Against Evacuation Movement in NP-Ellipsis

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1 Introduction – the Logic of Evacuation Movement

In the vast literature on ellipsis phenomena across languages and in verbal, clausal, and nominal domains, ellipsis is generally thought to target phrasal constituents (XPs). For this reason, even within otherwise significantly different proposals, whenever a subconstituent of XP survives XP-deletion, *evacuation movement* is postulated; that is, the remnant moves out of XP before XP undergoes ellipsis, evacuating the ellipsis site prior to deletion.

In this paper, we provide evidence from NP-ellipsis against evacuation movement, arguing that the mechanism wrongly predicts freezing effects for subextraction from PP-remnants in English, as well as being incompatible with genitive remnants of NP-ellipsis in German, which cannot undergo the movement required to escape ellipsis. We argue for an alternative analysis following a separate research tradition, according to which constituents can survive ellipsis without evacuation movement when they are *contrastive* or *focused* (cf. Stigliano 2022).

We will first briefly review the logic of evacuation movement, using ellipsis in the nominal domain to illustrate throughout the paper. It is well-established that subconstituents of NP can survive "NP"-ellipsis[1], compare (1a), where the entire NP is elided, and (1b), with a PP remnant.

(1)   a.   I like these books about Chomsky and you like those [NP ~~books about Chomsky~~].
      b.   I like these books about Chomsky and you like those ~~books~~ about Churchill.

In this type of situation, the logic of evacuation movement accounts is that examples like (1b) are derived by NP ellipsis, just like (1a), with the PP evacuating the NP prior to deletion. This is illustrated in (2), assuming for now that the PP moves to the right and adjoins to NP (we will return to the directionality and landing site of evacuation movement below).

(2)   ... and you like those [NP [NP ~~books __1~~] [PP about Churchill]1]

The evacuation movement mechanism has at least two advantages. By design, adopting evacuation movement means that no non-constituent deletion is ever needed, which is potentially conceptually preferable (depending on other properties of the analyses in question). We see at least one other empirical advantage for English, with the added prerequisite that evacuation movement be rightward: Rightward evacuation movement helps to account for the fact that omission of the preposition of a PP-remnant is impossible (Yoshida et al. 2012:487):

(3)   a.   *I like these books about Chomsky and you like those [NP ~~books about __1~~] Churchill1.
      b.   *John read Bill's book of music and Mary's [NP ~~book of __1~~] poems1.

This follows under this kind of analysis because rightward movement such as extraposition/heavy NP-shift as in (4) requires pied-piping in English (see Ross 1967:226, Pesetsky 1995:256); importantly, the same holds for reordering within the DP (5):[2]

(4)   a.   I read those books __1 yesterday [PP about your favorite actor]1.
      b.   *I read those books [PP about __1] yesterday [DP your favorite actor]1.

(5)   a.   [Those books by John about Chomsky] impress me.
      b.   [Those books __1 about Chomsky [PP by John]1] impress me.
      c.   *[Those books by __1 about Chomsky [DP John]1] impress me.

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[1]We refer to NP-ellipsis while remaining uncommitted to the exact size of the elided constituent, as will become clear, this important issue in the study of ellipsis is immaterial to our particular concerns.

[2]In (4) we assume that the *by*-PP precedes the *about*-PP in the base, but the same result would obtain if the base order were the reverse. Reordering without pied-piping the preposition leads to ungrammaticality, cf. *Those books about __1 by John [Chomsky]1*.

In spite of these advantages, we will now proceed to illustrate arguments against evacuation movement from English and German, before moving on to an alternative analysis in Section 3.

2 Evidence Against Evacuation Movement

This section introduces our two main arguments against the evacuation movement mechanism from the domain of NP-ellipsis. The first argument concerns the absence of freezing effects under extraction from PP remnants of NP-ellipsis in English. The second argument is about the survival of otherwise immobile constituents under NP-ellipsis, specifically German DP-internal genitives.

