Multiple NP split: A *Distributed Deletion* analysis

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1. Introduction[*]

German famously allows *split topicalization*, i.e. topicalization of one part of an XP that strands the other part *in situ* (see van Hoof 2006 for a comprehensive survey). Typically, in such cases the original order of elements is inverted:

(1) a. Er hat <u>keine Bücher</u> gelesen
        he has no books read
        'He hasn't read any books'

    b. <u>Bücher</u> hat er <u>keine</u> gelesen
        books has he no read
        'As for books, he hasn't read any'

In this paper, I discuss a particular sub-class of such split constructions in German, exemplified in (2) (examples from Pafel 1996 and Fanselow & Cavar 2002):

(2) a. <u>Fehler</u> sind ihm <u>so richtig dumme</u> gestern <u>keine</u> unterlaufen
        mistakes are him PRT really stupid yesterday none occur
        'As for mistakes, he didn't make any really stupid ones yesterday'

    b. <u>Bücher</u> hat man damals <u>interessante</u> in den Osten <u>keine</u> mitnehmen dürfen
        books has one then interesting in the East no with-take may
        'As for books, one could not take any interesting ones to the East then'

The underlined words represent parts of a discontinuous noun phrase; the left-hand part is topicalized, while the right-hand part bears focal stress; the status of the intermediate part is somewhat unclear, but it might be a secondary focus. Following Pafel (1996), I will refer to the phenomenon illustrated in (2) as *Multiple NP Split*.

The paper is organized as follows. In section 2, I will present the basic properties of NP-split constructions; since multiple splits have so far not been discussed in the literature, it will be necessary to show that they exhibit the same basic properties as regular (single) splits. In particular, I will show that multiple splits must be analyzed as results of A'-movement; this analysis clashes, however, with the freezing effects discussed by Müller (1998) in connection with scrambling. Section 3 will discuss a solution to this problem, based on the *Distributed Deletion* approach to split constructions (Fanselow & Cavar 2002).

2. Core properties of split-NP topicalization

2.1 *Against base generation*

Split topicalization of noun phrases has several peculiar properties, which led a number of researchers to propose that the parts of the discontinuous NP are actually base-generated in

their respective surface positions (see Fanselow 1988, 1993). This view has since become somewhat unpopular, as it introduces complications with regard to linking (but see Hale 1983), and furthermore makes a number of false empirical predictions.

The most important argument for a base-generation hypothesis was that split topicalization is insensitive to certain island constraints. In German, subjects of transitive and individual-level predicates, as well as oblique (dative/genitive) NPs are generally islands for extraction (see Müller 1995 and Fanselow 1993, for data and discussion):

(3) a.   *[An Maria]$_i$ hat mich [kein Brief t_i] erschreckt
          to Mary has me no letter frightened
          'No letter to Mary has frightened me'

    b.   *Ärzte$_i$ sind [keine t_i] intelligent
          doctors are no intelligent
          'No doctors are intelligent'

    c.   *[Über Polen]$_i$ ist hier noch [keinen Büchern t_i] ein Preis verliehen worden
          about Poland is here yet no books.DAT a prize awarded been
          'No books about Poland have been awarded a prize here'

    d.   *[An Studenten]$_i$ habe ich ihn [schrecklicher Morde t_i] angeklagt
          at students have I him horrible murders.GEN accused
          'I accused him of horrible murders of students'

By contrast, split topicalization does not respect any of these constraints; all types of NPs shown to be islands for extraction in (3) can be split up (data from Fanselow & Cavar 2002):

(4) a.   [Briefe an Maria]$_i$ haben mich [keine t_i] erschreckt
          letters to Mary have me no frightened
          'As for letters to Mary, they have not frightened me'

    b.   Ärzte$_i$ dürften schon [ein paar t_i] altruistisch sein
          doctors may really a few altruistic be
          'As for doctors, a few will be altruistic'

    c.   [Interessanten Büchern über Polen]$_i$ ist hier noch [keinen t_i] ein Preis verliehen worden
          interesting books about Poland is here yet no.DAT a prize awarded been
          'As for interesting books about Poland, so far no prize has been awarded to any of them here'

    d.   [Schrecklicher Morde an Studenten]$_i$ ist er [vieler t_i] beschuldigt worden
          horrible murders at students is he many.GEN accused been
          'He has been accused of many horrible murders of students'

However, this insensitivity to some island constraints is only one side of the picture. At the same time, we find that both regular extraction from NP and split topicalization of NP respect other island types (van Hoof 2006: sec. 2.1), such as the complex-NP constraint, the adjunct-island condition, and the coordinate-structure constraint (Ross 1967, Huang 1982):

(5) a.   *Bücher$_i$ habe ich [$_{NP}$ eine Geschichte dass sie [keine t_i] liest] gehört
          books have I a story that she no reads heard
          'I've heard a story that she doesn't read any books'

b.   *Bücher$_i$ ist sie schon oft nachhause gegangen, [bevor sie [welche t$_i$] gelesen hat]
     books is she already often home went before she some read has
     'She often went home before reading some books'

c.   *Bücher hat sie bisher [nur wenige t$_i$ und Zeitschriften] gelesen
     books has she so-far only few and magazines read
     'So far, she has only read few books and magazines'

The data in (5) suggest that the topicalized part of the NP is indeed extracted from the base position, indicated by the remnant. So far, then, the data is somewhat inconclusive with regard to the question whether split topicalization is derived by movement or not.

