Symmetric Merge and Local Instability[*] Evidence From Split Topics

Dennis Ott

University of Groningen

`dennis.ott@post.harvard.edu`

March 26, 2012

In this paper, I argue against the standard analysis of so-called *split topics* in German as discontinuous noun phrases (van Riemsdijk 1989). Building in part on Fanselow 1988, I show that the construction rather involves two morphosyntactically autonomous nominal constituents that are predicatively related in underlying form. This predication is syntactically *unstable*, however: Merge of two XPs within a single argument or adjunct position yields a symmetric structure for which no label ('head') can be detected by Minimal Search ('for any syntactic object $\{\alpha, \beta\}$, α is the head if α is a lexical item;' cf. Chomsky 2008). Therefore, one of the two noun phrases must move at the phase level in order to render the structure asymmetric; in case the stranded noun phrase is elliptic, the impression of a discontinuous constituent arises. By providing a principled explanation for split topicalization in these terms, the analysis furnishes evidence for an architecture in which Merge applies freely (*pace* recent claims to the contrary, e.g. by Kayne 2010), and as an asymmetrizing device when applying internally (as movement), in the spirit of Moro 2000 and Chomsky 2011.

1 Introduction

This article presents a novel analysis of split topicalization (henceforth, ST), arguing that it sheds light on the fundamental workings of syntax. While the empirical focus will be on German, ST is in fact a crosslinguistically widespread construction type in which, descriptively speaking, a noun phrase (or a PP) is split up into two discontinuous parts.[1] The following is a simple case of ST (data are from German unless indicated otherwise):

(1)   Bücher hat Peter leider   erst drei gute gelesen.
       books has Peter unfortunately only three good read
       'As for books, Peter has only read three good ones.'

---

[*] Acknowledgments to be added.

[1] I am setting aside the existence of multiple splits for the purposes of this paper. In Ott 2011b I show that such multiple splits are straightforwardly accounted for by the analysis proposed in section 4.

Throughout the paper, I refer to the fronted element as TOP (for topic) and to the stranded part as REM (for remainder) for convenience; both will appear underlined for the sake of readability.[2]

Prima facie, (1) could be taken to involve subextraction, i.e. a discontinuous surface linearization of an underlyingly continuous constituent *drei gute Bücher* 'three good books.' Here I will argue, following Fanselow (1988), that this initial impression is misguided: ST relates two autonomous nominal constituents, rather than subparts of a single noun phrase. In section 2 I will adduce various pieces of empirical evidence in support of this claim. In addition to morphosyntactic properties betraying the structural autonomy of TOP and REM, the fact that the latter can be 'gapless' militates most decisively against an extraction analysis:

(2) Seltene Raubvögel   hat Jürgen nur ein paar Bussarde gesehen.
     rare   birds of prey has Jürgen only a few   buzzards seen
     'As for rare birds of prey, Jürgen only saw a couple of buzzards.'

As discussed in section 3, the fact that movement can be detected in such 'gapless' cases all the same clearly highlights the problem raised by ST, *viz.* the presence of a displaced category in the absence of a corresponding gap.

To resolve this seemingly paradoxical situation, I suggest in section 4 that TOP (a predicative NP) and REM (a term-denoting DP) are directly merged as subject and predicate internal to an argument/adjunct position. The following is a simplified version of the derivation of (2):

(3)   [NP seltene Raubvögel]$_i$ ... [VP [[DP ein paar Bussarde] t_i] gesehen]

Adopting ideas of Chomsky (2011), I will argue that the original configuration relating the two noun phrases is *locally unstable*, in that a structure of the type {XP, YP} has no detectable head (label). Therefore, movement must displace the NP predicate, yielding the 'split'—now understood as the syntactic separation of NP and DP—in overt form. Various predictions of this approach will be made explicit and shown to be borne out.

Section 5 sketches an extension of the approach to quantifier float, suggesting that this construction, too, involves symmetry-breaking movement enforced by labeling. Finally, section 6 concludes and summarizes the broader implications of the analysis.

2 Against subextraction

Simple cases of ST like (1) seem to be amenable to a straightforward extraction analysis. On this view, defended in van Riemsdijk 1989,[3] (1) has the derivation given below:

(4)   Bücher$_j$ hat Peter leider erst [DP drei gute t_i] gelesen

A first theoretical worry arising from (4) is that it requires movement of an NP segment, assuming that the stranded AP *gute* is adjoined to NP; such movement of segments is arguably not allowed by the grammar, however (Kayne 1994). Setting aside this theory-internal issue, it turns out that the extraction analysis is problematic for a variety of empirical reasons as well (cf. Fanselow 1988; Fanselow and Ćavar 2002; van Hoof 2006).

---

[2]To save space, I will not consistently provide full translations in subsequent sections; as indicated in (1), ST constructions can typically be paraphrased as 'As for TOP, ... REM ...'

[3]Variants and refinements of van Riemsdijk's analysis can be found in Tappe 1989, Bhatt 1990, Haegeman 1995, Kniffka 1996, and Pafel 1996; the problems pointed out below apply with equal force to all of these, however. A subextraction analysis of ST is often assumed without further comment in works that mention the phenomenon only cursorily, e.g. Molnár and Winkler 2010.

2.1 Unexpected transparency

Fanselow and Ćavar (2002) emphasize the fact that ST is insensitive to constraints that apply to regular instances of (PP-)subextraction (on which see, e.g., Müller 1995), concluding that different operations must be involved in each case. In German, oblique objects consistently disallow subextraction but productively participate in ST, as shown in (5) and (6). Subjects show a mixed behavior with regard to subextraction (cf. Haider 1993 vs. Müller 1995) but productively undergo ST (7). Definite DPs, too, disallow subextraction but freely undergo ST (8).

(5) a. *Worüber$_i$ wurde schon   [$_{DP}$ mehreren Büchern t_i] ein Preis verliehen?
         about what was   already   several   books.DAT   a   prize awarded
     b. <u>Büchern</u>   <u>über</u>   <u>Polen</u> wurde schon   <u>mehreren guten</u>   ein Preis verliehen.
         books.DAT about Poland was   already several   good.DAT a   prize awarded

(6) a. *An Studenten$_i$ habe ich ihn [$_{DP}$ schrecklicher Morde t_i] bezichtigt
         of students   have I   him   horrible   murders.GEN   accused
     b. <u>Schrecklicher</u> <u>Morde</u>   <u>an</u> <u>Studenten</u> wurde er <u>vieler</u> bezichtigt.
         horrible   murders.GEN of students   was   he many accused

(7) a. *[$_{PP}$ An Gary]$_i$ hat mich [$_{DP}$ kein [$_{NP}$ Brief t_i]] erschreckt
             to Gary   has me   no   letter.NOM   frightened
         'No letter to Gary frightened me.'
     b. <u>Briefe</u> <u>an</u> <u>Gary</u> haben mich <u>keine</u> erschreckt.
         letters to Gary have   me   no   frightened
         'As for letters to Gary, none of them have frightened me.'

(8) a. *Worüber$_i$ hast du   [$_{DP}$ die Bücher t_i von Grass] gelesen?
         about what have you   the books   by   Grass read
     b. <u>Bücher</u> <u>über</u>   <u>Liebe</u> habe ich bisher nur <u>die</u>   <u>von</u> Grass gelesen.
         books   about love   have I   so far only those by   Grass read

These contrasts cast serious doubt on the general validity of the derivation in (4); at the very least, proponents of such an analysis are hard put to explain the discrepancy between PP-subextraction and the putative cases of NP-subextraction.

An aggravating factor is that the application domain of ST extends to adjuncts, standardly taken to be opaque for subextraction. In the following case, ST splits a free dative, i.e. an optional (unselected) dative with a beneficiary interpretation:

(9) <u>Kindern</u>   hat Peter nur <u>den</u> besonders   <u>netten</u>   einen Kuchen gebacken.
     children.DAT has Peter only the particularly nice.DAT a   cake   baked

Free datives, like other adjuncts, never allow for subextraction (see Vogel and Steinbach 1998). As before, the burden is on the prononents of the extraction theory to provide an explanation for why extraction out of adjuncts is possible in ST but not otherwise.

2.2 Antecedent–gap mismatches

In addition to these discrepancies between ST and genuine instances of subextraction there are further severe problems for a van Riemsdijk-style extraction analysis. If ST is subextraction from a noun phrase, we expect each TOP and REM to reflect morphosyntactic properties of the source constituent. As it turns out, however, this is not the case: each TOP and REM is a morphosyn-

tactically *autonomous* constituent.[4]

Adjectival inflection in German exhibits a strong/weak distinction, basically depending on whether or not a noun phrase contains a determiner to host strong inflection.[5] In the following example, the negative quantifier/determiner *keine* 'no' bears strong inflection; consequently, the adjective *polnische* 'Polish' is realized with a weak ending:

(10) Sie hat keine   polnischen   Gänse gekauft.
      she has no.STRONG Polish.WEAK geese   bought

As already noted in Fanselow 1988, adjectival inflection in TOP and REM differs from the continuous pattern in that an adjective in TOP invariably bears strong inflection:[6]

(11) Polnische   Gänse gekauft hat sie keine.
      Polish.STRONG geese   bought has she no.STRONG

An extraction analysis has to resort to postsyntactic realization of inflectional morphology that yields the observed surface properties (as anticipated by van Riemsdijk 1989)—perhaps a plausible view, which however has never been clearly articulated, to my knowledge. The simpler explanation is that REM is an elliptic DP (note that NP-ellipsis is freely available in German, cf. Lobeck 1995), exactly as in the following non-ST cases:

(12) Sie hat keine   gekauft.
      she has no.STRONG bought

The morphosyntactic autonomy of TOP and REM is further corroborated by the fact that TOP can contain an additional indefinite article (van Riemsdijk's 1989 'determiner overlap'):

(13) Eine Katze habe ich nur eine ganz kleine gesehen.
      a   cat   have I only a   very small seen

The emergence of the 'extra' article is mysterious from the point of view of an extraction analysis, especially since it is not obviously a repair effect or morphological adjustment: for most speakers, presence of the article in TOP is optional or at least not strictly obligatory.[7] As before, the facts are unproblematic on the assumption that TOP and REM are separate constituents.

That morphosyntactic mismatches between TOP and its putative base position are not repairs invoked to accomodate surface constraints is also indicated by the internal structure of TOP and

---

[4]Some of the facts mentioned below were already observed by van Riemsdijk (1989) and identified as problematic for his extraction theory of ST. Van Riemsdijk's solution was to devise a mechanism of 'regeneration' that adds morphological material to the extracted NP in order to render it compliant with X-bar-theoretic requirements. Such a mechanism is not only stipulative, it also fails to account for those mismatches that cannot be plausibly analyzed as 'repairs' (see below). In any case, X-bar rules as the source of 'regeneration' effects are plainly unavailable in a Merge-based framework that eschews phrase-structure grammar altogether, as further elaborated in section 4.

