ [did I say failed t$_i$]

b. * I did not say that Mary failed nor [Anna]$_i$ ~~[did I say failed t$_i$]~~

[10] I assume here that CLLD involves movement, an assumption that is not uncontested. The important point here, however, is that the regular syntax of a language feeds ellipsis and that EM is constrained. This point can be made regardless of the correct analysis of CLLD.

Note that the contrast between (82) and (83) is not predicted by the LF parallelism theory of EM (cf. section 3.2). In that theory, EM is not constrained in the syntax. What matters is that the variables in the antecedent and the ellipsis clause are bound from identical positions. Regardless of whether LF parallelism is satisfied in (82) and (83), the LFs of the antecedent and ellipsis site in English should pattern with those in Spanish. Given this, (82) and (83) should thus have the same grammaticality status, contrary to fact.

The Italian examples in (84)-(86) (Laura Migliori p.c.) illustrate the same point as the Spanish data above. These examples all involve CLLD. (85) and (86) involve CLLD from an adjunct island. As the b-cases show, Stripping is possible in Italian in cases where, according to the interpretation, the remnants seem to have extracted from an island context.

(84) a. Maria$_i$, siamo contenti che tutti la$_i$
Mary be.1PL.PRES.IND happy.M.PL that everyone her.F.SG
amino
love.3PL.PRES.SUBJ
'Mary, we are happy that everyone loves her.'

b. Siamo contenti che tutti amino Maria
be.1PL.PRES.IND happy.M.PL. that everyone love.3PL.PRES.SUBJ Mary
e anche Susanna
and also Susan
'We are happy that everyone loves Mary, and also Susan.'

(85) a. Gianni$_i$, vado via se lui$_i$ arriva
John go.1SG.PRES.IND away if he.M.SG arrive3SG.PRES.IND
'John, I will leave if he arrives.'

b. Vado via se arriva Gianni, e anche Pietro
go.1SG.PRES.IND away if arrive.3SG.PRES.IND John and also Peter
'I will leave if John arrives, and also Peter.'

(86) a. Gianni$_i$, mi preparerò prima di parlar-gli$_i$.
John myself prepare.1SG.FUT.IND before of speak.INF.PRES-him.DAT
'To John, I will prepare myself before speaking to him.'

b. Mi preparerò prima di parlare a Gianni, e
myself prepare.1SG.FUT.IND before of speakINF.PRES to John and
anche a Pietro.
also to Peter
'I will prepare myself before speaking to John, and also to Peter.'

I take it that the a-cases underlie the ellipsis in the b-cases. This analysis explains why the corresponding Stripping cases in English are ungrammatical, as shown in b-cases in (87)-(89). This is so, since the syntax of English does not allow for movement out of the islands in the non-elliptical a-cases in (87)-(89). These data again support the hypothesis that the regular syntax of a language feeds ellipsis and that EM under ellipsis is constrained.

(87) a. * Mary$_i$, we are happy that everyone loves t$_i$.
b. * We are happy that everyone loves Mary, and also Susan.

(88) a. * John, I will leave if t$_i$ arrives.
b. * I will leave if John arrives, and also Peter.

(89) a. * [To John]$_i$, I will prepare myself before speaking t$_i$.
b. * I will prepare myself before speaking to John, and also to Peter.

5.3 Ellipsis with multiple remnants

I now turn to discuss ellipsis types with multiple remnants. Consider the Multiple Fragments example in (90). This example is derived by EM of *a book* to a position below *John*, as shown in the derivation of (90) in (90a-c).

(90) A: Who bought what?
B: John the book, (and Mary the bicycle).
a. **Build TP:**
[$_{\text{TP}}$ John bought the book]
b. **EM of *the book*:**
[$_{\text{TP}}$ [John] [the book]$_i$ [$_{\text{T}'}$ bought t$_i$]]]
c. **Ellipsis:**
[$_{\text{TP}}$ [John] [the book]$_i$ ~~[$_{\text{T}'}$ bought t$_i$]~~]]

Next, I consider a more complicated example of Multiple Fragments, which involves movement across a finite clause boundary, as in the example in (91).