2.1 Absence of Freezing Effects

The first argument comes from subextraction in English. As noted by Saab (2019), such subextraction is generally possible from PP-remnants of NP-ellipsis:

(6)   I know who you bought two pictures of, but I don't know who$_1$ you bought three [$_{NP}$ ~~pictures~~ of __$_1$].

Our argument centers on the observation that subextraction *should not* be possible if the PP has previously undergone an evacuation movement step. To see this in more detail, consider first the position of PP-remnants. PP-remnants can be shown to be DP-internal as they front together with other parts of DP:

(7)   I like these books about Chomsky, but [those ~~books~~ about Churchill], I really dislike.

Without leaving the DP, there are two basic possibilities for evacuation movement within DP concerning the directionality – movement could be leftward or rightward. Both have been proposed for evacuation movement, and we discuss the consequences in turn. Saab (2019) suggests leftward evacuation movement, (8a), but that strikes us as implausible given that PPs cannot occur pre-nominally outside of ellipsis contexts, (8b) (see section 2.3 for discussion of exceptional movement under ellipsis).

(8)   a.   I like these two [$_{PP}$ about Churchill]$_1$ [$_{NP}$ ~~books __$_1$~~].
        b.   *I like these two [$_{PP}$ about Churchill]$_1$ [$_{NP}$ books __$_1$].

The alternative is evacuation movement to the right, leading to adjunction to NP or NumP, as proposed in Yoshida et al. (2012) i.a.:

(9)   I like these two [$_{NP}$[$_{NP}$ ~~books __$_1$~~] [$_{PP}$ about Churchill]$_1$].

An ostensible advantage of rightward evacuation movement is that DP-internal modifiers can independently reorder to some extent. (10) and (11) show that reordering of NP-modifiers is possible (although marked), at least with certain nouns.[3]

(10)   a.   a letter from John to Mary
         b.   a letter __$_1$ to Mary [$_{PP}$ from John]$_1$

(11)   a.   a book about linguistics from the 19th century
         b.   a book __$_1$ from the 19th century [$_{PP}$ about linguistics]$_1$

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[3]Note that the reordered PP-modifiers can be shown to be DP-internal, e.g., by examples like the following where the entire string precedes the finite verb, implying that the PP is still part of the subject DP:

(i)   A letter to my daughter from me is special and lasting.
        `https://www.allprodad.com/10-things-to-write-in-a-letter-to-your-daughter/`, accessed on July 13, 2023.

Importantly, the facts turn out not to work in favor of rightward movement in ellipsis contexts when we consider the extraction possibilities: While extraction from the base order is possible (12), extraction from the reordered structure is degraded (13):

(12)   a.   Who$_1$ did you see a letter from __$_1$ to Mary?
       b.   Who$_1$ do you like books about __$_1$ from the 20th century?

(13)   a.   ??Who$_2$ did you see a letter __$_1$ to Mary [$_{PP}$ from __$_2$]$_1$?
       b.   ??Who$_2$ do you like books __$_1$ from the 20th century [$_{PP}$ about __$_2$]$_1$?

This, of course, is ultimately unsurprising given any version of the freezing principle or the Condition on Extraction Domains (Huang 1982), which blocks subextraction from a derived position. However, examples like (14) (repeated from above) would require exactly this kind of derivation, in which subextraction is preceded by a rightward movement step (the evacuation movement).

(14)   I know who you bought two pictures of, but I don't know who$_2$ you bought [$_{NumP}$ three [$_{NP}$ ~~pictures__$_1$~~] [$_{PP}$ of __$_2$]$_1$].

The grammaticality of (14) is completely unexpected in a theory with evacuation movement because the derivation should violate the CED/the freezing principle just like the examples in (13). Note that in cases where the PP is unquestionably rightward-moved, as by extraposition in (15), subextraction leads to ungrammaticality (cf. Ross 1967, 303f. for the original observation):

(15)   *I know who you bought two pictures of today, but I don't know who$_2$ you bought [$_{NumP}$ three [$_{NP}$ ~~pictures__$_1$~~] yesterday [$_{PP}$ of __$_2$]$_1$.