[5]I am simplifying here for expository reasons; for detailed accounts of the German strong/weak alternation see Roehrs 2006 and Schoorlemmer 2009, among others.

[6]Similar effects can be observed with numerals, some of which overtly realize dative case when stranded by ST but not within a continuous DP:

(i)   a. Er hat nur drei Zeugen   geglaubt.
          he has only three witnesses.DAT believed
      b. Zeugen   hat er nur dreien   geglaubt.
          witnesses.DAT has he only three.DAT believed

[7]See section 3.2 below on why article doubling only occurs with the indefinite article, not definite determiners.

REM. To illustrate, a relative clause regularly attaches 'outside of' a PP-modifier:

(14) a. keine Bücher von Maria, die   erfolgreich waren
          no   books   by Maria that successful were
      b. *keine Bücher, die erfolgreich waren, von Maria

However, an extraction analysis would be forced to posit the illicit order in (14b) to underly ST in the following:

(15) <u>Bücher</u>, <u>die</u> <u>erfolgreich</u> <u>waren</u>, kennt er <u>keine</u> <u>von</u> <u>Maria</u>.
      books   that successful were   knows he no   by   Maria

If TOP and REM are separate constituents, their structural independence is expected.

A further problem for the extraction theory is that TOP and REM can mismatch in number, with TOP plural and REM singular (but not vice versa, see section 4.4.1 below):

(16) <u>Zeitungen</u>   kenne ich nur <u>eine gute</u>.
      newspapers know I   only one good

Evidently, no permissible surface constituent could be composed of plural TOP and singular REM, an unexpected mismatch from the point of view of an extraction analysis. No problem arises on the alternative approach, adopted here, according to which TOP and REM are separate constituents.

Further evidence for this view is provided by PP-splits. When a PP is split by ST, the preposition must be realized in both TOP and REM (cf. Fanselow and Ćavar 2002):

(17) <u>In</u> <u>fremden</u>   <u>Betten</u> ist er schon   <u>in</u> <u>vielen</u> aufgewacht.
      in stranger's beds   is he already in many woken up

Note that (17) is doubly problematic for an extraction analysis: there is an additional preposition, and the split PP is an adjunct.[8] As before, the conclusion must be that TOP and REM are two separate constituents, REM being elliptic.

Before proceeding, I would like to briefly spell out what exactly the problem is for the extraction theory in (4), and what it is not. The problem is *not* that such a theory necessitates base-generation of 'quirky' underlying constituents, such as noun phrases with subconstituents bear differing in number specification. There is no reason to assume that syntax is constrained in such a way that it only generates constituents that correspond to acceptable surface forms. The problem, rather, is that the extraction theory leads us to expect that TOP could alternatively surface *in situ* (topicalization being generally optional), contrary to fact. As already indicated above, all counterparts to the examples in (11)–(17) with TOP *in situ* are unacceptable:

(18) a. *Sie hat keine   polnische   Gänse gekauft.
          she has no.STRONG geeseSTRONG bought
      b. *Ich habe nur eine ganz kleine eine Katze gesehen.
          I   have only a   very small a   cat   seen
      c. *Er kennt keine Bücher, die   erfolgreich waren, von Maria.
          he knows no   books   that successful were   by Maria
      d. *Ich kenne nur eine gute Zeitungen.
          I   knew only one good newspapers

---

[8]Even when a split PP is an argument, a van Riemsdijk-style extraction-*cum*-regeneration analysis faces the problem that PPs are generally islands for extraction (in German).

    e. *Er ist schon   in vielen in fremden   Betten aufgewacht.
        he is already in many in stranger's beds   woken up

If TOP moves to its left-peripheral surface position (as will be demonstrated in section 3), what forces this movement? Notice that we cannot simply resort to the claim that movement is obligatory to create rule-conforming surface constituents, as this reasoning is clearly circular. Rather, some independent reason must be found that necessitates the syntactic separation of the quirky base constituent's subparts.

2.3 Crosslinguistic properties

Before moving on, I would like to mention some crosslinguistic evidence for the conclusion drawn in the previous section. As documented at some length in Fanselow and Féry 2006, the morphosyntactic autonomy of TOP and REM in ST constructions is not an idiosyncratic quirk of German, but holds crosslinguistically. Let us briefly review some representative examples.

    As observed by Fanselow and Féry, it is crosslinguistically very common for REM to surface with nominalizing morphology, as in the following example:

(19)   a.   Pedro-e'   ts'o'k u   xokik   ya'bkach áanalte'o'b.
            Pedro-TOP term A.3 read.INCOMPL many   book.PL
      b.   <u>Áanalte'o'b</u>-e' Pedro-e'   ts'o'k u   xokik   <u>ya'bkachi'</u>.
            book.PL-TOP   Pedro-TOP term A.3 read.INCOMPL many.NMNLZ
            'Pedro read many books.'   (Yucatec Maya)

The difference between the continuous form and the ST construction indicates straightforwardly that the latter is not a simple extraction variant of the former.

    Fanselow and Féry further observe that it is common for TOP and REM to surface with case or number morphology that could not occur in the non-split form. Two examples are case-marking on REM in Hungarian and plural marking on TOP in Nogai, both highly reminiscent of the German facts discussed before:

(20)   a.   Láttam nagy bicikliket.
            I saw   big   bike.ACC
      b.   <u>Bicikliket</u> láttam <u>nagyokat</u>.
            bike.ACC I saw   big.ACC
            'I saw a big bike.'   (Hungarian)

(21)   a.   Köp   noRaj kitapdy ul aldy.
            many Nogai book.SG he bought
      b.   <u>NoRaj</u> <u>kitaplardy</u> ul <u>köp</u>   aldy.
            Nogai book.PL   he many bought
            'He bought many Nogai books.'   (Nogai)

Again, such facts are as expected when the structural autonomy of TOP and REM is acknowledged.

    Fanselow and Féry further show that various languages allow for article doubling and number mismatch in ST constructions, echoing the German facts in (13) and (16) above.

(22)   <u>Një</u> <u>makinë</u> nuk kam <u>një</u> <u>amerikane</u>.
        a   car   not has an American
        'He does not have an American car.'

(23)   Libra kam   lexuar vetëm një.
       books have I read   only   one
       'I have read only one book.'   (Albanian)

Finally, doubling of prepositions in PP-splits is an option (though not always obligatory) in other languages as well, as shown by the following examples:

(24)   a.   Va gradu   Tome   oš va nikakovom nij   stovano.
            in castle.LOC Thomas yet in no.LOC   has.NEG lived
            'Thomas has not lived in a castle yet.'   (dialectal Croatian)
       b.   Saxl-shi vcxovrob   lamaz-shi.
            house-in I am living nice-in
            'I am living in a nice house.'   (Georgian)

The facts presented so far strongly indicate that a subextraction analysis of ST is misguided, for German and beyond: ST relates two autonomous constituents. We will now turn to a further type of ST that corroborates this conclusion, before scrutinizing the movement properties of ST.

2.4 Gapless splits

I have argued in the preceding sections that the stranded REM in ST constructions is in fact a separate, elliptic noun phrase. Given the optionality of NP-ellipsis, we expect there to be non-elliptic counterparts. That such *gapless splits* exist is acknowledged in most works on ST (e.g., Fanselow and Ćavar 2002; Puig Waldmüller 2006; Nolda 2007; Ott 2011b), but most stop short of discussing them explicitly (the exceptions being Nolda 2007, Ott and Nicolae 2010, and Ott 2011b). Consider the following examples:[9]

(25)   a.   Französische Bücher habe ich noch nie   welche gelesen.
            French   books have I   so far never any   read
       b.   Seltene Raubvögel   hat Jürgen nur ein paar Bussarde gesehen.
            rare   birds of prey has Jürgen only a few   buzzards seen
       c.   Zeitungen   liest Maria nur die *junge Welt*.
            newspapers reads Maria only the *junge Welt*

In (25a), REM is an indefinite existential *wh*-pronoun; in (25b) and (25c), it is a full, overtly headed DP. (Notice that (25c) exhibits the number mismatch already encountered in (16) and (23).) There is, of course, no permissible surface constituent comprising TOP and REM for any of these cases, irrespective of their morphological properties:[10]

---

[9]Some speakers of German find gapless splits with non-pronominal REMs awkward, but this seems to be largely a reflection of stylistic preferences. Speakers that are hesitant to fully accept gapless splits typically still perceive relevant contrasts and degradations, e.g. island violations, illicit reversal of the order of the two noun phrases, etc.

[10]As demonstrated at length in Ott 2011b, a base structure in which TOP and REM are appositively related can be excluded (this option is considered but ultimately rejected in van Hoof 1997). In cases of genuine nominal apposition, neither member of the juxtaposed pair can be fronted to the exlusion of the other. Appositive noun phrases can be full DPs, hence an account based on apposition fails to capture the TOP–REM asymmetry described in section 3.2. Moreover, mismatches in number are ruled out in apposition but permissible in ST. Finally, even cases of ST that do not feature any mismatches often have no acceptable appositive counterparts (hashmarks indicate prosodic breaks):

(i)   a.   Französische Bücher hat Amina noch nie   welche gelesen.
            French   books has Amina yet   never any   read
       b.   *Amina hat noch nie französische Bücher # welche # gelesen.

(26)   a.   *Ich habe noch nie   welche französische Bücher gelesen.
             I   have so far never any   French   books   read

         b.   *Jürgen hat nur   ein paar Bussarde seltene Raubvögel   gesehen.
             Jürgen has only a   few   buzzards rare   birds of prey seen

         c.   *Maria liest   nur   die *junge Welt* Zeitungen.
             Maria reads only the *junge Welt* newspapers

Thus, gapless splits, like the antecedent–gap mismatches reviewed above, show rather unambiguously that TOP and REM are not parts of a discontinuous surface DP, but rather independent noun phrases. As we will see below, gapless splits and 'regular' splits share all central empirical properties, hence are variants of the same phenomenon;[11] typologically, too, gapless splits "may be considered a typical companion of discontinuous noun phrases involving a single lexical noun only" (Fanselow and Féry 2006, 66).[12] In case REM contains a gap the result accidentally resembles a discontinuous noun phrase, *modulo* the observed mismatches.