(91) A: Who said you bought what?
B: *John the book (and Mary the bicycle).

There are two derivations to consider for (91). The first derivation is one in which *the book* undergoes EM across the finite clause boundary. I showed in the previous section that EM is not possible across a finite clause boundary. The derivation in (92) is thus ruled out due to a locality violation, as shown in (92b).

(92) Multiple Fragments with non-local EM of second remnant.
a. **Build matrix TP:**
[$_{\text{TP}}$ John said I bought the book]
b. **EM of *the book* across a finite clause boundary, and EM of *John*:**
* [$_{\text{TP}}$ [John]$_j$ [the book]$_i$ [$_{\text{T}'}$ t_j said I bought t$_i$]]]
c. **Ellipsis:**
* [$_{\text{TP}}$ [John]$_j$ [the book]$_i$ ~~[$_{\text{T}'}$ John said I bought t$_i$]~~]]

The second possible derivation for (91) is one in which *the book* undergoes regular syntactic movement (i.e. topicalization) across the finite clause boundary, see (93). After building the matrix TP and topicalization of *the book*, the ordering table includes a statement *the book<John*. The next step is EM of *John* over *the book*, after which the ordering statement *John<the book* is added to the ordering table. At this point, there is an ordering conflict, namely *the book<John - John<the book*. This ordering conflict cannot be resolved by TP ellipsis, as neither *John* nor *the book* are included in the ellipsis site, see (93c).

(93) Multiple Fragments with non-local regular movement of second remnant.

a. **Build matrix TP plus topicalization of *the book*:**
$[_{TP}$ [the book]$_i$ $[_{TP}$ John said I bought t$_i$]]
Ordering table:
the book < John, the book < said, the book < I, the book < bought
John < said, John < I, John < bought
said < I, said < bought
I < bought

b. **Exceptional movement of *John*:**
$[_{TP}$ [John]$_j$ $[_{TP}$ [the book]$_i$ $[_{TP}$ t$_j$ said I bought t$_i$]]]
! *Updated ordering table:*
the book < **John**, the book < said, the book < I, the book < bought
John < **the book**, John < said, John < I, John < bought
said < I, said < bought
I < bought

c. **Ellipsis:**
$[_{TP}$ [John]$_j$ $[_{TP}$ [the book]$_i$ ~~$[_{TP}$ t$_j$ said I bought t$_i$]~~]]
! *Updated ordering table:*
the book < **John**, ~~the book < said~~, ~~the book < I~~, ~~the book < bought~~
John < **the book**, ~~John < said~~, ~~John < I~~, ~~John < bought~~
~~said < I~~, ~~said < bought~~
~~I < bought~~

Just as with single remnant ellipsis types, we also find cross-linguistic variation with multiple remnant ellipsis. Serbo-Croatian has multiple *wh*-fronting. Importantly, a second *wh*-phrase can move over a finite clause boundary, see (94). As explained in section 4.2, my account predicts that the regular syntax of a language should feed ellipsis (possibly followed by an instance of EM). Serbo-Croatian shows that this prediction is borne out. A derivation with multiple *wh*-fronting in which the second *wh*-phrase moves over a finite clause boundary in the regular syntax, feeds Multiple Sluicing, see (94b).

(94) a. Ko sta misli da je Petar pojeo?
who what thinks that is Petar eaten
'Who thinks that Petar ate what?'

b. A. Neko misli da je Ivan nesto pojeo.
someone thinks that is Ivan something ate
'Someone thinks that Ivan ate something.'

B. ? Pitam se [ko]$_i$ [sta]$_j$ ~~[t$_i$ neko misli da is Ivan t$_j$ pojeo]~~
ask self who what
'I wonder who what.' (Lasnik, 2013)

Russian is a multiple *wh*-fronting language. As shown in (95a), Russian allows multiple *wh*-fronting in a single clause. Russian differs, however, from Serbo-Croatian in that it does not allow multiple *wh*-fronting where the second *wh*-phrase is extracted across a finite clause boundary, see (95b). As correctly predicted, my account of EM in which EM is clause bound correctly predicts that Multiple Sluicing is fine when the source is (95a), but not when the source is (95b), see (96).