This casts further doubt on there being rightward movement in (14).

Additionally, *of*-PPs as in the example in (15) are known to be less mobile than other PP-modifiers in that some types of *of*-PPs cannot be reordered within DP at all, see Takami (1992, 53) and the references cited there.

(16)   a.   a review of a book on the desk
       b.   *a review __$_1$ on the desk [$_{PP}$ of a book]$_1$.

Considering these restrictions on the reordering of *of*-PPs, even the putative source structure underlying subextraction in (14) may be ungrammatical.[4]

An alternative analysis of the facts above could be based on the assumption that PP-modifiers within NP are not complements of N but in fact adjuncts (to NP/nP), see e.g. Donati and Cecchetto (2011), Bruening and Al Khalaf (2019). Under such an analysis PP-modifiers would be base-generated outside the ellipsis site; consequently, no evacuation movement would be necessary. However, given the CED, one would expect PPs base-generated in adjoined positions to be just as impermeable as PPs moved to an adjunction position (as under evacuation movement). Consequently, this alternative analysis ultimately runs into the same locality problem as an analysis based on evacuation movement.[5]

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[4]A google search will deliver examples with reordering where the *of*-PP is heavy, e.g., as in (i):

(i)   But I've actually seen an old picture on the Internet [of a German lady heating her home by tossing bricks of currency into her furnace]. `http://www.countercurrents.org/heinberg270710.htm`, accessed August 22, 2023.

Practically all examples of this type we have been able to find are ambiguous between reordering within DP and extraposition from DP, given that the *of*-PP usually occurs at the end of the sentence (and thus could be attached to VP). Given that extraposition of *of*-PPs is generally readily available, it remains a plausible interpretation of this overall state of affairs that reordering of *of*-complements within NP is not available. Note also that the *of*-PP-remnant from which extraction takes place under NP-ellipsis in ex. (14) is clearly not heavy. Thus, even if reordering of *of*-PPs were possible when they are heavy, ex. (14) is unlikely to involve reordering, viz., adjunction to NP.

[5]Treating all PP-modifiers as adjuncts may be independently problematic. First, it has been argued that there

2.2 Survival of Immobile Constituents

Our second argument against evacuation movement comes from German. It is based on the behavior of genitives within DP. It is well-established that both pre- and postnominal genitives in German cannot be extracted from DP, neither through fronting to the prefield (via wh-movement or topicalization) nor through extraposition, see Lindauer (1995, 118), Müller (1995, 46):[6]

(17) a. Ich habe [NP geheime Berichte des   Professors]   gelesen.
          I   have   secret   reports the.GEN professor.GEN read
          'I read secret reports by the professor.'
      b. *[Des   Professors]₁   habe ich [NP geheime Berichte __₁] gelesen.
          the.GEN professor.GEN have I   secret   reports   read
      c. *Ich habe [NP geheime Berichte __₁] gelesen [des   Professors]₁.
          I   have   secret   reports   read   the.GEN professor.GEN

The immobility of DP-internal genitives is in fact more general in that they also cannot be reordered within DP via right-ward movement:

(18) a. Die Angst der   Erstklässler vor Monstern
          the fear the.GEN first.graders of monsters
          'the first graders' fear of monsters'
      b. *Die Angst __₁ vor Monstern [der   Erstklässler]₁
          the fear   of monsters the.GEN first.graders

Importantly, both properties only hold for genitives. Other DP-internal constituents like PP-modifiers can both be extracted from DP and (at least to some extent) reordered within DP. In the following examples, the PPs are thematically parallel to the genitives in the previous examples:[7]

(19) a. Ich habe [NP geheime Berichte von Peter] gelesen.
          I   have   secret   reports of Peter read
      b. [PP Von Peter]₁ habe ich [NP geheime Berichte __₁] gelesen.
          of Peter   have I   secret   reports   read