However, there is further evidence in favor of a movement analysis. As van Riemsdijk (1989) notes, the necessary preservation of noun-phrase internal word order under split topicalization militates against a base-generation account. Consider, in particular, adjective ordering. The sequence in (6a) is unmarked, while other sequences such as (6b) are only acceptable with strong focal stress on preposed adjectives:

(6) a.   Hans mag schnelle amerikanische Autos
         Hans likes fast American cars

    b.   ??Hans mag amerikanische schnelle Autos
         Hans likes American fast cars

If the NP *schnelle amerikanische Autos* is split-topicalized, the order among adjectives must be preserved:

(7) a.   [Amerikanische Autos]$_i$ mag Hans nur [schnelle t$_i$]
         American cars likes Hans only fast

    b.   ??[Schnelle Autos]$_i$ mag Hans nur [amerikanische t$_i$]
         Fast cars likes Hans only American

Under a base-generation analysis, this kind of constraint on NP split is mysterious; it clearly indicates that the two splits are related in the base, but separated by movement.

Generally, NP splits arise in connection with focus/topic structure: the topicalized part of the NP acts as a topic, the remaining *in situ* part receives focal stress.[1] As shown by Frey (2000), operator movement is necessary to license NP splits:

(8) a.   dass er [teure Bücher]$_i$ wahrscheinlich der Frau [keine t$_i$] schenken wollte
         that he expensive books probably the woman no give wanted

    b.   ?*dass er wahrscheinlich [teure Bücher]$_i$ der Frau [keine t$_i$] schenken wollte
         '… that he probably didn't want to give the woman expensive books as a present.'

According to Frey, the different relative positions of the higher split (*teure Bücher*) and the sentence adverb (*wahrscheinlich*) indicate that (8a) is an instance of operator movement to a sentence-internal topic position, while (8b) is scrambling to some lower position. Only (8a) is fully acceptable, indicating that A'-movement, but not scrambling, licenses NP split. While Frey's precise analysis is questionable, I think that the asymmetry alone shows that movement must be involved.

Overall, then, it seems that a base-generation approach to split topicalization is untenable. Let us now see whether multiple NP split (henceforth, MNPS) exhibits the same

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[1] Splits are also possible as a result of *wh*-movement, as in *was-für* split (Leu 2008). I will not be concerned with this construction type in the context of the present paper.

characteristics of movement as "normal" splits.[2] Recall from (2), repeated here with different notation, that MNPS involves more than two parts of an NP scattered over the sentence:

(2) a. Fehler$_i$ sind ihm [so richtig dumme t$_i$]$_k$ gestern [keine t$_k$] unterlaufen
mistakes are him PRT really stupid yesterday none occured
'As for mistakes, he didn't make any really stupid ones yesterday'

  b. Bücher$_i$ hat man damals [interessante t$_i$]$_k$ in den Osten [keine t$_k$] mitnehmen dürfen
books has one then interesting in the East no with-take may
'As for books, one could not take any interesting ones to the East then'

Like regular split topicalization, MNPS is possible with subjects and (accusative) objects of transitive predicates (9), with subjects of unergative predicates (10), and with derived subjects of unaccusatives and passives (11):[3]

(9) a. Hunde$_i$ haben den Hans [so richtig bissige t$_i$]$_k$ im letzten Jahr [keine t$_k$] angefallen
dogs have the Hans PRT really snappish in last year none attacked
'As for dogs, no really snappish ones attacked Hans during the last year'

  b. Kinder$_i$ hat der Hans [so richtig kleine t$_i$]$_k$ bisher [keine t$_k$] verprügelt
children has the Hans PRT really small so-far none battered
'As for children, Hans hasn't battered any very small ones so far'

(10) a. Läufer$_i$ sind [so richtig schnelle t$_i$]$_k$ gestern [nur wenige t$_k$ mit großen Ohren] angetreten
runners are PRT really fast yesterday only few with big ears competed
'As for runners, only few really fast ones with big ears competed yesterday'

  b. Politiker$_i$ haben [wirklich prominente t$_i$]$_k$ bei der Einweihung der Müllhalde [nur wenige t$_k$] geredet
politicians have really prominent at the inauguration of-the garbage-dump only few spoken
'As for politicians, only few prominent ones spoke at the inauguration of the garbage dump'

[2] It is remarkable that this phenomenon has so far not received any attention in the literature, as far as I know. Pafel (1996: 167) merely gives the example in (2a), but does not discuss it; likewise, Fanselow & Cavar (2002) mention the phenomenon but do not analyse multiple-split constructions. There is also no mention of multiple splits in van Hoof 2006, an otherwise comprehensive survey of split-topicalization phenomena.

[3] In order to avoid unneccessary complications, throughout this paper I will use examples that involve a minimal amount of "regeneration" (van Riemsdijk 1989). Also notice that the examples involve modifiers that clearly indicate the base position of the NP, while floated quantifiers like *alle* 'all' could alternatively be analyzed as vP-adjuncts (Clemens Mayr, p.c.). In addition, notice that not only adjectival, but also postnominal PP-modifiers can be stranded, transparently indicating the base position of the split NP:

(i) Autos$_i$ hat er [so richtig schnelle t$_i$]$_k$ gestern [einige sehr teure t$_k$ mit Anhängerkupplung] gesehen
cars has he PRT really fast yesterday several very expensive with hitch seen
'As for cars, yesterday he saw some really fast expensive ones with hitches'

In the discussion below, however, I will use slightly less complicated examples.