(95) a. Kto-to chto-to sjel, no ja ne znaju kto chto sjel
someone something ate but I not know who what ate
'Someone ate something, but I don't know who ate what.'

b. * Kto-to dumajet chto Petja chto-to sjel, no ja ne znaju kto
someone thinks that Peter something ate but I not know who
chto dumajet cho Petja sjel
what thinks COMP Peter ate
(Int.) 'Someone thinks Peter has eaten something, but I don't know who thinks Peter has eaten what.' (Lena Karvovskaya, p.c.)

(96) a. Kto-to chto-to sjel, no ja ne znaju kto chto
someone something ate but I not know who what

b. * Kto-to dumajet chto Petja chto-to sjel, no ja ne znaju kto
someone thinks that Peter something ate but I not know who
chto (Lena Karvovskaya, p.c.)
what

In a language which lacks multiple *wh*-fronting, such as English, cases like (94a) are ungrammatical. An example is given in (97a). As shown in (97b), the corresponding Multiple Sluicing case is ungrammatical, as well. The reason is that the second *wh*-phrase cannot cross the finite clause boundary in the regular syntax (cf. (97a)), nor can it move over this finite clause boundary by EM, because that would violate the locality condition on EM that it cannot apply across a finite clause boundary.

(97) a. * One of the students said that Mary spoke to one of the professors, but I don't know [which student]$_i$ [to which professor]$_j$ [t$_i$ said that Mary spoke t$_j$]

b. * One of the students said that Mary spoke to one of the professors, but I don't know [which student]$_i$ [to which professor]$_j$ ~~[t$_i$ said that Mary spoke t$_j$]~~ (Lasnik, 2013)

To sum up this section, I have shown that the answer to the locality question is that EM is finite clause bound. This means that any appearance to the contrary must involve regular syntactic movement, potentially feeding an additional instance of EM. I have also shown that the hypothesis that EM is finite clause bound correctly predicts that there is cross-linguistic variation as to what is possible under ellipsis regarding reordering and locality (a prediction that is not made by the rightward movement accounts in section 3.1 nor by the LF parallelism theory of EM in section 3.2).

6 Answering the trigger question

In the previous sections, I have shown that EM and its properties can be accounted for in Fox and Pesetsky's (2005) theory of Spell-out. Two ingredients were crucial in accounting for all of EM's properties. The first ingredient is that EM is cyclic and the second is that EM is finite clause bound. In this section, I account for why EM has these properties. I propose that EM is an interface movement in the sense of Reinhart (2006). Below, I first discuss the motivation behind interface movement.

6.1 Interface movement

It is important to realize that it is unlikely that EM is driven by features. Chomsky's (1995) Minimalist Program strives for a theory in which the computational system (i.e. syntax, henceforth CS) is a mechanical system driven by the feature specification of lexical items, such as the need to value ϕ or Case features. Valuation of features is necessary for these features to be legible to the interface. This hypothesis has several consequences. First, there is no room for optionality in such a system. This is so, because for any given numeration N, the CS can only give one output O. In other words, the CS is deterministic. Second, the hypothesis that the CS involves a blind mechanical procedure, means that the interfaces cannot be inspected during it. A direct consequence of the postulation of a purely mechanical CS, is that every property of language must be encoded in the lexical items. However, as Reinhart (2006) points out, if the properties encoded directly in the lexicon do not, in fact, belong there, we are heading for a dead end. Reinhart argues extensively that there are phenomena that better not be encoded directly in the CS. I consider one such phenomenon in detail.

Quantifier Raising (QR) is a phenomenon which is problematic for the Minimalist Program for at least two reasons. First, QR is optional and second, QR is not feature driven. Reinhart points out that, although it is possible to encode QR in the CS by postulating a QR-feature (cf. Szabolcsi, 1997; Beghelli and Stowell, 1997), this is against the spirit of the Minimalist Program, as there is no morphological evidence for such a feature. Fox (2000) presents a view of QR, which does not face these problems, though at the cost of deviating from a strict Minimalist theory in that it allows for some consultation of the interfaces.

Sag (1976) and Williams (1977) note that there is a contrast between (98a) and (98b).