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is an argument-adjunct asymmetry w.r.t. PP-extraposition from NP in that arguments like *of*- and *about*-PPs are sensitive to the definiteness effect, reconstruct for Condition C, can extrapose in ATB-fashion and license parasitic gaps, while these properties do not hold for adjuncts (which are late merged), see Nissenbaum (2000, 140-143). Second, it has been claimed that there is an argument-adjunct distinction w.r.t. pied-piping extraction from DP, see Bošković (2016, 23). Crucially, *of*- and *about*-PPs behave like arguments, see (i):

(i) a. [PP About which city]₁ did Peter read [books __₁]?
     b. *[PP From which city]₁ did Peter meet [girls __₁]?

In addition, there is a long-standing claim that only argument-PPs allow subextraction, while adjunct PPs as in (ii) systematically block it, see Takami (1992, 56f.):

(ii) a. *Who₁ does Phineas know [a girl [PP behind __₁]]?
      b. *[What color eyes]₁ did you meet [a man [PP with __₁]]?

The first asymmetry seems uncontroversial, though the second is substantially counterexemplified, see Takami (1992, 56f.) for examples and references.

[6]Many examples in the cited literature involve a confound in that they are based on extraction of a prenominal possessor (usually proper names that do not easily occur in postnominal position). Since a prenominal possessor renders a DP definite and definite DPs are independently known to degrade extraction from DP, see, e.g., Müller (1995, 392, fn. 32), the ban on extracting those genitives may be due to independent reasons. The examples in the text are constructed in such a way that the genitive can also originate in postnominal position, thereby avoiding the confound.

[7]According to Lindauer (1995, 109-11), reordering within DP is most acceptable if the preposition of the lower XP is identical to the one selected by the underlying predicate. This is the case in the example in the text.

      c.   Ich habe [NP geheime Berichte __1] gelesen [PP von Peter]1.
          I   have   secret   reports   read   of Peter
          'I read secret reports by/of Peter.'

(20)   a.   die Angst von Erstklässlern vor Monstern
          the fear of first.graders of monsters

      b. ?die Angst __1 vor Monstern [PP von Erstklässlern]1
          the fear   of monsters   of first.graders
          'the first graders' fear of monsters'

Thus, the immobility only affects genitives. Crucially, DP-internal genitives can survive NP-ellipsis where both N and the PP-complement are deleted (and recovered):

(21)   Die Angst der   Erstklässler vor Monstern ist groß, aber [die ~~Angst~~ der
        the fear   the.GEN first.graders of monsters is big, but that fear   the.GEN
        Zweitklässler ~~vor Monstern~~] ist   viel größer.
        second.graders of   monsters is   much bigger
        'The first graders' fear of monsters is big, but that of the second graders is much bigger.'

The example in (21) is important for two reasons. First, it shows that the genitive remnant is still part of the subject DP as it precedes the verb in a verb second clause. Given that only a single constituent can precede the finite verb in V2 clauses, the genitive remnant must be within Spec,CP (the position generally assumed to be targeted by fronting to the prefield). Thus, the survival of NP-ellipsis cannot be due to extraction from DP. Second, since ellipsis appears to affect non-adjacent constituents (the head noun and the *vor*-PP), the genitive would have to undergo reordering within DP to survive ellipsis. One option is rightward movement as in (22):

(22)   die [NP [NP ~~Angst __1~~ vor Monstern] [der   Zweitklässler]1]
       the   fear   of monsters   the.GEN second.graders

However, DP-internal rightward movement of genitives was shown to be impossible in (18), rendering this kind of evacuation movement unlikely.