     Some examples of gapless splits from various languages are given below (all taken from Fanselow and Féry's 2006 survey):

(27)   a.   <u>Vogels</u> kent   hij alleen maar <u>nachtengalen</u>.
             birds   knows he only   but   nightingales
             'As for birds, he only knows nightingales.'   (Dutch)

         b.   <u>Lintuja</u> hän   tuntee vain <u>satakielen</u>.
             birds   (s)he knows only nightingale.SG
             'As for birds, he only knows nightingales.'   (Finnish)

         c.   <u>Satamashoebi</u>, icis   mxolod <u>lurji</u> <u>burtebI</u>.
             toy   knows only   blue ball
             'As for toys, he only knows blue balls.'   (Georgian)

         d.   <u>Pinngussanit</u> nalunngilai <u>tungujortut</u> <u>arsat</u>.
             toys   knows he   blue   balls
             'As for toys, he only knows blue balls.'   (Greenlandic)

         e.   <u>Madarat</u> csak <u>csalogányt</u>   láttot.
             bird   only nightingale saw
             'As for birds, he only saw a nightingale.'   (Hungarian)

         f.   <u>Bilar</u> köper han bara <u>Toyota</u>.
             cars   buys   he   only Toyota
             'As for cars, he only buys Toyotas.'   (Swedish)

While detailed crosslinguistic investigation is necessary to establish that such gapless splits are *bona fide* instances of ST, it is very likely that at least some of these superficially similar cases are amenable to the analysis developed in section 4 below. I will leave a demonstration of this to future work, focusing again on German in what follows.

     Since appositive DPs are presumably adjuncts, no requirement for asymmetry could enforce the syntactic separation of TOP and REM in such cases, given the asymmetry inherent to adjunction (cf. Chomsky's 2004 Pair-Merge).

[11] This is a serious problem for approaches that rely on the presence of an empty category in REM, such as Fanselow's (1988) and its extension in Roehrs 2009. In these approaches the empty category inside REM is $\overline{\text{A}}$-bound by TOP, establishing the semantic link between the two categories. Below we will see a different explanation for the interpretive relation between TOP and REM that does not rely on REM containing an empty category.

[12] Surprisingly, Fanselow and Féry, who survey ST phenomena in more than a hundred languages, nevertheless adhere to the traditional view of ST as creating discontinuous noun phrases; consequently, they are forced to conclude that gapless splits are an altogether different phenomenon. In light of the facts they discuss and the observed typological correlation, however, this view seems theoretically unjustified.

3 Core properties of ST

Having established the morphosyntactic autonomy of TOP and REM, I will now show that the two constituents are related by a movement dependency. The second part of this section focuses on an interpretive and structural asymmetry between the two noun phrases: while REM is a full DP, only bare, property-denoting (non-definite/non-quantified) NPs are possible TOPs.[13]

3.1 ST is movement

In light of the facts discussed in sections 2.2–2.4 it may be tempting to conclude (as Haider 1990 and Pafel 1996 do) that there is no transformational relation between TOP and REM at all, and that TOP is base-generated in its peripheral surface position. Fanselow and Féry (2006) consider base-generation of TOP in the left periphery the only viable analysis of gapless splits.

There are both conceptual and empirical reasons to dismiss this position as inadequate, however. Conceptually, the idea that TOP is base-generated in the left periphery clashes with the assumption that External Merge (EM) and Internal Merge (IM; movement) contribute to the duality of interpretation in distinct ways, EM feeding into thematic relations and IM into discourse-related 'surface' properties of an expression (Chomsky 2008, 2007). If this view is correct, TOP ought to be moved to the left periphery by IM, yielding its distinctive discursive role (to which we will return below). Moreover, if TOP were base-generated in the left periphery its thematic status would remain unclear (intuitively, it bears the same thematic role as REM).[14]

It is straightforward to establish that ST exhibits all hallmarks of $\overline{\text{A}}$-movement, as already concluded by van Riemsdijk (1989).[15] TOP can be displaced across finite-clause boundaries, i.e. ST is a (seemingly) unbounded dependency:

(28) a. <u>Bücher</u> glaubt Maria dass Peter schon <u>viele</u> <u>gute</u> gelesen hat.
          books   thinks Maria that Peter already many good read   has

      b. <u>Nagetiere</u> hat Peter behauptet dass Maria nur <u>Eichhörnchen</u> gesehen hätte.
          rodents   has Peter claimed   that Maria only squirrels   seen   had

At the same time, ST is sensitive to islands, i.e. TOP and REM may not straddle an island boundary. This is shown below for adjunct, relative-clause, and complex-NP islands:

(29) a. *<u>Bücher</u> war Peter traurig [nachdem seine Mutter <u>viele</u> weggeworfen hatte]
          books   was Peter sad   after   his   mother many thrown away had

      b. *<u>Neue</u> <u>Autos</u> kennt Peter [einen Typen [der bisher nur <u>Toyotas</u> gekauft hat]]
          new   cars   knows Peter a   guy   who so far only Toyotas bought has

      c. *<u>Bücher</u> kennt Peter [ein Gerücht [dass Chomsky <u>viele</u> geschrieben habe]]
          books   knows Peter a   rumor   that Chomsky many written   had

---

[13] It is sometimes claimed that ST in German has a distinctive information structure (TOP invariably being a contrastive topic and REM a focus) and concomitant prosody (rise–fall contour); this assumption feeds directly into the syntactic analysis of ST developed in Fanselow and Ćavar 2002. As observed by Puig Waldmüller (2006), Fanselow and Lenertová (2011), and Ott (2011b, chapter 2), however, the generalization is false: TOP and REM are *not* associated with fixed information-structural roles. As pointed out in the aforementioned works, this makes it unlikely that ST is "driven" by information-structural motivations (conceptual worries about syntactic topic/focus-related features aside). Unfortunately, I cannot elucidate the pragmatic properties of ST in any further detail here for reasons of space; see the aforementioned works for discussion.

[14] Taking TOP to be a non-θ-marked adverbial adjunct is not a tenable option, see footnote 30 and the discussion of Fanselow 1988 in Ott 2011b. See note 44 on the direct predicative relation between TOP and REM.

[15] Although not all standard diagnostics apply, owing to the fact that TOP may not be quantified (see below).

Another option is for TOP to be ($\overline{\text{A}}$-)scrambled to the left middle field (the 'medial topic position' discussed in Frey 2004a). Such scrambling is generally clause-bound,[16] and so is its split counterpart:

(30) a. weil   er <u>Bücher</u> bisher nur <u>wenige</u> gelesen hat.
          because he books so far only few   read   has
      b. *weil   er <u>Bücher</u> gesagt hat dass Maria bisher nur <u>wenige</u> gelesen hat.
          because he books said   has that Maria so far only few   read   has

Furthermore, TOP reconstructs into some vP-internal base position for interpretive purposes, as expected of an $\overline{\text{A}}$-moved element. Consider first the following facts indicating reconstruction for anaphor and variable binding:

(31) a. <u>Bücher</u> <u>über</u> <u>einander</u>$_i$ haben die Männer$_i$ noch nie   <u>welche</u> geschrieben.
          books about each other have the men   yet   never any   written
      b. <u>Nagetiere</u> <u>aus</u> <u>seinem</u>$_i$ <u>Heimatland</u>   kannte jedes Kind$_i$ nur <u>Eichhörnchen</u>.
          squirrels from his   home country knew   every child only squirrels
      c. <u>Bilder</u> <u>seiner</u>$_i$ <u>Kinder</u> hat ja jeder$_i$ <u>mehrere</u> im   Portemonnaie.
          pictures of his   children has PRT everyone several   in the wallet

Similarly, TOP's scopal properties are calculated based on its reconstructed base position. In the following example, the universally quantified subject scopes over the fronted TOP:[17]

---

[16]Although strong focal emphasis on the moved element can ameliorate such crossclausal scrambling, a complicating factor I abstract away from here.

[17]Based on facts like (32), Puig Waldmüller (2006) states that TOP is generally "scopeless," from which she concludes that it is abstractly (semantically) incorporated into the verbal predicate (along the lines of Chung and Ladusaw 2004). Setting aside the explanatory value of this implementation, its premise is empirically false. TOP usually takes narrow scope simply because it cannot be quantified, or its indefinite article be stressed to trigger a specific/referential reading (this constraint will be elaborated on in the following section). It is not scopeless, however: with proper intonation, a quantified NP embedded inside TOP can take wide scope over lower quantified expressions.

(i)   <u>Bücher</u> <u>mindestens</u> <u>eines</u> <u>Autors</u>   hat fast   jeder Schüler schon   <u>welche</u> gelesen.
       books   of at least   one   author.GEN has almost every student already some   read
       'As for books of at least one author, almost every student has read some.'

$$(\textit{at least 1} > \forall, \forall > \textit{at least 1})$$

Scopal properties of TOP are also problematic for Fanselow and Ćavar's (2002) PF-deletion theory of ST. On their analysis, splits arise only at PF, by means of a mechanism termed "distributed deletion" (partial deletion of phonetic material in each copy created by movement), as illustrated below in simplified form:

(ii)   a. <u>Französische</u> <u>Bücher</u> muss jeder Schüler <u>mehrere</u> lesen.
           French   books must every student several   read
       b. PF: [$_{DP}$ ~~mehrere~~ französische Bücher] muss jeder Schüler [$_{DP}$ mehrere ~~französische Bücher~~] lesen

Since splits on this analysis arise only in the mapping to PF, a central prediction is the LF-equivalence of split and non-split topicalization. This prediction is not borne out, however. A stranded REM cannot take wide scope, even though it covertly occupies the derived position according to Fanselow and Ćavar's analysis:

(iii) a. Mehrere französische Bücher muss jeder Schüler lesen.
           several French   books must every student read
           'Several French books, every student must read.'

$$(\forall > \textit{several}, \textit{several} > \forall)$$

       b. <u>Französische</u> <u>Bücher</u> muss jeder Schüler <u>mehrere</u> lesen.
           French   books must every student several   read

(32)   Ein Buch hat jeder Schüler nur ein kurzes gelesen.   ($\forall > \exists$, *$\exists > \forall$)
        a   book has every student only a   short   read

Importantly, notice that reconstruction can be detected independently of whether or not REM contains an overt gap, as shown by the gapless splits in (31a) and (31b). Such cases of connectivity in the absence of a 'visible' gap most transparently pinpoint the conundrum presented by ST: TOP shows connectedness with the interior of the clause, which however does not provide any obvious base position for it.[18]

     Finally, ST (gapless or not) licenses parasitic gaps, indicating the presence of an $\overline{\text{A}}$-dependency:

(33)   a.   ?Gäste hat Sonja [ohne   *pg* zu kennen] schon   viele begrüßt
            guests has Sonja without   to know   already many greeted
      b.   ?Gebrauchte Autos hat Peter [ohne   *pg* probegefahren zu haben] bisher nur
            used   cars   has Peter without   test driven   to have   so far only
            Toyotas gekauft
            Toyotas bought

    We conclude that TOP is moved to the left periphery from some vP-internal base position, in both regular and gapless splits. Moreover, we are forced to adopt the seemingly incoherent assumption that TOP and REM in fact occupy the *same* structural base position, given that both obligatorily surface with the same case. Notice how in this regard ST differs from hanging-topic constructions such as (35), where the topic DP surfaces with default nominative case, irrespective of any clause-internal case assignment:

(34)   Wetterberichten   traue ich keinen   mehr.
        weather forecasts.DAT trust I   none.DAT anymore

(35)   Wetterberichte,   ich traue keinen   mehr.
        weather forecasts.NOM I   trust none.DAT anymore

Hanging topics, unlike TOP in ST, show no connectivity to a lower base position in the matrix (Frey 2004b; Grewendorf 2008) and are thus plausibly analyzed as base-generated outside the clause. No such base-generation analysis is tenable for ST, in light of the locality and connectivity effects presented in this section.