(98) a. A doctor will examine every patient. ($\exists < \forall$, $\forall < \exists$)
b. A doctor will examine every patient, and Lucie will too. ($\exists < \forall$, $^{*}\forall < \exists$)

Clearly, VPE is the cause for the contrast in (98). Importantly, Hirschbühler (1982) points out that the wide scope reading of the universal is possible in (99). Crucially, (99) also involves VPE.

(99) An American flag was hanging in front of every building and a Canadian flag was too.

Fox (2000) presents the following account for the data in (98)-(99). Fox's solution is based on the notion of LF parallelism, repeated here from (42).

(100) **LF parallelism (Fox and Lasnik, 2003):**
Variables in the antecedent A and the elliptical clause E must be bound from parallel positions.

The representation of (99) is given in (101). In both conjuncts, the universal quantifier binds its trace/variable from the same position.

(101) [every building]$_i$ [an American flag was [$_{\text{VP}}$ hanging in front of t$_i$]] and [every building]$_i$ [a Canadian flag was ~~[$_{\text{VP}}$ hanging in front of t$_i$]~~] too.

If QR applies optionally, then it should be possible for (98b) to receive a similar representation as (101). To rule out wide scope in (98b), Fox hypothesizes that QR is not optional, but rather, it can only apply when its application results in a semantically distinct scope construal. Under this view, the LF representation for the wide scope construal of (98b) is as in (102).

(102) [every patient]$_i$ [a doctor will [$_{\text{VP}}$ examine t$_i$]] and
[Lucie will ~~[$_{\text{VP}}$ examine every patient]~~] too.

If QR does not apply freely, but must have an effect on output, QR cannot apply in the second conjuct in (102). The reason is that QR of *every patient* over *Lucie* will not yield an interpretation that differs from the narrow scope construal with the universal quantifier in situ. With these assumptions, then, it is clear why wide scope in the first conjunct in (98b) is impossible. The reason is that the wide scope construal as represented in (102) violates LF parallelism: a universal quantifier binds a variable in a TP-adjunction position in the antecedent, but there is no parallel variable binding in the elliptical conjunct. The facts in (98)-(102) strongly suggest that QR does not apply optionally, but only when movement derives a semantically distinct scope construal.

Even though QR is not optional, it can still not be directly encoded in the CS without further assumptions. An important insight deducible from Fox's theory, is that whether or not QR applies or not is not a matter of feature checking. Rather,

to determine whether or not QR can apply, the interface must be consulted to see whether QR has an effect on interpretation. Consulting the interface, however, is, as I mentioned, not possible in a purely deterministic conception of the CS. The solution to this problem proposed by Golan (1993) and Reinhart (1993), is to allow for at least some consultation of the interface. As Reinhart (2006) puts it, intuitively, the idea behind interface economy is that, 'in actual human practice, deriving sentences is not an activity motivated just by a compulsion to check features, but speakers use their innate tools to express ideas, or reach other interface goals.' In the case of QR, the 'interface goal', is obtaining a distinct interpretation. Fox (2000) formally implements this intuition into the definition of Reference Set: the set out of which interface economy selects the most economical derivation (this set includes only derivations derived from the same numeration). The line explored in Reinhart (2006) is that considerations of economy apply at the interface, and not in the CS. If correct, this means that any operation driven by interface goals will follow the derivation in the CS. Although Reinhart doesn't go this far, this view actually explains some of the peculiarities of QR. As Bianchi and Chesi (2010) point out: 'With regard to the current definition of MOVE, QR remains exceptional […]' They note that QR is not feature driven, is counter-cyclic and is finite clause bound (cf. May, 1985). The first two of these properties fall out immediately from the system sketched above. QR is not feature driven, because it takes place at the interface (not in the CS), where it is driven by interface goals. Because QR takes place at the interface, it takes the output of the CS as its input, hence its counter-cyclicity. Its finite clause boundedness can be accounted for if finite CPs are phases. Under this view, finite CPs would be shipped off from the CS to the interface. The fact that interface operations are confined to finite clauses, follows from the fact that it receives CPs as input. Note that, under the view that *v*Ps are phases, too, there is no one-to-one correspondance between what are phases for in CS and what are phases at the interface. In essence, this would mean that we need two different notions of phases. Since we currently have a very poor understanding of what phases are (cf. Boeckx and Grohmann, 2007), I will not enter into an elaborate discussion of phases. I do note, however, that if the view outlined here is on the right track, it provides an argument for taking CPs, and only CPs, as phases.