(11)   a.   Frauen$_i$ sind [so richtig hässliche t$_i$]$_k$ bisher [nicht sehr viele t$_k$]
              angekommen
              women are PRT really ugly so-far not very many arrived
              'As for women, not very many really ugly ones have arrived so far'

        b.   Bücher$_i$ wurden [so richtig gute t$_i$]$_k$ in diesem Jahr [nur wenige t$_k$]
              rezensiert
              books were PRT really good in this year only few reviewed
              'As for books, only few really good ones have been reviewed this year'

Furthermore, MNPS is generally acceptable with dative objects, which are otherwise islands
for extraction (recall the data in (3c)):[4]

(12)   Schülern$_i$ hat der Lehrer [so richtig schlechten t$_i$]$_k$ wohl bisher [keinen t$_k$]
        geholfen
        students has the teacher PRT really bad apparently so-far no.DAT helped
        'As for students, apparently the teacher hasn't helped any of the really bad ones so
        far'

        Like regular splits (recall the data in (5)), MNPS is sensitive to the familiar Ross-type
island constraints:

(13)   a.   *Hunde$_i$ kenne ich [$_δ$ keinen Mann, den [so richtig bissige t$_i$]$_k$ bisher [nur
              wenige t$_k$] angefallen haben]
              dogs know I no man who PRT really snappish so-far only few attacked have
              'As for dogs, I don't know any man who has been attacked by only few really
              snappish ones so far'

        b.   *Kinder$_i$ hat der Hans gut geschlafen, [$_δ$ nachdem er [so richtig kleine t$_i$]$_k$ gestern
              [keine t$_k$] verprügelt hatte]
              children has the Hans well slept after he PRT really small yesterday none battered
              had
              'As for children, Hans slept well after not having battered any small ones
              yesterday'

        c.   *Fehler$_i$ sind ihm [so richtig dumme t$_i$]$_k$ gestern [$_δ$ viele t$_k$ und grobe Versprecher]
              unterlaufen
              mistakes are him PRT really stupid yesterday many and grave slips-of-the-tongue
              occurred

In (13a), δ is a complex NP, hence an island (Ross 1967), and extraction is blocked. The same
is true in (13b), where δ is an adjunct, and in (13c), where the topic is extracted from a
coordinate structure.[5]

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[4] Unfortunately, the status of constructions involving split genitive objects is hard to judge. This is
because genitive objects are generally perceived as archaic in modern German; the additional
complexity introduced by multiple split renders the resulting structure too awkward to be significant.

[5] Abstracting away from inflection (see section 2.2 below), (13a—13c) are fully acceptable with the
splits rearranged into their respective base positions (meanings as given above, *modulo*
topicalization):

(13a')   Ich kenne [$_δ$ keinen Mann, den bisher [nur wenige so richtig bissige Hunde] angefallen haben]
(13b')   Der Hans hat gut geschlafen [$_δ$ nachdem er gestern [keine so richtig kleinen Kinder]
          verprügelt hatte]
(13c')   Gestern sind ihm [$_δ$ viele so richtig dumme Fehler und grobe Versprecher unterlaufen]

Moreover, (14) shows that the topicalized constituent can move across clause boundaries, thus exhibiting the typical unboundedness of A'-dependencies:

(14) Fehler$_i$ sagt Hans, dass ihm [so wirklich dumme t$_i$]$_k$ gestern [keine t$_k$] unterlaufen sind
      mistakes says Hans that him PRT really stupid yesterday none occured are
      'As for mistakes, Hans says that he didn't make any really stupid ones yesterday'

As van Hoof (1997) notes, regular cases of split topicalization license parasitic gaps. The same is true for MNPS: although the judgments become somewhat subtle at this point, cases like those in (15) seem quite acceptable:[6]

(15)   a.   Bücher$_i$ hat er [ohne *pg*$_i$ zu lesen] [so richtig gute t$_i$]$_k$ bisher [keine t$_k$] verbrannt
            books has he without to read PRT really good so-far none burnt
            'As for books, he has so far not burnt any really good ones without reading them'

       b.   Kinder$_i$ hat der Hans [ohne vorher *pg*$_i$ zu warnen] [so richtig kleine t$_i$]$_k$ bis jetzt [nur wenige t$_k$] verprügelt
            children has the Hans without previously to warn PRT really small until now only few battered
            'As for children, Hans has so far battered only few very small ones without having previously warned them'

       c.   Bücher$_i$ sind [ohne *pg*$_i$ zu lesen] [so richtig gute t$_i$]$_k$ im letzten Jahr [relativ viele t$_k$] weggeworfen worden
            books are without to read PRT really good in-the last year relatively many thrown-away were
            'As for books, relatively many really good ones were thrown away during the last year without having been read'

I take the data in (13—15), then, to demonstrate that MNPS involves A'-movement of the topicalized constituent.[7] It exhibits the same characteristics of movement that led to the demise of base-generation accounts of regular split constructions (see Fanselow & Cavar 2002 for review).

2.2 *A note on inflection*
An interesting property of split topicalization in general is that it yields a somewhat surprising pattern of inflection, as was first noted in van Riemsdijk 1989. The inflection on the splits does not necessarily correspond to the inflection on the continuous counterpart; that is, with regard to inflection the various parts of a split NP can take a morphologically different shape than they do in the base-form of the NP.