3.2 A TOP–REM asymmetry

Having established the structural autonomy of TOP and REM as well as the presence of an $\overline{\text{A}}$-dependency in ST, let us now take a closer look at a peculiar constraint on ST that has not been made explicit so far. As originally noted by Fanselow (1988), there is a robust asymmetry between TOP and REM: the former, but not the latter, is always a bare, property-denoting NP. Thus, we find the following contrasts:

(36)   a.   Ein neues Auto kann ich mir leider   kein richtig schickes leisten.
            a   new   car   can I   me unfortunately no   really fancy   afford

---

         'As for French books, every student must read several.'

                                                 ($\forall > several$, *$several > \forall$)

    For further problems with the distributed-deletion approach, see Ott 2011b.

[18]A similarly paradoxical situation obtains in left-/right-dislocation constructions. The analysis proposed in section 4 does not apply to these cases, since dislocated XP and its clause-internal anchor are not predicatively related. I argue in Ott 2011a that dislocated XPs should be analyzed as remnants of an elliptical parallel clause.

b. *<u>Das</u> <u>Auto</u> kann ich mir nur <u>das</u> <u>neue</u> <u>von</u> <u>BMW</u> leisten.
   the car   can I   me only the new by BMW afford

(37) a. <u>Raubvögel</u>   hat er gestern   <u>drei</u> <u>Bussarde</u> gesehen.
         birds of prey has he yesterday three buzzards seen
      b. *<u>Drei</u> <u>Raubvögel</u>   hat er gestern   <u>Bussarde</u> gesehen.
         three birds of prey has he yesterday buzzards seen

Note that DPs like *das Auto* 'the car' and *drei Raubvögel* 'three birds of prey' freely undergo non-split topicalization, showing that the constraint is specific to ST.

If TOP is property-denoting, we expect it to exhibit no 'referential' qualities whatsoever. This prediction is borne out: only REM can be resumed by a pronoun in subsequent discourse. To demonstrate this, we need to consider cases in which TOP and REM mismatch in number; these allow for unambiguous identification of the pronoun's antecedent. The result is as expected:

(38) <u>Reptilien</u>$_k$ hatten sie   nur <u>eine</u> <u>Schlange</u>$_i$. {*Sie$_k$ waren / Sie$_i$ war} im   Terrarium.
      reptiles   had   they only a   snake   they were   it   was in the terrarium

Notice how (38) differs from non-split (39), showing that a non-referential interpretation of the topicalized *Reptilien* 'reptiles' is enforced only in ST:

(39) Reptilien$_i$ hatten sie. Sie$_i$ waren im   Terrarium.
      reptiles   had   they they were in the terrarium

Let us adopt, then, the following descriptive generalization:

(40) *TOP–REM Asymmetry*
      TOP is a property-denoting bare NP; REM is a full DP.

I will assume (with Borer 2005, Roehrs 2006, and Chomsky 2007, among others) that indefinite articles are not of category D, but NP-level elements; consequently, their optional occurrence in TOP is expected, given the general optionality of indefinite articles in predicative NPs in German:

(41) Vivek ist (ein) Literaturstudent.
      Vivek is   a   literature student

We are now in a position to combine the various pieces of the puzzle that is ST into a coherent whole, within the framework of a non-phrase-structural, Merge-based grammar.

4 Local instability

The discussion in the preceding section established that appearances are deceptive: ST does *not* derive discontinuous noun phrases; rather, it relates two autonomously generated noun-phrase consituents by movement—one of them a predicate, the other a term.

Two immediate questions arise: a) where does the TOP constituent originate?, and b) why does it necessarily surface *ex situ*? To provide an answer to these questions, I will first outline the fundamentals of a Merge-based grammar (as opposed to a traditional, phrase-structural model) before reappraising the empirical problem of ST from this perspective.

4.1 Merge, symmetry, and labels

In the traditional conception of grammatical architecture, base rules determine the form of phrase markers to which transformations apply.[19] The model in Chomsky 1965, for instance, assumed a categorial component comprising rewrite rules such as 'VP → V NP.' For familiar reasons of descriptive and explanatory adequacy, the categorial component was subsequently simplified: in X-bar Theory (Chomsky 1970; Jackendoff 1977), all rewrite rules follow the schema in (42).

(42)   a.   XP → ... $\overline{\text{X}}$ ...
       b. $\overline{\text{X}}$ → ... $\overline{\text{X}}$ ...
       c. $\overline{\text{X}}$ → ... X ...

Incorporating (42), rewrite rules express hierarchy ($[_{\text{XP}} \, [_{\overline{\text{X}}} \, \text{X} \,]]$), precedence (order of heads and complements/specifiers), and projection/headedness (X 'projects' $\overline{\text{X}}$/XP).

More recently, Chomsky (2004, 2008, 2007, 2011) has argued that phrase-structure grammar ought to be abandoned and replaced by the computationally primitive operation *Merge*, which combines two syntactic objects into a set. Applying recursively to both objects drawn from the lexicon and objects already constructed, Merge yields hierarchical structure and transformations.

(43)   Merge(X, Y) = {X, Y}
       a.   X, Y distinct: *External Merge, EM*
       b.   X, Y non-distinct: *Internal Merge, IM*

While recursive Merge implies hierarchy (embedding), its outputs are linearly unordered sets; Chomsky's assumption is that linear order arises only in the mapping to the phonetic interface. Assuming this to be correct,[20] this leaves us with the question of headedness. Plainly, sets are not endocentric: {V, DP} by itself is no more a VP than it is a DP (or anything else). However, Chomsky argues that this piece of information about a syntactic object should still be recoverable in some natural (non-stipulative) way from a given set produced by Merge:

> "If an element Z [...] enters into further computations, then some information about it is relevant to this option [...]. The optimal assumption is that this information is provided by a designated minimal element of Z [...], which is detectable by a simple algorithm; the *label* of Z [...]. The label [...] enters into EM in selection in various ways as well as into intepretation of Z."   (Chomsky 2007, 8f.)

As Chomsky (2011) points out, it does not follow that a label must be computed for *any* syntactic object formed by Merge;[21] an obvious case is root CP, which does not enter into further computations. While a clear understanding of when labeling is or is not required is still pending, I will here assume that a label must be detectable for any argument or adjunct position within vP, reflecting the intuitive idea that elements entering into *thematic relations* based on local syntactic composition should be unambiguously identified (cf. Chomsky's considerations quoted above; also Hornstein et al. 2005, 204). For the sake of explicitness, let us state this as follows:

(44)   *Labeling conjecture*
       Labels are required for thematic interpretation: for a syntactic object Z to be interpreted as an element of the thematic domain, Z must be labeled.

---

[19]See Lasnik 2000 and Carnie 2010 for historical overviews of the development of phrase structure.

[20]See Kayne 2010 for objections, and Zwart 2011 for an alternative, asymmetric definition of Merge.

[21]"The idea that every SO must be labeled when it is formed is a residue of X-bar theory and its stipulations, and falls away under the simpler theory of compositionality." (Chomsky 2011)

The term "element of the thematic domain" is intended to encompass vP-internal arguments and adjuncts, which enter into interpretation of the thematic (vP) phase at the C–I interface.[22] (44) in effect captures the fact that, within the domain of thematic interpretation, "there are local grammatical bounds on the influence words can lexically exert on one another" (Hornstein et al. 2005, 205), and may as such be ultimately rooted in computational efficiency.

Assuming, then, that the label of a syntactic object entering into thematic interpretation must be identified, the question is how this can be achieved in a principled and non-stipulative way. Chomsky's (2008) suggestion is that labeling can be conceived of as an instance of *Minimal Search*: the head of a set can be detected by inspecting the two Merge mates, while not probing their internal structure.[23] As stated in (45), if this Minimal Search procedure detects a lexical item (LI), this LI will be the designated label of the overall object:

(45)   *Labeling by Minimal Search* (adapted from Chomsky 2008)
        For any syntactic object $K = \{\alpha, \beta\}$, α is the label if α is an LI and β is an XP.

Thus, Merge(X, YP) yields {X, YP}, which is XP according to (45)—the correct result, in many cases. Note that (45) also derives the fact, traditionally stipulated in phrase-structure rules, that projection is local and hence not discontinuous, i.e. that for any syntactic object Z labeled by the lexical item L according to (45), there is no syntactic object Z′ immediately containing Z that is also labeled by L (cf. Collins and Stabler 2011, Definition 30).

As originally observed by Moro (2000) (elaborating on remarks in Chomsky 1995, 337), the interesting question is what happens when Merge produces an object for which (45) cannot detect a head, i.e. an object that contains either two LIs or two non-LIs. Let us set aside the former case here[24] and focus on the latter. Following the general spirit of Moro 2000 (but see note 31 below) and Chomsky 2011, I assume that whenever Merge combines two complex objects (non-LIs), the resulting configuration is *locally unstable*:

(46)   Merge(XP, YP) = {XP, YP} = ?

The set {XP, YP} cannot be identified as a constituent of some category X or Y, as it does not exhibit the structural asymmetry required by (45). Being unlabeled, {XP, YP} is unable to enter into local thematic relations.[25] Note that (44) is thus essentially tantamount to (part of) the traditional Theta Criterion (Chomsky 1981), stating that only a single XP (or, equivalently, the label thereof) can occur in any given argument/thematic-adjunct slot.[26]

What if {XP, YP} is merged into some thematic position, precluding unambiguous identification of this position? Following Moro and Chomsky, I assume that IM of either XP or YP can render

---

[22]Compare the notion of "broadly L-related position" in Chomsky 1993; see also note 25.

[23]See Adger 2011 for an alternative approach to labeling, in which labels are derived from a stipulated functional sequence. This approach raises various problems, including violations of Inclusiveness (despite Adger's claim to the contrary), a full discussion of which is beyond the scope of this paper.

[24]See Yang 1999, Moro 2000, and Barrie 2005 for some relevant discussion.

[25] As pointed out by an anonymous reviewer, this reasoning implies that selectional relations cannot be instantiated as feature checking upon Merge, as assumed e.g. in Adger 2003, and in particular that labeling cannot be contingent on selection (as in Collins and Stabler 2011). The view of selection I adopt here is that suggested in Chomsky 2004: Merge applies freely, and selectional relations are "read off" of vP when it is interpreted at the C–I interface (see also Boeckx 2010 for related discussion). As Chomsky points out, this conception of selection implies the generation of deviant structures, an unproblematic assumption (see also note 45).