The view of interface movement just sketched has an important consequence for our understanding of reference sets. Under the view just sketched, a reference set contains an output of the CS, call it α, plus a set of derivations which differ from α only in that they involve an instance of interface movement. This picture of reference sets is significantly less complex than the earlier picture where reference sets (given a numeration) contain a set of pairs of possible derivations and interpretations. Under the current view of reference sets, economy becomes a matter of whether performing an operation on the output of the CS satisfies an interface goal.

6.2 EM as an interface movement

I now return to EM. I propose that EM is also a movement driven by interface needs. Just like QR, EM is not feature driven, is counter-cyclic and is finite clause bound. Setting aside the last property, the first two properties follow immediately under the view that EM is driven by interface goals, as just explained for QR. If EM is driven by interface goals, the question, of course, is what this interface goal is. In other words, what need of the interface is satisfied when EM applies in the output of the CS? I propose that EM is licensed by the interface goal of recoverability. The effect of EM is that the moved phrase is taken out of the background (i.e. the material that is given). This sets up a new/given-partition that ellipsis subsequently takes as its input.

There is good reason to believe that something along these lines is on the right track. As is well-known, only given material can be targeted by ellipsis. The standard view is that only given material can elide because given material is recoverable from the context. This contrasts with focused material, which is new information and is hence not recoverable from the context (cf. Nakao, 2008). The idea is that, if focused phrases cannot undergo ellipsis because their content is not recoverable, EM must take place to ensure that all syntactic units with semantic content are recoverable in an elliptical expression. This hypothesis predicts that if recoverability is not at stake, EM is ruled out by interface economy. In other words, EM of α is only licensed when α is not given. This hypothesis provides an explanation for the well-known restriction on remnants of ellipsis that they be focused. (103), for example, is ungrammatical under my proposal, because *a banana* moves out of the ellipsis site by EM in violation of interface economy. Interface economy dictates that EM can only take place when the derivation without EM would give rise to an irrecoverable instance of ellipsis, which is not the case in (103), as *a banana* is given in the antecedent.

(103) * John eats a banana and $[\text{Bill}]_i$ $[\text{a banana}]_j$ $[\sout{\text{t}_i \text{ eats t}_j}]$, too.

We have seen that EM and QR share a set of properties (namely, non-feature driven, counter-cyclic and clause-bound) and that this can be explained if both are taken as instances of interface movement. Further support for the idea that EM and QR are both instantiations of the same type of movement (though not necessarily interface movement) is that both are subject to the same locality restrictions. The examples in (104)-(106) (taken from Thoms (2013)) show that both EM and QR are possible out of a control complement (104), but not out of an ECM complement (105). Moreover, both QR and EM are possible across a finite clause boundary when the subject of the embedded clause is coreferent with the subject of the matrix clause (106).

(104) a. *QR out of control complement.*
Someone wants to visit everyone. $\forall > \exists$

b. *EM out of control complement.*
A: Who wants to talk about what?
B: Mary the weather, and Rab the government.

(105) a. *QR out of ECM complement.*
Someone wants John to visit everyone. (Lasnik, 2006), $^{*}\forall > \exists$

b. *EM out of ECM complement.*
A: Who wants John to talk about what? (Pair-list unavailable)
?* B: Mary the weather, and Rab the government.

(106) a. *QR out of finite complement, coreferent subjects.*
$[$At least one of these men$]_i$ thinks he$_i$ is in love with each of these woman. $\forall > \exists$

b. *EM out of finite complement, coreferent subjects.*
A: Which lawyer$_i$ said he$_i$ was representing which war criminal?
B: Cochrane Milosevic, and Derschowitz Sharon.