(16)   a.   Er hat [kein Geld]
            he has no-WEAK money

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[6] A counterpart to the subject-MNPS case in (9a) can also be constructed:
(i)   Hunde$_i$ haben [ohne vorher *e*$_i$ zu bellen] [so richtig bissige t$_i$]$_k$ schon [sehr viele t$_k$] den Hans angefallen
However, as Cedric Boeckx (p.c.) points out, it is hard to tell whether in these cases *e* = *pg* or *e* = *PRO* (adjunct control). If *e* = *pg*, it will not be c-commanded by the true gap. I will set this issue aside.
[7] As Jim Huang (p.c.) points out, it remains to be shown what kind of dependency relates the base position and the medial part. But this raises the familiar (and perennial) problem of classifying German-type scrambling (see Webelhuth 1992), which I set aside for the purpose of this paper.

    b. Er hat kein-es
        he has no-STRONG

    c. Geld$_i$ hat er [kein-es t$_i$]
        money has he no-STRONG

    d. *kein-es Geld
        no-STRONG money

In (16a), the negative quantifier *kein* bears weak inflection, while in the analogous split-topicalized structure (16c) it obligatorily carries strong inflection – just like in (16b), where *kein* is an independent NP. In general, as Fanselow & Cavar (2002) observe, the two splits always inflect as if they were independent NPs. As (16d) shows, the strong inflection on *kein* is incompatible with the head noun *in situ*.

    With Fanselow & Cavar (2002), I do not take this to be an indication that the splits are actually base-generated in their respective surface positions (we have seen strong reasons to assume that movement is involved). Rather, it seems like split-topicalization provides another piece of evidence in favor of the general hypothesis that morphological shape is determined (at least in part) post-syntactically (cf. Bobaljik 2006 and many others): in the morphological component, all parts of a discontinuous NP have to meet the general well-formedness conditions on NPs.[8]

    The actual intuitions of German native speakers support the hypothesis that determination of strong vs. weak inflection is a "surfacey", morphophonological matter. As Volker Struckmeier (p.c.) points out, the intuition of (most) native speakers is merely this: strong inflection must be expressed if there is prenominal material that can carry it, and strong inflection can never follow weak inflection. The following data illustrate:

(17)   a. mit Bier
        with beer

    b. mit kühlem frischen Bier
        with cool.STRONG fresh.WEAK beer

    c. mit kühlem frischem Bier
          STRONG STRONG

    d. *mit kühlen frischen Bier
          WEAK WEAK

    e. *mit kühlen frischem Bier
          WEAK STRONG

In (17a), there is no prenominal material that could carry strong inflection, hence it need (can) not be expressed. Both (17b) and (17c) are judged fully acceptable by an overwhelming majority of speakers; strong inflection can either be expressed once (17b) or twice (17c). (17d) shows that it must be expressed if there is a potential bearer, and (17e) shows that strong must precede weak.

    Thus, we see that the exact number of strong inflections is not fully fixed ((17b) and (17c) are equally good), and that the distribution of strong and weak is purely linear (strong must precede weak). This suggests that determination of inflection is a matter of PF only (i.e., determined post-syntactically).

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[8] The same reasoning applies to instances of "regeneration," which I will not discuss here; see van Riemsdijk 1989 and Fanselow & Cavar 2002 for discussion.
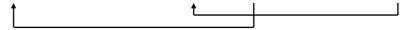
2.3 *Freezing*
We have established in section 2.1 that MNPS as shown in (2), repeated here, is the result of movement.

(2) a.   Fehler$_i$ sind ihm [so richtig dumme t$_i$]$_k$ gestern [keine t$_k$] unterlaufen
mistakes are him PRT really stupid yesterday none occur
'As for mistakes, he didn't make any really stupid ones yesterday'

    b.   Bücher$_i$ hat man damals [interessante t$_i$]$_k$ in den Osten [keine t$_k$] mitnehmen dürfen
books has one then interesting in the East no with-take may
'As for books, one could not take any interesting ones to the East then'

If indeed a multiply-split NP such as [*Fehler … so richtig dumme … keine*] in (2a) is derived from the NP in (18), MNPS must be taken to involve multiple movement steps, illustrated in (19):

(18)   [$_{NP}$ keine so richtig dumme Fehler]

(19)   Fehler$_i$ sind ihm [so richtig dumme t$_i$]$_k$ gestern [$_{NP}$ keine t$_k$] unterlaufen

If this analysis is correct, MNPS can be abstractly schematized as follows:

(20)   α … [$_β$ … $t_α$ …] … [$_γ$ … $t_β$ …]

That is, *prima facie* at least, it looks like multiple splits arise by subextraction of a constituent β from a larger constituent γ, followed by extraction of the topicalized α from β. I will henceforth refer to the topicalized element as α, to the intermediate part as β, and to the part that is stranded in the base position of the split NP as γ.

    Notice now that the structure in (20) violates a constraint extensively documented by Müller (1998) for German in particular; we may call this constraint the Freezing Principle (FP). It states, in effect, that extraction of a constituent α from XP β is possible only if β is *in situ*.

(21)   *Freezing Principle* (adapted from Müller 1998: 20)
At S-structure, a trace *t* may not be included in a moved XP (i.e., an XP that binds a trace) if the antecedent of *t* is not included in XP.