[26]The second part of the Theta Criterion, i.e. the generalization that only a single θ-role is assigned to any given position, must then be attributed to principles of interpretation at the C–I interface. The requirement to label thematic positions thus in effect forces syntax to satisfy this interface condition by providing adequately labeled positions.

the originally symmetric object asymmetric, enabling detection of a label:

(47)   YP ... $\boxed{\{\text{XP}, \langle \text{YP} \rangle\}}$ = XP

To see why this is so, consider what it means for YP to undergo IM. While IM does not manipulate the original object {XP, YP}, it does yield a configuration in which YP occupies two positions; more specifically, moved YP is a set (chain) containing two occurrences, one within the original set {XP, YP}, and another one outside of it. This implies that after movement, discontinuous YP is no longer properly contained in the original set, since the latter now only contains one of YP's occurrences (but not YP as a whole).[27] This leaves XP (strictly speaking, its label X) as the only remaining object properly contained in the original set, which is consequently labeled by XP (X). Hence, where {XP, YP} requires a label, it must be asymmetrized by movement at subsequent stages of the derivation.[28]

4.2 Predication and symmetry-breaking movement

Returning now to the question mentioned above, *viz.* Where does TOP originate?, I suggest that it functions as a predicate of REM in underlying form. Structurally, this means that DP and NP are directly merged as argument and predicate, yielding the structure {DP, NP} (directly parallel to more familiar argument–predicate structures of this kind, in particular {DP, vP}):

(48)   DP NP

I suggest that structures of this type can be generated freely in any argument or adjunct position—the null hypothesis on the assumption that Merge generally applies freely (Chomsky 2004; Boeckx 2010). The only condition is that the structures generated are legible at the interfaces. At the C–I interface, (48) has the interpretation of a predication, i.e. NP expresses a property of the individuals denoted by DP (as will be illustrated below).[29] Note that unlike {DP, NP}, structures such as {DP, DP} or {DP, CP} have no coherent interpretation as argument or adjunct, and are consequently rejected at the interface when merged in a thematic position.

The TOP–REM asymmetry established in section 3.2 follows automatically from this proposal: TOP is non-definite and non-quantified simply because it is a predicate. The idea to deduce the TOP–REM asymmetry from TOP's status as a logical predicate is not new; in fact, it goes back to the earliest work on the topic, *viz.* Fanselow 1988. However, Fanselow did not assume the structure

---

[27]Notice that IM necessarily differs from repeated EM of an LI in this way, rendering objects in the workspace discontinuous. The net result is equivalent to a stipulation that traces 'don't count' for purposes of labeling, but follows, for the reasons given in the text, from the copy theory of movement assumed here.

[28]As partly explored by Chomsky (2011), this reasoning leads the expectation of symmetry-breaking movement in various domains. Chomsky suggests that some of the obligatory-VP-externalization effects described in Alexiadou and Anagnostopoulou 2001 might follow from symmetry-breaking movement, however German appears to be particularly problematic in this regard (cf. Wurmbrand 2006). He also suggests that successive-cyclic movement creates locally unstable {XP, YP} configurations in intermediate positions, forcing the moving element to raise further. Notice that a Merge-based framework free from stipulated 'projection' eliminates the notion of *specifier* altogether, requiring a rethinking of a vast array of familiar structures as either unstable, unlabeled, or as involving adjunction (see Lohndal 2012 for some discussion). An investigation of these important issues must be left to future research; a prerequisite to these investigations will be a sharpening of the currently unclear criteria for when labeling is required.

[29]I am assuming here the standard view of predicative noun phrases as containing an 'open position' (see Higginbotham 1987; Holmberg 1993), which is saturated by D when a DP is constructed from NP. In the cases discussed here, the same saturation takes place, but by DP, not D.

in (48) but took TOP to be an adverbial modifier of V, an assumption that neglects the second problem highlighted above: why does TOP necessarily surface *ex situ*?[30]

By contrast, the structure in (48) offers a straightforward and principled answer to this question. Given the reasoning of section 4.1, we expect (48) to be locally unstable: either DP or NP must leave {DP, NP} for its position to be labeled.[31] Note that {DP, NP} as a whole does receive an interpretation at the C–I interface (predication), and that each DP and NP is accessible for (long-distance) relations such as agreement (see section 4.3.1 below). However, for {DP, NP} to be integrated into thematic interpretation, it must be unambiguously identified by a label, necessitating displacement.

Assume for the moment that NP (the predicate) must move; we will return to the reason for this below. We now have a principled explanation for the fact that 'mismatching' cases of ST have no acceptable counterparts with TOP *in situ* (despite the fact that TOP reconstructs to that position, as shown in section 3.1).[32] Some relevant pairs are repeated below:

(49) a. <u>Polnische</u>   <u>Gänse</u> gekauft hat sie <u>keine</u>.
          Polish.STRONG geese bought has she none
      b. *Sie hat keine polinische Gänse gekauft.

(50) a. <u>Eine Katze</u> habe ich nur <u>eine ganz kleine</u> gesehen.
          a   cat   have I   only a   very small seen
      b. *Ich habe nur eine ganze kleine eine Katze gesehen.

(51) a. <u>Bücher, die erfolgreich waren</u>, kennt er <u>keine von Maria</u>.
          books   that successful were   knows he no   by Maria
      b. *Er kennt keine Bücher, die erfolgreich waren, von Maria.

(52) a. <u>Zeitungen</u>   kenne ich nur <u>eine gute</u>.
          newspapers know I   only one good
      b. *Ich kenne nur eine gute Zeitungen.

(53) a. <u>Französische</u> <u>Bücher</u> habe ich noch nie   <u>welche</u> gelesen.
          French   books have I   so far never any   read

---

[30] Fanselow's motivation for analyzing TOP as an underlying adverbial modifier was, of course, to provide a base position for it while avoiding a theta-theoretic conflict. While recognizing the structural autonomy of TOP and REM, this analysis predicts neither case agreement nor obligatory fronting of TOP: neither structural symmetry nor any other factor could force obligatory separation of an argument DP (REM) and an adverbial modifier (TOP). Furthermore, it is shown in Ott 2011b that TOP does not behave like an adjunct syntactically, in particular with regard to extraction from *wh*-islands.

[31] The net result is thus the same as in Moro's (2000) *Dynamic Antisymmetry* model, in which {XP, YP} structures must be asymmetrized for reasons of linearization. One problem with this reasoning is that it leaves open why symmetry-breaking movement cannot be delayed until PF; in light of the facts presented in 3.1 and elsewhere in this paper, ST must be genuinely narrow-syntactic movement, however. Note also that a linearization-based approach may be too strong once the X-bar-theoretic stipulation that heads project specifiers is dropped (as argued by Chomsky 2011): assuming that the entire tree must be linearized, this view implies that asymmetry must be established across the board. As pointed out above, however, this does not necessarily follow on the view adopted here, according to which movement-derived structures (which are invariably of the form {XP, YP}), such as root CP, may well be exocentric.

[32] It follows that non-mismatching cases with acceptable variants with TOP *in situ* such as (1) have an alternative base structure in which a single, labeled constituent comprises TOP and REM. This is to say that the constituent *drei gute Bücher* 'three good books,' which is split in (1), can be composed as either a regular DP (in which case it can surface 'as is'), or as a combination of the elliptical DP *drei gute e* and the predicate NP *Bücher*, in which case it must be asymmetrized by movement. Where mismatches (in the sense of section 2.2) occur, or if an island category is split (as shown in section 2.1), the source structure must be composed in the latter way ({DP, NP}), resulting in obligatory separation of DP and NP.

    b. *Ich habe noch nie welche französische Bücher gelesen.

(54)   a. <u>Seltene Raubvögel</u>   hat Jürgen nur <u>ein paar</u> Bussarde gesehen.
             rare   birds of prey has Jürgen only a few   buzzards seen
    b. *Jürgen hat nur ein paar Bussarde seltene Raubvögel gesehen.

The structure in (48) requires displacement of NP in order to be labeled. If a derivation fails to raise NP, no local sisterhood relation between DP and v/V is obtained, as reflected in the deviance of the b-examples in (49)–(54) above.[33]

Note that while movement of NP is required for purposes of labeling, there is no requirement for this movement to target specifically the CP edge. Alternatively, TOP can be scrambled into the left middle field, as mentioned in section 3.1:

(55)   a. weil   er <u>Bücher</u> bisher nur <u>wenige</u> gelesen hat.
             because he books so far only few   read   has
    b. dass er <u>seltene Raubvögel</u>   bisher nur <u>ein paar</u> Bussarde gesehen hat.
             that he rare   birds of prey so far only a   few buzzards seen   has

We can take this kind of $\overline{\text{A}}$-scrambling to be adjunction to TP for present purposes (cf. Frey 2004a).

I will assume, with Chomsky (2000 *et seq.*), that derivations proceed in phases, corresponding to the domains of thematic structure (vP) and propositionality (CP), respectively. I will also assume that all operations take place at the phase level (Chomsky 2008, 2007). For our discussion here, this means that movement of NP and subsequent detection of labels takes place at the relevant phase level (vP or CP).[34] We can now state the general schema for the derivation of ST of subjects as follows (where NP = TOP and DP = REM, and $\alpha \in \{C, T\}$):

(56)   a. $[_{vP} \ldots [_? \text{ DP NP }] \ldots] \rightarrow$
         b. $[_{\alpha P} \text{ NP}_i \ldots [_{vP} \ldots [_{DP} \text{ DP } t_i] \ldots]]$

If locally unstable {DP, NP} is merged in internal-argument or VP-internal adjunct position, the derivation involves an additional, intermediate movement step through the vP edge:

(57) $[_{\alpha P} \text{ NP}_i \ldots [_{vP} t'_i [_{vP} \ldots [_{DP} \text{ DP } t_i] \ldots]]$

We can assume that C, T are the heads endowed with an edge feature (EF) licensing $\overline{\text{A}}$-movement to their edge, as per Chomsky 2008, 2007. Following Chomsky's logic, EF(T) ought to be derivative, 'inherited' from C. Scrambling to TP as in (55) is thus licensed by C's EF inherited by T, alongside

---

[33]Note that the analysis makes a prediction concerning the order of operations in cases like the following, where REM has scrambled:

(i)   <u>Schallplatten</u> hat Volker <u>viele</u> nicht.
     records   has Volker many not

                                  ($many >$ NEG, *NEG $> many$)

  First, NP must raise to the phase edge, allowing for the argument position to be labeled; then the remnant ($[_{DP}$ DP ⟨NP⟩]) scrambles. This order is required because simultaneous movement of both DP and NP to the phase edge would leave the original structure—properly containing neither DP nor NP—symmetric and hence unlabeled. While the conclusion follows necessarily on theory-internal grounds (and is compatible with the assumption that operations at the phase level can apply in any order, cf. Chomsky 2008), I do not see any way of testing it: since the scrambled remnant bears the label of DP, it behaves exactly as if DP had scrambled on its own.