6.3 Interface movement and ordering statements

I have adopted F&P's idea that Spell-Out involves shipping off a Spell-Out domain to the interface, at which point ordering statements are calculated. I have argued that interface movement may take place after Spell-Out. That is, interface movement is a counter-cyclic movement operation that takes the output of the CS as its input, hence its counter-cyclic nature. To put it differently, interface movement is a 'second cycle' operation. In light of F&P's theory, the consequence of this view on interface movement in general is that interface movement must be order preserving. This is so, since ordering statements have already been calculated for the Spell-out Domains shipped off from the CS. These ordering statements cannot be contradicted by interface movement in the next cycle. Interface movement must thus be order preserving. If it is not, like in the case of EM, ellipsis must take place to eliminate the conflicting ordering statements. Another possibility for interface movement to take place without inducing ordering conflicts, is to move covertly. This is precisely what happens in the case of QR. When the interface movement is covert (i.e. when only the semantic and formal syntactic features of a phrase are copied, cf. Drummond (2013)), semantically motivated interface movement becomes possible.

In this respect, it is interesting to recall the facts of Lasnik (2013) which identify many similarities between EM and rightward movement in the form of Heavy NP Shift. 'Heavy', of course, has no place in a deterministic conception of the CS. In light of the current discussion, then, it is an interesting question whether HNPS can be analyzed as an interface movement. If so, it would explain why it doesn't seem to be feature driven, why it is clause bound and why it is similar to EM.

7 Can ellipsis repair locality violations?

Since Ross (1969), ellipsis is widely believed to have the ability to repair ungrammatical outputs of the grammar, a hypothesis sometimes referred to as 'repair by

ellipsis' or 'salvation by deletion'. Ross discovered that ellipsis has an ameliorating effect on structures that contain an island violation. Island violations were already briefly considered in chapter 3, section 6.3. In this section, I outline the theory of Barros (to appear), which holds that there is no island repair under ellipsis. This theory nicely complements the claims of this chapter, in particular the claim that exceptional movement under ellipsis is finite clause bound.

Compare the non-elliptical example in (107a) with the grammatical Sluicing example in (107b).

(107) a. * They hired someone who speaks a Balkan language, but I don't know [which]$_i$ they hired someone who speaks t$_i$.

b. They hired someone who speaks a balkan language, but I don't know [which]$_i$ ~~[they hired someone who speaks t$_i$]~~

The example in (107a) is ungrammatical, because it involves an island violation: *which* has moved out of a complex NP. Ross hypothesizes that the same derivation underlies (107b). Surprisingly, this example *is* grammatical.

In recent work it has been argued that the ameliorating powers of ellipsis are actually not at work in examples like (107) (cf. Merchant, 2001; Fukaya, 2007; Abels, 2011; Barros, to appear; Barros et al., to appear; Marušič and Žaucer, 2013). These works argue that (107a) is not the source of (107b). Rather, the ellipsis site contains a 'short' antecedent, in which there is no island to begin with. In these theories the source that underlies ellipsis in (107b) is (108).

(108) They hired someone who speaks a balkan language,
but I don't know [which]$_i$ ~~[(s)he speaks t$_i$]~~

Barros (to appear) presents a theory of (illusive) island repair based on Roberts' (1996) theory of information structure. In this theory, F-marking presupposes congruence with a Question under Discussion (QUD) (cf. chapter 3, section 3.2.1).

(109) **Presupposition of prosodic focus in an utterance, U:**
U is congruent to the QUD at the time of utterance.

From (109) it follows that the focus value of the antecedent in (108) must be equivalent to the QUD (i.e. $[\![\text{Antecedent}]\!]^f = [\![\text{QUD}]\!]^0$). Barros argues that no QUD is set up in (108), because the antecedent contains no contrastive focus and can therefore be construed with broad focus. Since it is the antecedent of the ellips which introduces the QUD that the elliptical utterance must be congruent with, there are two possible construals for (108); a 'short' one (110a) and a 'long' one' (110b). That is, either the ellipsis clause is congruent to the QUD in (110a) or it is congruent to the QUD in (110b). In both cases (109) is satisfied. Barros argues that, although both QUDs in (110a) and (110b) are in principle available for the ellipsis clause to be congruent to, the long construal is ruled out, because it entails an island violation in the ellipsis clause, as shown in (111).