    The remaining alternative is leftward movement of the genitive to a position outside of NP as schematically depicted in (23):

(23)   die [NP [der   Zweitklässler]1 [NP ~~Angst __1~~ vor Monstern]]
       the   the.GEN second.graders   fear   of monsters

This option is not promising either: While genitives can occur in prenominal position in German DPs, this position is usually identified with Spec,DP (with the genitive originating NP-internally). Showing that prenominal genitives occupy Spec,DP is difficult since they are in complementary distribution with determiners. But since they precede numerals and adjectives, cf. *des Kaisers drei neue Mäntel* 'the emperor's three new coats', it is clear that the landing site must be in the periphery of the noun phrase. Crucially, under NP-ellipsis, the genitive remnant follows numerals and adjectives, showing that it has not undergone this movement to the periphery:[8]

(24)   Die drei langen Mäntel des   Herzogs sind wertvoll, aber die zwei kurzen ~~Mäntel~~
       the three long   coats the.GEN duke   are valuable but the two short   coats
       des   Kaisers   sind noch viel   wertvoller.
       the.GEN emperor.GEN are still   much valuable.COMP
       'The three long coats of the duke are valuable, but the two short (ones) of the emperor are much more valuable.'

Rather, the only option for leftward evacuation movement would be to target a position right below

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[8]In contemporary German, prenominal genitives are natural with proper names and kinship terms but marked with full DPs. Interestingly, DP-genitives that survive NP-ellipsis are unmarked, again suggesting that they are not prenominal.

the adjectives. As in English (recall ex. (8)), this movement is not independently available. An analysis where the genitive remnant remains in-situ thus strikes us as much more innocuous (see also Weir 2014, 167-175 for examples where elements would have to undergo evacuation movement that cannot undergo this movement outside ellipsis). In the next subsection we discuss whether this special evacuation movement could be motivated on the basis of the salvation by deletion property of ellipsis.

Before concluding this subsection, we would like to highlight the relevance of genitives for this debate. It seems uncontroversial that DP-internal genitives are the most argument-like DP-internal constituents. This aligns with the fact that they must occur closer to the noun than PP-arguments, viz., have to be adjacent to it when in post-nominal position. They are therefore most likely to be generated within NP. As a consequence, their survival under NP-ellipsis cannot be explained away by treating them as adjuncts to NP (as is sometimes claimed for PP-modifiers, recall from section 2.1).

2.3 Against Exceptional Movement under Ellipsis

It is often claimed that ellipsis can enable certain otherwise illicit movements (Ross 1969, Chomsky 1972, Merchant 2001, Lasnik 2001, Mendes 2020, Mendes and Kandybowicz 2023 a.o.). This involves a somewhat different conception of locality where rather than being blocked by a derivational constraint, movement out of an island is possible as such but would damage a sub-portion of the structure (indicated below with a star). If nothing else happens, such a derivation crashes at the PF-interface because of the damaged structure. If, however, ellipsis, conceived of as PF-deletion, applies and removes the problematic chunk, the final representation is salvaged (under this perspective, the relevant island constraints are thus PF-constraints). In (25a), the *wh*-DP moves out of a relative clause. In (25b), a constituent that properly includes the island, the damaged portion of the structure, is removed, thereby repairing the representation. As a consequence, an otherwise illicit movement operation becomes possible.

(25)   a.   The department wants to hire someone who speaks a certain Balkan language, but I don't know [which Balkan language]$_1$ the department wants to hire someone [* who speaks __$_1$].
         b.   The department wants to hire someone who speaks a certain Balkan language, but I don't know [which Balkan language]$_1$ ~~the department wants to hire someone [* who speaks __$_1$]~~.

Given this background, one could imagine that evacuation movement could be maintained for the case studies at hand under a salvation by deletion rationale as it would make movement operations possible that are otherwise unavailable. We will show, however, that this rationale cannot be applied to our data.

First, salvation by deletion does not explain the absence of freezing effects in the English examples, discussed in section 2.1.:

(26)   I know who you bought two pictures of, but I don't know who$_1$ you bought three [$_{NP}$ ~~pictures~~ of __$_1$].