[34]Asymmetrizing movement cannot apply immediately after construction of {DP, NP}, yielding {NP, {DP, NP}}, which still ends up label-less. It follows that movement must be anti-local in Abels's (2003) sense, applying at the phase level.

other uninterpretable features.

I have argued in this section that ST is the syntactic resolution of a conflict between form and meaning: to be predicated of DP, NP must locally merge to it; this configuration is unstable, however, and must be asymmetrized by movement, explaining the ban on *in situ* TOPs. This line of reasoning follows quite naturally once phrase-structural stipulations are dropped in favor of a Merge-based grammar, in which points of symmetry may require symmetry-breaking movement for endocentricity to arise.

4.3 Further consequences

In this section, I scrutinize some further consequences and corollaries of the analysis, in particular case-assignment to DP and NP, the obviation of CED effects in ST, and the derivation of PP-splits.

4.3.1 Case agremeent

Recall that one of the connectivity effects found in ST (thus setting it apart from hanging-topic constructions) is obligatory case agreement of TOP and REM, showing that both relate to the same case position. Since this conclusion is implemented by the present approach (where TOP and REM are generated as {DP, NP}), case agreement of TOP and REM is expected, assuming that *Multiple Agree* (Hiraiwa 2001) or some equivalent mechanism allows for simultaneous agreement of a φ-probe (v or C/T) with both DP and NP.[35] Schematically:

(58)

vP
  VP v
 NP DP V ·····[ACC]

(59)

TP
  vP T
 NP DP VP v ·····[NOM]
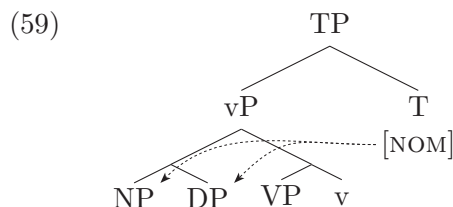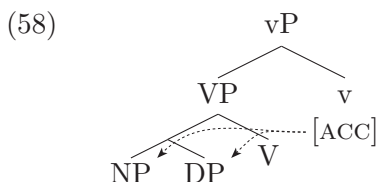
(60)   *Multiple Agree* (adapted from Hiraiwa 2001)
        Multiple Agree with a single probe is a single simultaneous syntactic operation; Agree applies to all matching goals at the same derivational point.

Note that Multiple Agree or some equivalent mechanism is independently required for case assignment to conjuncts in coordinate structures, hence no extra machinery must be invoked.

4.3.2 Circumvention of the CED

Recall from section 2.1 that ST is conspicuously insensitive to standard constraints on subextraction, applying indiscriminately to dative objects, adjuncts, and other opaque categories. The question, from the present perspective, is why the structure in (48) ({DP, NP}) allows for extraction of TOP irrespective of the position in which it is merged, whereas a DP in the same position can be a barrier for material it dominates.

I suggest that this question has a straightforward answer: {DP, NP} can never act as a barrier for the simple reason that it is not a labeled constituent at the point when extraction takes place (recall that it can only be labeled *after* being asymmetrized by movement). Let us assume the

---

[35]I leave open here the unresolved issue of how case is assigned to adjuncts. Note, however, that on the present approach TOP and REM always originate in the same structural position, which presumably predicts case agreement irrespectively of which theory of case-assignment to adjuncts will ultimately be found to be correct.

simple descriptive statement in (61), setting aside the deeper question of what exactly it is that accounts for the barrierhood of certain consituents.[36]

(61)   In a syntactic object $[_{ZP} \ldots \text{XP} \ldots]$, ZP can be a barrier for extraction of XP.

Evidently, the unlabeled {DP, NP} structure argued here to underlie ST falls outside of the scope of (61): when symmetry-breaking movement takes place, there is no label (corresponding to 'ZP' in (61)) that could impose barrierhood. Therefore, {DP, NP} can be asymmetrized by movement regardless of the position in which it is generated.[37]

4.3.3 PP-splits

Prima facie, the fact that not only noun phrases, but also PPs can be split by ST might appear problematic for the present approach. The question, from the present perspective, is how the TOP–REM asymmetry stated in (40) comes to be observed even when the relevant noun phrases are (seemingly) embedded under prepositions. PP-splits, like all other splits, are constrained such that NP inside the fronted PP must be property-denoting:

(62)   a.   In schönen Schlössern habe ich schon   in vielen gewohnt.
              in nice   castles   have I   already in many lived
        b.   *In vielen Schlössern habe ich schon   in schönen gewohnt.
              in many castles   have I   already in nice   lived

If such splits were based on locally unstable {PP, PP} structures, no predicate–argument asymmetry would be expected. The solution, I propose, is to view PPs as extended noun phrases, not as genuinely distinct categories. One way of sharpening this intuition, building on the observation that "adpositions are by all accounts closely related to case markers" (Baker 2003, 304), would be to take functional prepositions introducing arguments and adjuncts to be the morphological manifestation of inherent case; in other words, a noun phrase extended by P is still a nominal category, much like VP remains verbal when extended by functional v. We can state this proposal as follows:

(63)   In an argument or adjunct PP, P is the morphological spell-out of inherent case, inserted in the phonological component.

Baker and Kramer (to appear) suggest an equivalent analysis for Amharic prepositions; a similar position is taken in Caha's (2009) theory of case (see also Blake 1994, section 1.2). Adopting (63), it is easy to see why PP-splits show the same TOP–REM asymmetry as other splits. Since the prepositions are not syntactically present but only inserted in the PF-mapping, the underlying predication structure is exactly the same as in NP–DP splits. The derivation of (62a) is illustrated below, where "[LOC]" represents a locative-case feature:

(64)   a. $[_{VP} [[_{DP_{[LOC]}} \text{viele } e] [_{NP_{[LOC]}} \text{schöne Schlösser }]] \text{ gewohnt }]$
        b. $[_{CP} [_{NP_{[LOC]}} \text{Schlösser }] \ldots [_{VP} [[_{DP_{[LOC]}} \text{viele } e] \langle \text{NP} \rangle] \text{ gewohnt }]]$

---

[36]See Müller 2011 for recent discussion and a general framework to capture effects described by (61).

[37]Absence of a label prior to extraction thus naturally derives Fanselow and Ćavar's generalization:

'A movement barrier Σ does not block the formation of a split XP if and only if Σ itself is the barrier to be split up.'   (Fanselow and Ćavar 2002)

It must be left to future research to determine whether the generalization that {XP, YP} generally allows for movement of either XP or YP is correct. For the core cases, it seems that it is: in {XP, vP} or embedded {XP, CP}, XP is always free to move (and may be required to do so).

     c.   PF: **in** schönen Schlössern ... **in** vielen

The original {DP, NP} structure is assigned inherent case by V,[38] in this case (a variety of) locative case (64a); (64b) is the post-movement structure. At PF (64c), both TOP and REM are spelled-out according to their featural specifications, *in* acting as the exponent of the case feature.

    This rather radical take on functional prepositions finds a natural place in the broader typological context (cf. Baker's assessment quoted above). It is well known that the meanings associated with prepositions in a language like German are expressed by means of inherent cases in other languages—e.g. the ten different cases used to express locational relations in Hungarian (Babby 1994); similarly, instrumental and comitative cases found in many languages correspond to German *mit*, etc. (Caha 2009, 35).[39]

    Preposition doubling thus reduces to (generally obligatory) case agreement between TOP and REM. Conversely, we predict that adverbial *post*positions should not show this behavior, and indeed doubling of postpositions is impossible in ST:

(65)   a. <u>Berge</u>   ist er schon <u>viele</u> hinauf geklettert.
              mountains is he already many up   climbed

        b. *<u>Berge</u>   hinauf ist er schon   <u>viele</u> hinauf geklettert.
              mountains up   is he already many up   climbed

Recall from section 2.2 that PP-splits extend to adjunct PPs; an example is repeated below:

(66)   <u>In</u> <u>fremden</u> <u>Betten</u> ist er schon   <u>in</u> <u>vielen</u> aufgewacht.
       in stranger's beds   is he already in many woken up
       'As for stranger's beds, he has woken up in many.'

I suggest that here, too, the doubled preposition is in fact a morphological manifestation of inherent case. A similar conclusion is reached by Bošković (2006), who notes that adverbial NPs in Serbo-Croatian can be licensed in two ways: either by specific prepositions or by inherent-case marking. "When [the prepositions] function as adjunct semantic role identifiers, they are [...] essentially interpretable inherent case markers" (Bošković 2006, 531), in line with (63).[40]

---

[38]I assume with Chomsky (2000) that inherent case is assigned by V, not v.

[39]Of course, even *within* German alternations between inherent case and prepositions are found:

(i)   a.   der Bruder von Muffin ≡ Muffins   Bruder
            the brother of Muffin   Muffin.GEN brother

        b.   Benni hat einen Brief an Caro geschickt. ≡ Benni hat Caro   einen Brief geschickt.
            Benni has a   letter to Caro sent   Benni has Caro.DAT a   letter sent

        c.   Benni hat für Caro einen Kuchen gebacken. ≡ Benni hat Caro   einen Kuchen gebacken.
            Peter has for Caro a   cake   baked   Benni has Caro.DAT a   cake   baked

[40]Assuming (63), it does not come as a surprise that adjunct-PP splits are generally acceptable with simple prepositions but much less so with complex ones. Witness the following pair:

(i)   a. ??<u>Mithilfe</u>   <u>eines Hammers</u> kann man so eine Wand nur <u>mithilfe</u>   <u>eines großen</u> einreißen.
           by means of a   hammer can one such a   wall only by means of a   big   demolish

        b. <u>Mit</u> <u>einem Hammer</u> kann man so   eine Wand nur <u>mit</u> <u>einem großen</u> einreißen.
           with a   hammer can one such a   wall only with a   big   demolish

  (ia) is distinctly worse than (ib) and has a strong flavor of redundancy, presumably reflecting the fact that complex prepositions are genuine nominal subordinators rather than case markers. A more complete account of these differences is left to future work.

Moreover, (63) explains straightforwardly why prepositions contrast with postpositions in not moving independently and not being deletable in gapping (both facts from Hartmann 2001, 148):

(67) a. *Über$_i$ geht Timo t_i den Fluss
          over   walks Timo   the river
      b. Hinauf$_i$ geht Timo die Rampe t_i
          up   walks Timo the ramp

(68) a. *Miriam geht über   die Straße und Timo ~~geht~~ ~~über~~   den Fluss
          Miriam walks across the street and Timo walks across the river
      b. Miriam geht   die Treppe hinauf und Timo ~~geht~~   die Rampe ~~hinauf~~
          Miriam walks the stairs   up   and Timo walks the ramp   up

German *wh*-copying provides additional evidence for (63). As is well-known from work of McDaniel (1989) and others, German allows *wh*-copying constructions with simple *wh*-phrases but not with complex ones:

(69) a. Wen$_i$ glaubt Lars wen$_i$ Patrick t_i gesehen hat?
          who thinks Lars who Patrick   seen   has
          'Who does Lars think that Patrick saw?'
      b. *Wessen Buch$_i$ glaubst du wessen Buch$_i$ Lars t_i liest?
          whose book think   you whose book Lars   reads
          'Whose book do you think that Lars reads?'