(110) a. QUD$_{TP1}$: {They hired someone who speaks x: $x \in D_{\langle e \rangle}$ }
b. QUD$_{TP2}$: {s\he speaks x: $x \in D_{\langle e \rangle}$ }

(111) They hired someone who speaks a Balkan language,
but I don't know [which]$_i$ ~~[they hired [someone who speaks t$_i$]~~

Barros' theory captures why contrast Sluicing and contrast Fragments cannot repair islands. Consider the example in (112).

(112) A: Did Ben leave the party because SALLY didn't dance with him?
B: *No, CHRISTINE

The QUD that A's utterance gives rise to is given in (113).

(113) $[\![$Ben left the Party because Sally$_F$ didn't dance with him$]\!]^f$
= {Ben left the party because x didn't dance with him: $x \in D_{\langle e \rangle}$ }
= $[\![$QUD$]\!]^0$

The QUD that licenses the focus marking in speaker A's Yes/No question is an implicit *wh*-question, roughly paraphrasable as 'who is such that Ben left the party because s/he wouldn't dance with him?' B's fragment answers this implicit QUD. As (114b) shows, B's fragment is congruent with the QUD set up by the focus marking in the antecedent. The problem with (114b) is that it involves an island violation, and is therefore ruled out. This leaves only the QUD in (114a) as a possible construal for B's fragment. The problem with (114a) is that this short construal does not answer the QUD. That is, 'Christine didn't dance with him' does not answer the QUD 'who is such that Ben left the party because s/he wouldn't dance with him?'

(114) a. $[\![$Christine$_F$ didn't dance with him$]\!]^f$
= {x didn't dance with him: $x \in D_{\langle e \rangle}$ }
$\neq [\![$QUD$]\!]^0$
b. $[\![$Christine$_{F,i}$ Ben left the party because t$_i$ didn't dance with him$]\!]^f$
= {Ben left the party because x didn't dance with him: $x \in D_{\langle e \rangle}$ }
= $[\![$QUD$]\!]^0$

In general, contrastively focused remnants cannot occur in island contexts, because a short construal is unavailable: a short construal does not answer the implicit QUD. A long construal, which does answer the QUD, involves an island violation.

As Marušič and Žaucer (2013) point out, a theory in which ellipsis fixes islands overgenerates, since it predicts that every improper movement can be repaired by ellipsis. This cannot be the case, since there is variation as to which islands can be ameliorated (see, in particular, Barros et al. (to appear)). Also, it is well-known that, whereas clausal ellipsis shows island amelioration (cf. Merchant, 2008b), VP ellipsis doesn't (e.g. Fox and Lasnik, 2003). If ellipsis has ameliorating powers when it comes to locality violations, such variation is surprising. This chapter supports the idea that ellipsis does not repair locality violations. This is so, because, if that were

the case, it would not be expected that EM is finite clause bound. If ellipsis repairs locality violations, the prediction would be that EM could move in an unbounded fashion. Moreover, a consequence of the hypothesis that ellipsis repairs locality violations, is that ellipsis has this power in every language. If that were the case, the cross-linguistic variation observed in section 5 would be surprising. The observed intra- and cross-linguistic variation with respect to locality can be made sense of in a theory of information structure like Barros' theory outlined above and a theory of EM as advocated in this chapter.

8 Summary

In this chapter, I have shown why EM is allowed by the grammar and what properties it has. I have argued that EM is only possible in ellipsis contexts, since ellipsis repairs the conflicting ordering statements that it induces. I identified three peculiar properties of EM: it is counter-cyclic, finite clause bound and non feature driven. Since EM shares these properties with Quantifier Raising, I proposed that EM and QR are both instantiations of movement driven by interface goals. For EM, I proposed that it is driven by the interface requirement of recoverability.

The theory of EM advocated in this chapter supports the 'repair by ellipsis' hypothesis (Lasnik, 2001; Merchant, 2001, 2002; Craenenbroeck and Dikken, 2006; Craenenbroeck, 2010) in that ellipsis has the ability to eliminate problematic ordering statements due to illicit movements by removing them from the ordering table.