This is so because the frozen domain, the NP-ellipsis remnant, has been displaced to a position outside the ellipsis site (viz., NP). In other words, the damaged portion of the representation (the frozen PP) is not affected by ellipsis and thus cannot be repaired by it (regardless of the direction of the putative evacuation movement):[9]

(27)   I know who you bought two pictures of, but I don't know who$_1$ you bought three [$_{NP}$ ~~pictures~~ [*of __$_1$]].

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[9]Salvation by deletion could be useful after all to maintain rightward movement within NP, especially if this kind of movement is not readily available with *of*-PPs (recall the discussion in section 2.1). Still, NP-ellipsis cannot help repair the freezing effect in the case at hand.

Second, motivating exceptional evacuation movement of genitive remnants in German by means of the salvation by deletion rationale fails as well: The idea would be that despite the genitives' apparent immobility, ellipsis makes otherwise unattested right- or left-adjunction to NP possible.

However, this type of logic cannot be applied to our data because the immobility of the genitive complements is unlikely the result of a locality violation. First, as was observed in section 2.2, PP complements *can* move rightwards, recall ex. (20b), in contrast with genitive complements, recall ex. (18b), suggesting that there is no locality constraint blocking rightward movement within DP (viz., islandhood of NP).

Secondly, given that the ellipsis-surviving genitive follows determiners, numerals and adjectives, recall ex. (24), the only possibility under leftward evacuation movement would be movement to a position between the adjectives and NP/nP, e.g., adjunction to NP/nP. Such a movement step is not available outside of ellipsis, and one could therefore hypothesize that it is NP-ellipsis that makes it possible. However, it is again not obvious that this movement step would violate a locality constraint. In the hypothetical case at hand, it is unlikely that the NP would be damaged by a trace within NP given that movement to the left (to Spec,DP, recall 2.2) is, in principle, possible.[10] Rather, there is simply no landing site for the genitive in this area, but that is very different from the cases involving salvation by deletion where what is deleted is a proper island.[11]

We therefore conclude that the salvation by deletion rationale cannot be applied to our case studies because locality is not at stake. The evacuation movements that would be necessary to maintain the assumption that the ellipsis remnant is outside the ellipsis site thus remain problematic.

3 Proposal

The emerging picture is that certain sub-portions of the NP targeted for ellipsis can indeed be pronounced. This suggests NP ellipsis should not be seen as an operation that blindly prunes away the NP node, but instead should be factored out in order to be sensitive to the internal structure of the NP. Though not standard in the ellipsis literature, this idea has appeared throughout the years in different guises to address problems like sluicing in wh-in situ languages, where a move-and-delete analysis of sluicing requires an operation unattested in the language (viz., overt movement of the *wh-phrase*), and pseudogapping, where apparently a sub-portion of an elided VP survives ellipsis (e.g. Morgan 1973, Hankamer 1979, Hirai 2018, Stigliano 2022, i.a.). A recurring idea in this literature is that focused material within an ellipsis domain survives ellipsis. A possible implementation can be found in Saab (2022) and Stigliano (2022), where ellipsis is seen as an instruction to

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[10]One might argue that this movement step violates anti-locality, at least under certain conceptions, because it fails to cross a maximal projection. However, apart from the fact that the reordering of PPs in (20b) arguably involves rightward adjunction to NP and thus an equally local movement step, there is no evidence that ellipsis could salvage violations of anti-locality. See, e.g., sluicing in German, where P-stranding is not possible. If P is a phase-head and movement via Spec,PP is too local, then deletion of the PP under sluicing should lead to grammaticality if ellipsis is able to repair too local movement. However, given that deletion of the PP under sluicing is *un*grammatical, ellipsis arguably cannot repair violations of anti-locality.