Assuming (63), we correctly predict simple *wh*-phrases embedded by prepositions to pattern with simple *wh*-phrases:

(70) ?Mit wem$_i$ glaubst du mit wem$_i$ Gary t_i spricht?
      with who think   you with who Gary   talks
      'Who do you think Gary is talking to?'

A further advantage of taking prepositions to be morphological realizations of inherent case is that it rationalizes otherwise puzzling instances of binding "out of" PPs, as in the following:

(71) Du solltest nicht mit jedem$_i$ über seine$_i$ Ansichten streiten.
      you should not   with everybody about his   views   argue
      'You shouldn't argue with everybody about his views.'   (Frey 1993, 106)

As indicated, the variable pronoun is locally bound by the universal quantifier, despite the latter's (apparent) embedding inside PP. If PPs are syntactically DPs and P is a surface-morphological reflex of inherent case, binding in (71) is expected.

In sum, the problem of PP-splits can be elegantly overcome by an analysis of (simple) prepositions as case markers, a solution that resonates with Baker's typological observation as well as German-internal considerations.

4.4 Movement and frame-setting

The theory advanced here provides a principled reason for the obligatory syntactic separation of TOP and REM in ST constructions, namely the inherent instability of the underlying predication relating them. So far, I have simply presupposed that it is NP, rather than DP, that moves. This does not follow, however, from the instability of the configuration: movement of *either* NP *or* DP

ought to resolve the problematic symmetry. Two questions arise at this point, then: a) what forces movement of NP in the case considered so far?, and b) is movement of DP ever detectable?

4.4.1 ST and topic–comment structure

Concerning the first question, I suggest that movement of NP is enforced by pragmatic considerations pertaining to topic–comment structure. To see this, let us first recapitulate the relevant facts. Movement of NP from {DP, NP} yields a standard ST configuration:

(72)　　a.　Nagetiere hat Peter nur zwei Eichhörnchen gesehen.
　　　　　　rodents   has Peter only two squirrels   seen
　　　　b.　Gute Zeitungen   kennt Fabian nur eine aus Berlin.
　　　　　　good newspapers knows Fabian only one from Berlin

By contrast, fronting of DP induces strong deviance:

(73)　　a.　*Zwei Eichhörnchen hat Peter nur Nagetiere gesehen.
　　　　　　two   squirrels   has Peter only rodents   seen
　　　　b.　*Eine aus Berlin kennt Fabian nur gute Zeitungen.
　　　　　　one   from Berlin knows Fabian only good newspapers

To see how the contrast between (72) and (73) follows from general pragmatic constraints, consider the role of the fronted NP in (72). As a fronted predicate, it acts as a *frame-setting* expression in the sense of Jacobs (2001):

(74)　　*Frame-setting*
　　　　In $(X\ Y)$, X is the *frame* for Y iff X specifies a domain of (possible) reality to which the proposition expressed by Y is restricted.　　　　　　　　　　(Jacobs 2001, 656)

That is, TOP ($= X$) introduces a conceptual frame relative to which the following proposition ($= Y$) is interpreted. In other words, by introducing the set of individuals of which this property holds, a fronted predicate restricts the interpretation of the following comment (see Jacobs 2001 for further discussion).[41] Note that this interpretive role of the fronted NP is independent of its information-structural role (contrastive topic, focus, or other; see footnote 13).

One way of making the frame-setting role of NP transparent is by comparing a case of ST like (72a), repeated in (75a), to its hanging-topic (*As for X. . .*) counterpart in (75b). We find that both cases are semantico-pragmatically equivalent, with an interpretation of the comment relative to the frame set by *Nagetiere* 'rodents.' Notice that the case in (75c), which lacks the frame-setter, is non-equivalent both pragmatically and truth-conditionally:

(75)　　a.　Nagetiere hat Peter nur zwei Eichhörnchen gesehen.
　　　　　　rodents   has Peter only two squirrels   seen
　　　　b.　$\equiv$ Was Nagetiere angeht, Peter hat nur zwei Eichhörnchen gesehen.
　　　　　　　as for rodents   Peter has only two squirrels   seen
　　　　c.　$\neq$ Peter hat nur zwei Eichhörnchen gesehen.
　　　　　　　Peter has only two squirrels   seen

---

[41]The same conclusion is reached and substantiated in Nolda (2007), where TOP is argued to be an 'integriertes Rahmenthema' (integrated frame topic).

While (75c) is true only in a situation where Peter saw two squirrels and nothing else, (75a) and (75b) are true in a situation where Peter saw other things as well, provided the only rodents he saw were two squirrels. The (non-)equivalence of these cases transparently follows from the presence or absence of the frame-setting predicate *Nagetiere*.

Turning now to (73a), repeated in (76a), we find that its hanging-topic counterpart in (76b) is equally deviant:

(76) a. *<u>Zwei</u> <u>Eichhörnchen</u> hat Peter nur <u>Nagetiere</u> gesehen.
          two   squirrels   has Peter only rodents   seen
      b. ≡ *Was zwei Eichhörnchen angeht, Peter hat nur Nagetiere gesehen.
          as for two squirrels   Peter has only rodents   seen

Intuitively, (76b) has no coherent topic–comment organization: the proposition *Peter saw two rodents* is not in any sense about the topic *zwei Eichhörnchen* 'two squirrels.' The same is true for (76a), which, while syntactically different, is pragmatically equivalent. Note that the hanging-topic construction in (76b) does not involve any movement; the topical XP is base-generated outside the clause (as brought out by the absence of connectivity; see Frey 2004b; Grewendorf 2008). The fact that it patterns with (76a) in acceptability shows that the unacceptability of the latter need not be accounted for by reference to any syntactic constraint restricting movement; rather, it is the pragmatic organization of the resulting sentence that accounts for the deviance of DP-movement from {DP, NP}. The necessary hypernym–hyponym order of TOP and REM in gapless splits like (75a) is thus a simple corollary of the fact that a comment is interpreted relative to an associated frame/topic (but not vice versa, as in (76a)).[42]

---

[42]Haugen (2009) makes a somewhat similar suggestion, appealing to the Gricean Maxim of Quantity as the source of the obligatory hypernym–hyponym (or genus–species) order of nominals in certain noun-incorporation contexts. He suggests that late-insertion of lexical material proceeds post-syntactically according to this pragmatic principle, yielding the genus–species pattern in the Hopi cases he discusses (in fact, a precursor to this idea can be found in van Riemsdijk 1989, who speculated in light of gapless splits that his regeneration mechanism might not be restricted to morphological adjustments but might affect "certain choices in lexical meaning" as well). Late-insertion of lexical material is not an innocent assumption, however. *Prima facie* at least, there is little conceptual plausibility to the idea that roots, whose occurrence is not contingent on grammatical context, compete for some position. As pointed out by Chomsky (2001, 11), if roots do not compete (as argued by Harley and Noyer 1998), their late-insertion at PF introduces undesirable redundancy into the grammar if it is to have any detectable effect.

Beyond these conceptual considerations, it is evident that TOP and REM in ST are very different from the incorporated bare roots that Haugen is concerned with. TOP and REM need are not required to stand in a strictly semantic hypernym–hyponym relation; pragmatically licensed inclusion based on world knowledge suffices (Gisbert Fanselow, p.c.) Moreover, TOP and REM in ST are autonomous with regard to their internal structure; this fact would necessitate an overly powerful late-insertion mechanism that replaces entire subconstituents. To illustrate, consider the following:

(i) a. ?<u>Gäste</u>   kenne ich hier nur <u>wen</u>   <u>mir Sonja halt schon</u> <u>vorgestellt</u> <u>hat</u>.
         guests.ACC know I   here only who.ACC me Sonja PRT already introduced has
     b. <u>Gefährliche</u> <u>Raubvögel</u>   hat Volker nur <u>ein paar</u> <u>Bussarde</u> gesehen.
         dangerous   birds of prey has Volker only a   few buzzards seen

Evidently, late-insertion of roots will not suffice to derive these cases. In (ia), TOP and REM have very different internal syntactic constitutions, TOP being a simple NP and REM a complex free relative. Likewise, in (ib) TOP and REM differ not only in their respective lexical head, but also in the modifiers accompanying it. Evidently, no plausible model of late-insertion could carry out such large-scale structural alternations.

Note, moreover, that TOP can contain elements dependent on reconstruction, such as bound reflexives and variable pronouns (recall the data in section 3.1). These elements must be syntactically represented in TOP's base position at the semantic interface to support binding under c-command, hence cannot be inserted post-syntactically at PF. Adopting Haugen's late-insertion analysis for the cases under consideration here, then, is

The role of frame-setting is particularly transparent in cases of ST in which TOP is elliptic:

(77) Rote *e* hat er nur Toyotas.
      red   has he only Toyotas

While puzzling out of the blue,[43] such examples are perfectly acceptable when the context is such that TOP can be interpreted as a frame-setter; e.g., when (77) is the response to a question like *What red cars does John own?*, assigning TOP the interpretation *red cars*.

  Similarly, the fact that number mismatches are possible only 'one way' (as in (72b)) follows from the pragmatic deviance of the inverse case:

(78) a. *<u>Eine</u> <u>gute</u> <u>Zeitung</u>   kennt Fabian <u>mehrere</u> <u>aus</u>   <u>Berlin</u>.
          a   good newspaper knows Fabian several   from Berlin
      b. *Was eine gute Zeitung angeht, Fabian kennt mehrere aus   Berlin.
          as for a good newspaper   Fabian knows several   from Berlin

As shown by (78b), singular TOP cannot act as a frame-setter for plural REM.

  This reasoning extends straightforwardly to cases of split scrambling; (55) is repeated below:

(79) a. weil   er <u>Bücher</u> bisher nur <u>wenige</u> gelesen hat.
          because he books so far only few   read   has
      b. dass er <u>seltene</u> <u>Raubvögel</u>   bisher nur <u>ein</u> <u>paar</u> <u>Bussarde</u> gesehen hat.
          that he rare   birds of prey so far only a   few   buzzards seen   has

Frey (2004a) argues convincingly that TP-level scrambling targets a "medial topic position," and hence scrambled TOP will act as a frame-setter for the following comment. Accordingly, permutation of NP and DP in (79) induces strong deviance, yielding no coherent topic–comment organization. We can thus assume that symmetry-breaking movement generally applies freely, constrained only indirectly by general pragmatic factors.[44]

---

  clearly not an option, even when conceptual qualms concerning late insertaion of roots are set aside.

[43] As pointed out by an anonymous reviewer, examples like (77) were judged unacceptable in van Riemsdijk 1989—a misleading judgment that neglected the role of context in ellipsis resolution.