(22)   a.   … α$_1$ … [$_β$ … t$_1$ …]$_2$ (Müller 1998: 124)
        b.   *… α$_1$ … [$_β$ … t$_1$ …]$_2$ … t_2

According to the FP, a dislocated phrase becomes opaque for subextraction (see Müller 1998: ch. 4, sec. 2 for discussion, and Corver 2006 for freezing effects more generally).[9] Notice how Müller's banned structure in (22b) corresponds directly to the schema in (20): MNPS, involving subextraction of α from the previously dislocated/scrambled phrase β, appears to present a straightforward counterexample to the principle in (21).

    Before moving on to resolving the dilemma, let us first make sure that the FP is really a principle worth maintaining. To this end, let us briefly review the main evidence for the FP.

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[9] Since phrases move into specifier or adjunct positions, many of the cases ruled out by (21) are independently excluded by the CED (Huang 1982, Jim Huang p.c.). Nevertheless, there are empirical differences; see Müller 1998, Corver 2006, and references therein.

Less significantly for our purposes here, freezing of an NP is induced by passivization, (embedded) topicalization, and *wh*-movement:

(23)   a.   Worüber$_i$ ist von keinem [ein Buch t$_i$] gelesen worden?
            about-what is by nobody a book read been

       b.   *Worüber$_i$ ist [ein Buch t$_i$] von keinem gelesen worden?

            'About what has nobody read a book?'

(24)   a.   [Über wen]$_i$ meinst du [$_{CP}$ t'$_i$ hat der Fritz [ein Buch t$_i$] geschrieben?]
            about who think you has the Fritz a book written

       b.   *[Über wen]$_i$ meinst du [$_{CP}$ [ein Buch t$_i$]$_k$ hat der Fritz t$_k$ geschrieben?]
            'About who do you think Fritz has written a book?'

(25)   a.   Worüber$_i$ hast du [$_{NP}$ was für Bücher t$_i$] gelesen?
            about-what have you what for books read
            'About what have you read which books?'

       b.   *Worüber$_i$ hast du gesagt [$_{CP}$ [$_{NP}$ was für Bücher t$_i$] er gelesen hat?]
            about-what have you said what for books he read has
            'About what did you say that he read which books?'

(23) shows that (optional) A-movement of a passive subject to SPEC-T renders the NP opaque for subextraction. Likewise, (24) shows that a phrase that is topicalized within an embedded clause becomes nontransparent, and (25) shows that *wh*-extraction from NP is possible only if NP has not itself been *wh*-moved before. The FP holds for these types of movement, at least in German.

   More significantly in the present context, it also holds for scrambling, i.e. a phrase that has been scrambled to the left is no longer transparent for extraction (Müller 1998: ch. 4, sec. 2.1.2). Consider the following cases:

(26)   a.   [Über wen]$_i$ hat der Fritz letztes Jahr [ein Buch t$_i$] geschrieben?
            about whom has the Fritz last year a book written

       b.   *[Über wen]$_i$ hat der Fritz [ein Buch t$_i$]$_k$ letztes Jahr t$_k$ geschrieben?
            'About whom did Fritz write a book last year?'

(27)   a.   Worüber$_i$ hat keiner [ein Buch t$_i$] gelesen?
            about-what has nobody a book read

       b.   *Worüber$_i$ hat [ein Buch t$_i$] keiner t$_k$ gelesen?
            'About what has nobody read a book?'

As the a-examples in (26,27) show, the NP is transparent for extraction when *in situ*. Once it is scrambled to the left, across an adverb or a subject, however, the NP becomes frozen, as witnessed in the b-examples. The resulting deviance is strong, and the effect generalizes across constructions. I therefore take it that the FP is a valid principle of German grammar, perhaps beyond. Therefore, the problem remains: MNPS appears to involve subextraction from a moved (scrambled) phrase, in violation of the FP.

   Let me briefly summarize the discussion so far. German allows topicalizing parts of DPs, known as split topicalization. The specific subcase of split topicalization discussed here involves leftward movement of a constituent (β) subextracted from subject or object position (γ), followed by topicalization of a subpart (α) of the moved constituent. This constitues a

prima facie violation of the Freezing Principle (21), which states that subextraction from a moved phrase is impossible, as exemplified by the impossibility of A'-extraction from a scrambled NP in German (26,27). It seems, then, that MNPS provides a straightforward counterexample to the otherwise well-established FP. In the following section, I will argue that this is not the case, and propose (following Fanselow & Cavar 2002) an analysis that conforms to the FP while accounting for the facts described so far.

3. The Distributed Deletion approach

3.1 *Distributed Deletion*

Recall from section 2.1 that split topicalization respects certain island constraints but not others. In particular, we saw that subjects and dative/genitive objects can be split easily, while they are otherwise opaque for subextraction; at the same time, we noted that split topicalization, like other types of movement, is sensitive to Ross-type islands.

     This asymmetry is the starting point for the analysis of split phenomena presented in Fanselow & Cavar (2002) (henceforth, F&C). They restate the observation that NP splits respect only those islands that are larger than the NP to be split itself as follows:

(28)   *Fanselow & Cavar's generalization* (2002: 82)
       A movement barrier Σ does not block the formation of a split XP if and only if Σ itself is the XP to be split up.

That is, if an NP is an island, subextraction from that NP is banned, but it can still be split. Building on this observation, F&C develop a general theory of split constructions according to which NP-split topicalization does indeed involve movement, albeit not extraction *from*, but movement *of* the split NP.