[11]The partial immobility of DP-internal genitives remains to be explained. The only explicit account we are aware of is Müller (1995, 45-51), where the ban on extracting genitives is related to the fact that this would require two mutually exclusive operations: On the one hand, genitives are assigned case (from N, according to Müller). On the other hand, extraction requires abstract incorporation of the N-head of the DP into the governing verb. Since abstract incorporation deprives the N-head of its ability to assign case, DP-internal genitives can no longer be case-licensed. They only are if no abstract incorporation takes place, but then, NP remains a barrier and extraction from DP is blocked.

Our data showing that DP-internal genitives also cannot be rightward-moved within DP cast doubts on this explanation: Since no extraction takes place, no abstract incorporation is necessary, and consequently, N should be able to assign case to the genitive. A possible alternative would be to appeal to an adjacency requirement between N and the (postnominal) genitive (while prenominal genitives might receive their case from D). However, apart from the fact that this would not follow from anything, it is unclear why this should only hold for DP-internal genitives but not genitive objects, which can be freely moved to the prefield via wh-movement or topicalization. We leave deeper exploration of this issue for future research.

forgo vocabulary insertion, targeting individually each head within the ellipsis domain (an idea that goes back to Wasow 1972). Heads included in an F-marked constituent are exempt from such an instruction (Stigliano 2022). This factoring out of the ellipsis procedure is precisely what allows sub-portions of the ellipsis domain, namely focused constituents, to be pronounced.

Let's first consider one of our crucial examples from German. In (28), the genitive complement survives NP-ellipsis, even though it was shown that it cannot independently undergo the kind of movement necessary to evacuate the ellipsis site.

(28)   Die Angst der   Erstklässler ist größer als   [DP die [NP ~~Angst~~ der Zweitklässler]].
        the fear   the.GEN first.graders is bigger than   that   fear the second.graders
        'The first graders' fear is bigger than that of the second graders.'

Since F-marked elements survive ellipsis, the genitive does not need to move outside the NP to avoid undergoing ellipsis.

(29)   ... größer als [DP die [NP ~~Angst~~ [DP der   Zweitklässler]F]].
           bigger than   that   fear   the.GEN second.graders
        '.. bigger than that of the second graders.'

The F-marked genitive complement in (29) is thus exempt from ellipsis modeled as an instruction to forgo vocabulary insertion. No other head inside the NP is spelled out.

Let's now consider the cases from English with subextraction from a PP-remnant:

(30)   I know who you bought two pictures of, but I don't know who$_1$ you bought three [NP ~~pictures~~ of __$_1$].

Recall that evacuation movement of the PP headed by *of* (or its base generation as an adjunct outside the ellipsis site) would predict that movement of *who* from within the PP should incur a locality violation (viz., a freezing effect), contrary to fact. If portions of the ellipsis domain can indeed be pronounced, this problem dissolves. To account for (30), we assume that the whole PP is F-marked (even though only the *wh*-element moves).[12] This leads to the following derivation:

(31)   I know who you bought two pictures of, but I don't know who$_1$ you bought three [NP ~~pictures~~ [PP of __$_1$]F].

Since the preposition *of* is included in an F-marked constituent, it is not subject to ellipsis but instead will be subject to vocabulary insertion, in contrast with *pictures*. The crucial point here is that this mechanism allows the preposition to survive NP-ellipsis without requiring it to evacuate the NP.

This mechanism allows remnants of ellipsis without having to appeal to evacuation movement, thereby straightforwardly accounting for: (i) lack of CED/freezing effects in subextraction from PP remnants of NP ellipsis in English; and (ii) the possibility of genitive complement remnants of German NP-ellipsis, which cannot undergo the kind of movement necessary to escape ellipsis.

So far, we have focused on deletion operations that involve the noun. Interestingly, a fact that to the best of our knowledge has not been noticed systematically in the literature, it is also

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[12]Mismatches between the F-marked constituent, the whole PP in our example, and the constituent which actually moves have been documented in several languages, though in different domains (Fanselow and Lenertová 2011, Branan and Erlewine to appear). This can be implemented by partly divorcing focus marking from movement and assume that movement is triggered by a (possibly silent) Q-particle attached to the moved constituent (see Cable 2007 i.a. for relevant discussion). Why the whole PP must be F-marked in this type of example, rather than only the *wh*-element, is still unclear to us. Notice that while rightward evacuation movement indeed receives support from obligatory prepositions introducing remnants in some examples of NP-ellipsis (see section 1 for discussion), it does not fare any better in examples like (30). Specifically, nothing prevents movement of the *wh*-phrase in the absence of evacuation movement of the PP out of the NP marked for ellipsis. To account for the obligatory presence of the preposition, evacuation movement of the PP must be stipulated to be obligatory if there is extraction from the PP, which essentially amounts to a restatement of the facts. The reason for the obligatory presence of the preposition should thus be found elsewhere, not in rightward movement. We leave this for future research.

possible to elide (and recover) complements (genitive and PP-complements, clausal complements) and modifiers of N (PP adjuncts and relative clauses), while N itself is realized:

(32)   Im   Flugzeug habe ich einen Artikel über   Churchill gelesen und du   einen [NP Roman
        In.the plane   have I   an   article about Churchill read   and you a   novel
        [PP über   Churchill]].
          about Churchill
        'On the plane I read an article about Churchill and you a novel.'

Under our perspective, such examples would still involve NP-ellipsis, but with N surviving ellipsis because it is F-marked (note that such examples are only acceptable if the noun is contrastive).

One may wonder at this point whether the (individual) recovery of complements and modifiers could be done by purely pragmatic means, rather than relying on syntactic structure. The following contrast between pre- and post-nominal modifiers suggests that such a view would be too simplistic: While post-nominal modifiers can be easily elided (and recovered) by themselves, (32), pre-nominal modifiers cannot (33) (as far as we can tell, the English translations show the same asymmetry w.r.t. recovery, and are similarly independent of concurrent verbal ellipsis).

(33)   a. *Ich habe das schönste Auto und du   [DP das schönste Motorrad].
            I   have the prettiest car   and you   the prettiest motorbike
            Intended: 'I have the prettiest car and you the prettiest motor bike.'
        b. *Ich las   diese zwei Bücher und du   las   [DP diese zwei Romane].
            I   read these two books   and you read   these two novels
            Intended: 'I read these two books and you read these two novels.'

This suggests that the recovery of modifiers is not done merely by pragmatic resources, but instead it is mediated and constrained by the grammar. If nominal modifiers could simply be recovered by pragmatic means, the contrast above would be lost.[13] We speculate that this contrast can be deduced from the positioning of modifiers in the nominal domain, but leave a complete analysis for future research.

4 Conclusion

We have provided two arguments against evacuation movement in NP-ellipsis based on (i) the extraction from PP-remnants of NP-ellipsis: evacuation movement of a PP would predict freezing effects (contrary to fact); and (ii) ellipsis surviving genitives in German: genitives cannot undergo the type of (leftward or rightward) movement necessary to escape NP-ellipsis. We have proposed instead that English PPs and genitive complements in the nominal domain in German are capable of surviving ellipsis without leaving the constituent marked for ellipsis. Modeling ellipsis as an instruction to forgo vocabulary and assuming that this procedure is blocked in focus environments thus reconciles the availability of certain types of ellipsis remnants with their inability to undergo evacuation movement.

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[13]Note that adjectives and numerals can be elided (and recovered), but only if they are part of a larger elided chunk including N(P), see the following English examples (the situation is the same in German):

(i)   a. I read two new books about Chomsky and you read three new books about Chomsky.
        b. I read these two new books about Chomsky and you read those two new books about Chomsky.

These facts thus also argue against an approach that allows for individual deletion of constituents. Under such an approach the examples in (i) would involve three or four individual deletion operations, including the adjectives and the numeral. But if this were possible, nothing should block individual deletion and recovery of adjective and numeral in (33), contrary to fact.

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