     In more concrete terms, what this means is that when an NP is split, it is actually the full NP that is copied into two different positions; however, *Distributed Deletion* (henceforth, DD) in the phonological component makes the result look as if only part of the NP had been moved:

(29)   [~~keine~~ Bücher] hat er [keine ~~Bücher~~] gelesen

This approach is natural from the perspective of "single-output models" in the sense of Bobaljik (1995), Groat & O'Neill (1996), and Pesetsky (1998), among others. The idea that F&C take from such conceptions is that "under certain conditions, deletion may affect *both* the upstairs *and* the downstairs copy, but in a partial way so, which yields the split XP construction" (their emphasis). In other words, what looks like partial movement is, in fact, movement/copying of the full NP; but deletion can target (parts of) both copies, yielding the superficial impression of a split NP (see also Wilder 1996 and Hinterhölzl 2002 for different applications of this idea). Full deletion of the lower copy yields standard topicalization, while partial deletion of both copies yields split topicalization.[10]

     Recall from the introduction that in cases of split-NP topicalization, the topicalized part (α) is interpreted as topic, while the stranded part (γ) is interpreted as a focus. According to F&C, it is this dual semantico-pragmatic role of the NP that causes the split (in languages that allow it). The following schema illustrates:

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[10] Distributed Deletion thus allows for a reformulation of many constructions standardly analyzed by means of remnant movement. See Hinterhölzl (2002) for discussion, and for arguments against reducing remnant movement to partial deletion.

(30)   a.   [$_{NP}$ keine$_{[Foc]}$ Bücher$_{[Top]}$] $\Rightarrow$

     b.   [$_{CP}$ [$_{NP}$ ~~keine~~ Bücher$_{[Top]}$] ... [$_{NP}$ keine$_{[Foc]}$ ~~Bücher~~] ...]

According to F&C, copy movement always takes place, whether or not it is reflected in the resulting surface phonetic form. Which parts of the copies get pronounced depends on the strength of the attracting features: if a feature attracting a copy is strong, the corresponding part of the copy (bearing a matching feature) must be pronounced in the derived position. Thus, NP splits arise if an NP bears at least two different operator features, and if the corresponding features on distinct functional heads are each strong, requiring pronunciation of different parts of the NP in different positions. For the purposes of this paper, we can simply assume the following: a constituent bearing a [Top(ic)]-feature must be realized in SPEC-C (the topic position), while a [Foc(us)]-feature requires pronunciation *in situ*.[11]

For now, this rough characterization of the DD theory is sufficient – see F&C's original paper for all details and virtues of the approach.[12] Notice that F&C do not discuss MNPS; as I will show now, their approach can be successfully applied to this case, too.

3.2 *Deriving MNPS*

In this section, I will develop a theory of MNPS based on the DD approach to split topicalization. Notice that the task is twofold: on the one hand, I have to show that MNPS can be generated despite the validity of the Freezing Principle (21) discussed in section 2.3; on the other hand, I have to explain the difference between cases of MNPS and the freezing cases. That is, my theory not only has to derive MNPS structures, it also has to account for the fact that (31a) is good while (31b) is bad, despite the fact that superficially, both look like instances of extraction from a scrambled phrase.

(31)   a.   Bücher$_i$ hat man damals [interessante t$_i$]$_k$ in den Osten [keine t$_k$]
       mitnehmen dürfen
       books has one then interesting in the East no with-take may
       'As for books, one could not take any interesting ones to the East then'

     b.   *Worüber$_i$ hat [ein Buch t$_i$] keiner t$_k$ gelesen?
       about-what has a book nobody read
       'About what has nobody read a book?'

Let us consider the two standard cases of MNPS given above: multiple split of a subject (9a) and of an accusative object (9b). The relevant data are repeated here in adapted form as (32a) and (32b), respectively (traces omitted):

(32)   a.   [$_\alpha$ Hunde] haben den Hans [$_\beta$ so richtig bissige] im letzten Jahr [$_\gamma$ keine]
       angefallen
       dogs have the Hans PRT really snappish in last year none attacked
       'As for dogs, no really snappish ones attacked Hans during the last year'

     b.   [$_\alpha$ Kinder] hat der Hans [$_\beta$ so richtig kleine] bisher [$_\gamma$ keine] verprügelt
       children has the Hans PRT really small so-far none battered
       'As for children, Hans hasn't battered any very small ones so far'

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[11] F&C adduce some evidence for focalization in Croation requiring movement to some dedicated specifier. No evidence of this kind exists for German, as far as I know.

[12] One salient advantage of the approach is that it evades the problem of movement of bar-level categories, and hence eliminates the need for "regeneration", in the sense of van Riemsdijk (1989).

Let us focus first on (32a). Under the DD approach outlined in section 3.1, the structure must involve three full copies of the abstract base-NP *keine so richtig bissige Hunde* 'no really snappish dogs'; the position of each copy is indicated by the split-parts labeled α, β, and γ. That is, the full structure of (32a) before deletion is as follows:

(33)   [α keine so richtig bissige Hunde] haben den Hans [β keine so richtig bissige Hunde]
         im letzten Jahr [γ keine so richtig bissige Hunde] angefallen

Assume now that *Hunde* bears a [Top]-feature, and that C has a corresponding strong feature; *keine* has a [Foc]-feature, which I assume is realized *in situ*. From this it follows that *Hunde* must be pronounced in SPEC-C, while *keine* is pronounced in the base position. Leaving β aside for the moment, this much is sufficient to yield the following simple split:

(34)   [~~keine~~ Hunde_{[Top]}] haben den Hans im letzten Jahr [keine_{[Foc]} ~~Hunde~~] angefallen
         'As for dogs, none have attacked Hans during the last year'

Of course, the MNPS in (32a) is more complex: it also involves an intermediate part, labeled β. As shown in (33), I assume that β is in fact a further full copy of the base-NP that is scrambled into the *Mittelfeld*. Notice that this scrambling is optional; the material inside β can be realized *in situ*, which again yields a simple split:

(35)   [~~keine so richtig bissigen~~ Hunde_{[Top]}] haben den Hans im letzten Jahr [keine so
         richtig bissigen ~~Hunde~~]_{[Foc]} angefallen
         'As for dogs, no really snappish ones attacked Hans during the last year'

I assume that in a case like (35), the entire NP *keine so richtig bissigen Hunde* bears a [Foc]-feature; the additional [Top]-feature on *Hunde*, however, requires this element to be pronounced in the left periphery, resulting in movement of the entire NP.

        The MNPS case arises if only *keine*, not the entire NP, bears a [Foc]-feature. In this case, the material labeled β can scramble into the *Mittelfeld*, yielding (33); subsequently, DD applies to all three copies:

(36)   [α ~~keine so richtig bissige~~ Hunde_{[Top]}] haben den Hans [β ~~keine~~ so richtig bissige
         ~~Hunde~~] im letzten Jahr [γ keine_{[Foc]} ~~so richtig bissige Hunde~~] angefallen

As before, *Hunde* and *keine* are pronounced in their respective positions because of their pragmatic features, which are related to these positions. One might want to attribute the pronunciation of the material in the β-part to some feature as well, but I do not think that this is necessary. It suffices to assume that, given that features regulate the pronunciation/deletion of material in α and γ, pronunciation of β simply follows the natural principle "pronounce what's left".[13] That is, given that *Hunde* must be pronounced in topic position and *keine* in focus position, the only material that remains to be pronounced in the *Mittelfeld* is *so richtig bissige* 'really snappish ones'.[14]

        We can derive the object case in (32b) in an exactly parallel fashion. Topicalization, *in-situ* focus, and (optional) scrambling yield the familiar triplet of copies of the abstract base-NP *keine so richtig kleine Kinder*:

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[13] An independent principle that must be assumed by any kind of copy theory is that material is generally not pronounced more than once; I am tacitly presupposing this economy condition here.
[14] In the introduction, I tentatively characterized the β part as a secondary focus. Whether or not this is accurate, whatever pragmatic function the scrambled part assumes, it is arguably a consequence of scrambling, and need not be attributed to some explicit feauture on β.

(37)   [$_\alpha$ keine so richtig kleine Kinder$_{[Top]}$] hat der Hans [$_\beta$ keine so richtig kleine Kinder]
        bisher [$_\gamma$ keine$_{[Foc]}$ so richtig kleine Kinder] verprügelt

As before, pronunciation/deletion of *Kinder* 'children' and *keine* 'no' is fixed: the former is a topic, hence pronounced in SPEC-C, while the latter is a focus, hence pronounced *in situ*. When applied to β, DD simply follows the rule "pronounce what's left"; hence, we have the following deletion pattern for (38):

(38)   [$_\alpha$ ~~keine so richtig kleine~~ Kinder$_{[Top]}$] hat der Hans [$_\beta$ ~~keine~~ so richtig kleine ~~Kinder~~]
        bisher [$_\gamma$ keine$_{[Foc]}$ ~~so richtig kleine Kinder~~] verprügelt

As the reader can easily verify, this analysis likewise accounts for the MNPS cases in (10) (with intransitives) and (11) (with passives/unaccusatives). They will therefore not be discussed separately.

   It seems, then, that the DD analysis proposed for simple splits by F&C can successfully handle MNPS as well. The only additional assumption necessary is that in an optionally leftward-scrambled copy of the original NP, DD targets those parts whose pronunciation is not determined independently by topic/focus considerations ("pronounce what's left").

   In the exposition so far, I have abstracted away from details of inflection, calling the base-NPs "abstract" to indicate that they differ from regular surface forms. As mentioned in section 2.2, splits of NPs generally inflect as if they were independent NPs; I suggested in that section that this behavior supports the idea that morphology is determined post-syntactically. Each part of a split NP is treated as an independent NP by the morphology (imposing general well-formedness conditions on NPs), although it is part of a discontinuous NP from the point of view of syntax. The analysis of MNPS proposed here introduces no additional complications: each part α, β, γ of the split NP originates in the base position indicated by γ, but is treated by the morphology as independent. The inflectional pattern thus follows straightforwardly, as described in section 2.2.

   It is obvious how the DD analysis circumvents the freezing problem outlined in section 2.3. The FP (21) is not violated by MNPS because it os derived by copying of the entire NP into distinct positions, *not* subextraction from NP. That is, the schema given in (20), repeated here, which was based on superficial impression, is not accurate under the analysis assumed here:

(20)   α ... [$_\beta$ ... t_α ...] ... [$_\gamma$ ... t_β ...]

It turns out that the impression reflected in this schema is too superficial; a more accurate schema is the following (α, β, γ here understood as descriptive labels; all are copies of the same constituent):

(39)   [$_\alpha$ ~~X Y~~ Z] ... [$_\beta$ ~~X~~ Y ~~Z~~] ... [$_\gamma$ X ~~Y Z~~]

   An analysis based on DD is thus capable of evading freezing effects in an elegant way. However, this turns the problem onto its head: if MNPS involves copy-movement, not subextraction, why can we not apply the same reasoning to the freezing cases? That is, we are back at the question why (31a) is good while (31b) is bad, but from a different perspective. We have seen that a case like (31a) can be analyzed in terms of DD, based on simple pronunciation rules:

(31a)   [~~keine interessante~~ Bücher$_{[Top]}$] hat man damals [~~keine~~ interessante ~~Bücher~~] in den
        Osten [keine$_{[Foc]}$ ~~interessante Bücher~~] mitnehmen dürfen
        'As for books, one could not take any interesting ones to the East then'

But now we should be able to apply the same reasoning to (31b), so that this case involes no subextraction either:

(31b)   *[~~ein Buch~~ worüber*wh*] hat [ein Buch ~~worüber~~] keiner ~~[ein Buch worüber]~~ gelesen?
         'About what has nobody read a book?'

If this represents the right analysis, we predict the sentence to be fine, contrary to fact. It certainly does not violate the FP, since no subextraction takes place.

I think that there are several ways to explain the difference between (31a) and (31b) – that is, the general difference between MNPS and the freezing cases discussed in section 2.3. One could argue that (31b) does in fact involve genuine extraction, i.e. that the DD analysis does not apply here (see Hinterhölzl 2002 for arguments that UG allows both DD and genuine extraction/remnant movement). Notice, in this regard, that F&C adduce some evidence suggesting that postnominal material (like *worüber* in (31b)) cannot pied-pipe the entire NP; hence, the *wh*-phrase must be extracted from the scrambled NP, which however violates the FP (21). I leave for further work the question of whether or not this kind of analysis can handle all of the relevant cases.

Alternatively, one could assume that DD does apply in these cases, as illustrated above. Notice however that in (31b), deletion fully deletes one copy (the lowest). I propose that this is not possible: DD can only apply if it leaves some material in each copy of a chain undeleted. The chain in (31a) involves only partially deleted copies, hence the resulting structure is fine. The chain in (31b), however, contains a fully deleted copy and two partially deleted copies. I submit that this is what yields the deviance. If some member of a movement chain is to be deleted fully, it has to surface continuously in its full form in the derived position (the standard movement case).[15]

If this analysis can be maintained, it suggests that freezing effects actually arise because of a misapplication of deletion in the morphophonological component of the grammar. Hence, it seems like what is relevant here is an interface condition on syntactic chains: all chains must involve either only partially deleted links or only fully (un-)deleted copies. Notice that the latter option is the only one available in the majority of languages that do not allow discontinuous constituents at all; this suggests that DD is a rather special property of some grammars such as German, and that it follows the general rule (presumably an interface requirement) that some part of each split must be pronounced. This proposal can account for the difference between MNPS and the freezing data in section 2.3 – whether or not it can be defended against a larger empirical base is a question beyond the scope of the current paper.

4. Conclusion

In this paper, I have investigated the basic properties and developed a basic analysis of multiple NP splits, a construction type that has to my knowledge not been discussed in the previous literature. First, I have shown in section 2.1 that the topicalized split-part (labeled α) must be A'-moved from its base position; MNPS respects the robust Ross-type islands, is unbounded, and licenses parasitic gaps. Second, in section 2.2 I confirmed the intuition expressed in Fanselow & Cavar 2002 that inflection alternations found in connection with split NPs are indeed very "surfacey" in that they allow some variation, and are based on linear order only. Thus, the two sections show that a movement analysis of multiple splits is indeed necessary (as is the case with simple splits). Third, I noted (section 2.3) that a movement analysis of multiple splits potentially clashes with the Freezing Principle (21), extensively discussed by Müller (1998). MNPS appears to be derived by subextraction of the

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[15] Notice that in the cases discussed here, the lowest copy always contains a focus-bearing element. For this reason, it cannot be deleted fully (a focus-marked element must be pronounced).

topicalized element (α) from a leftward-scrambled phrase (β); but there is good reason to believe that this subextraction is impossible.

The Distributed Deletion approach, proposed by Fanselow & Cavar (2002) and discussed in section 3.1, can resolve the tension. Their approach is based on the observation that while NPs that are islands for extraction can be split, split topicalization cannot apply when the NP is inside a larger island. Hence, split topicalization must involve copying of the entire NP, followed by partial deletion of each copy. Following this line of reasoning, I proposed in section 3.2 a DD analysis of MNPS that evades the clash with the Freezing Principle. In this approach, multiple splits are in fact indications of multiple underlying copies of the "split" NP. DD then yields the superficial split pattern. In particular, while α and γ are pronounced in the left periphery and *in situ*, respectively, due to their semantico-pragmatic features, the intermediate split-part β is the result of optional scrambling and the natural pronunciation rule "pronounce what's left". This accounts straightforwardly for the standard MNPS pattern.

The approach made it necessary, however, to introduce a new way of distinguisting between MNPS and those cases that are blocked by the FP. For if the latter could be simply reanalyzed in terms of copying and DD, they would no longer be predicted to violate the FP, contrary to fact. In order to account for the difference, I suggested that DD, being an idiosyncratic property of German grammar, can only apply *partially* to each member of a chain. That is, while it can delete parts of NP copies (as in MNPS), it cannot delete copies entirely (as in the freezing cases). Given this natural assumption about DD, we can explain the generation of MNPS structures and the deviance of subextraction from a moved constituent at the same time.

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