[44] Given that TOP in ST constructions acts as a frame-setter, one might question the necessity of my assumption concerning its 'deep-semantic' role, i.e. its role as a logical predicate to DP/REM in underlying structure. Could it be that the TOP–REM asymmetry as described in section 3.2 is simply the result of the requirement that one noun phrase be a frame-setter for the other, and could frame-setting be the only relevant interpretive relation between TOP and REM (rather than predication)? It can be shown that such an alternative scenario is too weak, and that NP/TOP indeed enters into the interpretation of ST constructions in the dual way predicted by the present approach. To see this, consider the following example, adapted from Nolda (2007).

(i) a. *<u>Bergsteiger</u> kennt Lilli nur <u>Schauermärchen</u>.
         moutaineers knows Lilli only horror stories
     b. Was Bergsteiger angeht, Lilli kennt nur Schauermärchen.
         as for mountaineers   Lilli knows only horror stories

  Here, we have a mismatch in acceptability between the ST construction in (ia) and its free-topic counterpart in (ib). If the only requirement on ST constructions was that TOP be an appropriate frame-setter for the comment, the unacceptability of (ia) would be unexpected, given that (ib) shows that *Bergsteiger* 'mountaineers' properly establishes an interpretive frame for the comment involving *Schauermärchen* 'horror stories.' But once the deep-semantic role of TOP in ST constructions as proposed here is taken into account, the discrepancy follows: (ia) is deviant simply because it would require an underlying structure in which the property MOUNTAINEER is predicated of *horror stories*, which is clearly infelicitous. No such illicit predication is involved in the base-generated free-topic construction in (ib), where frame-setting is the only interpretive role of the topic.

4.4.2 Movement of DP

Based on a comparison with hanging-topic constructions, I argued above that symmetry-breaking movement is constrained by syntax-external factors. This makes the prediction that movement of DP (instead of NP) ought to be possible in principle, provided that subsequent operations yield a pragmatically appropriate output configuration. This prediction is borne out. Relevant evidence is provided by instances of ST in which TOP is contained in a fronted VP, as illustrated below:

(80)   [$_{VP}$ Bücher gelesen] hat Peter erst <u>drei</u> <u>gute</u>
         books   read   has Peter only three good

This VP-fronting variety of ST (a 'mixed split' in van Hoof's 2006 terminology) defies subextraction accounts of ST. If TOP and REM were subconstituents of a single DP, and excluding non-constituent movement, such an analysis would be forced to resort to two-step evacuation movement (first extracting NP, then raising [$_{DP}$ drei gute t]), clearly an *ad hoc* solution.

   By contrast, cases like (80) pose no challenge to the present analysis. Recall that symmetry-breaking movement applies at the phase level; IM applying freely, REM (DP) can raise to the edge of vP. If it were to move on, the result would be a pragmatically ill-formed output with an infelicitous topic–comment organization (as discussed above). If, however, VP is fronted after vP-level movement of DP, we derive the well-formed (80):

(81)   a.
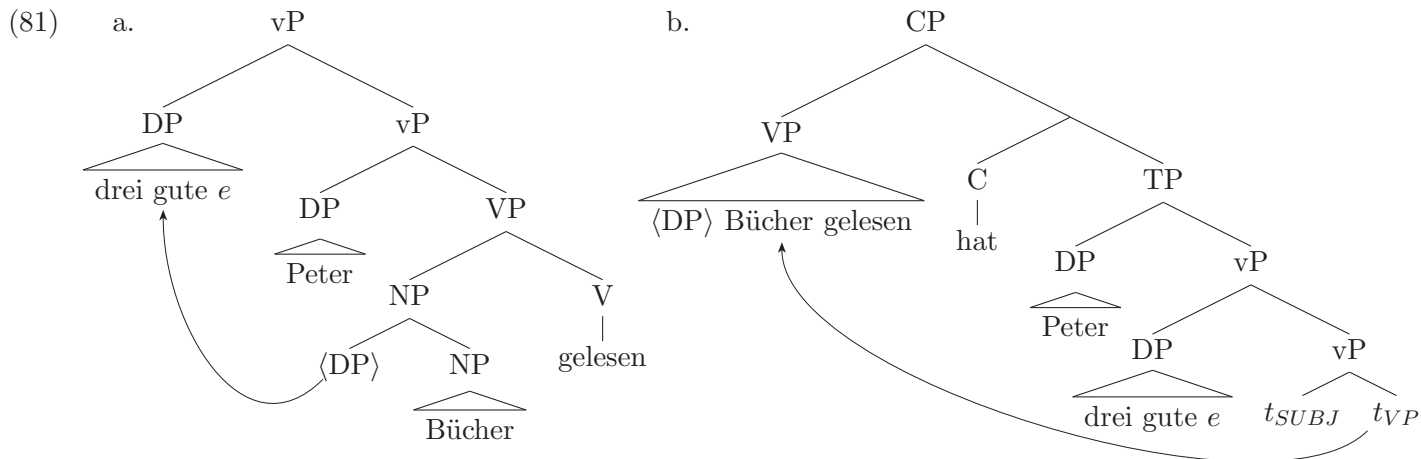
   The fact that the present analysis predicts this type of ST to exist lends strong support to my claim that symmetry-breaking movement applies freely. It just so happens that standardly only fronting of NP (*qua* frame-setter) brings about pragmatic well-formedness, however nothing in principle prevents movement of DP. Syntactically, the only requirement is that the local instability of {DP, NP} be resolved, to allow for labeling.[45]

---

[45] It thus follows that the present analysis 'overgenerates,', in that it allows for DP-fronting even when it yields a pragmatically deviant result—in my view, an unproblematic consequence. Criticism of 'overgeneration' is typically based on the assumptions a) that there is a ±grammatical distinction and b) that syntax should 'care about' (and be able to foresee) the eventual acceptability of an expression, a position that seems to me to largely stem from a misguided procedural interpretation of the notion of syntactic derivation. In any event, I see no reason to adopt either assumption, in agreement with Chomsky (2004) (see also Ott 2010 for some discussion).

5 Local instability in quantifier float

I have argued that split topics are derived from locally unstable {XP, YP} structures that must be asymmetrized by IM. The prime evidence for this conclusion came from the fact that many ST configurations, while showing clear signs of movement, offer no 'visible' base position for the fronted TOP. It turns out that similar arguments can be devised for symmetry-breaking movement in quanfitier-float (QF) constructions. In this section, I sketch an extension of the approach developed above to QF.

In German, the quantifiers *alle* 'all' and *beide* 'both,' and (with some qualifications that will not concern me here) *jeder* 'every' can be stranded by topicalization or scrambling, resulting in a surface pattern similar to ST (see Vater 1980, Merchant 1996, and Bobaljik 2003 for some general discussion of QF in German).[46] As before, I will refer to the two "parts" as TOP (fronted) and REM (stranded), highlighted by underlining:[47]

(82) a. weil   er <u>die Schüler</u>   gestern   {<u>alle</u>   / <u>beide</u>}   bestraft hat.
         because he the students.ACC yesterday all.ACC   both.ACC punished has

     b. <u>Den Kindern</u>   habe ich {<u>allen</u>   / <u>beiden</u>} geholfen.
        the children.DAT have I   all.DAT   both.DAT helped

     c. <u>Die Männer</u>   wurden <u>jeder</u>   mit einem Orden ausgezeichnet.
        the men.NOM were   every.NOM with a   medal awarded

While superficially similar, QF differs from ST in a number of ways (as observed in Vater 1980; Kniffka 1986; Pittner 1995). The most salient difference is that TOP in QF is definite, referring to a demarcated set of individuals. Consequently, it can be a possessive or pronominal DP:

(83) a. <u>Seine Kinder</u>   liebt Peter <u>beide</u> sehr.
        his   children loves Peter both much

     b. <u>Ihnen</u>   habe ich <u>allen</u>   geholfen.
        them.DAT have I   all.DAT helped

It is straightforward to establish that German-type QF involves an $\overline{\text{A}}$-dependency relating TOP to a VP-internal position. The following facts illustrate reconstruction of TOP for binding:

(84) a. <u>Die Artikel über</u> {<u>sich</u>$_i$ / <u>ihn</u>$_{*i}$} hat Jürgen$_i$ <u>alle</u> gelesen.
        the articles about himself   him   has Jürgen all read

---

[46]On crosslinguistic properties of QF, see Fitzpatrick 2006.

[47]When adjectives or postnominal modifiers are stranded along with the quantifier, TOP must be bare, indicating that we are now looking at instances of ST rather than QF (i); with TOPs that resist modification, such as the pronoun in (ii), only the bare QP can be stranded:

(i) a. (*<u>Die</u>) <u>Schüler</u> hat der Lehrer gestern   <u>alle</u> <u>guten</u> geprüft.
       the   students has the teacher yesterday all good   tested

    b. (*<u>Die</u>) <u>Kinder</u> hat Peter nur <u>die</u> <u>beiden</u> <u>ältesten</u> bestraft.
       the   children has Peter only the both   oldest   punished

(ii) <u>Ihnen</u> hat er <u>allen</u> (*<u>freundlichen</u>) geholfen.
      them has he all   friendly   helped

I take all cases in which more than a bare QP is stranded and TOP is predicative to be *bona fide* instances of ST, derived in the way proposed in section 4. Here I will only be concerned with genuine QF, identified by definite TOP.

b. <u>Seinen_i</u> <u>besten</u> <u>Studenten</u>   hat jeder Professor_i <u>beiden</u>   ein Buch geschenkt.
his   best   students.DAT has every professor both.DAT a   book given

c. weil   <u>die Kritiken</u>   <u>seiner_i</u> <u>Bücher</u>   ja jeder Autor_i <u>alle</u>   gelesen hat.
because the reviews.ACC of his books.GEN PRT every author all.ACC read   has

Since QF is sensitive to islands as well, we can safely dismiss a base-generation analysis.[48]

Prima facie, the simplest theory of QF derives TOP and REM by subextraction of DP from a larger constituent (essentially as proposed in Sportiche 1988, adapted to German in Merchant 1996). Importantly, however, it turns out that, like in the case of ST, such an analysis captures only a subset of QF constructions. First, constituents other than direct objects can be split by QF while being opaque for subextraction; see (82b) above, where a dative object is split by QF.[49] QF extends to adjuncts, such as free datives:

(85)   <u>Den</u> <u>Freunden</u> <u>von</u> <u>Benni</u>   hat Caro <u>beiden</u>   einen Kuchen gebacken.
the friends   of Benni.DAT has Caro both.DAT a   cake   baked

There is, then, some initial reason to doubt that QF is a case of subextraction. A decisive argument for this conclusion is that QF, like ST, tolerates antecedent–gap mismatches (cf. Pittner 1995; Nolda 2007). First, the morphological form of *alle* and *beide* varies depending on whether or not the quantifier is floated (recall the parallel facts from ST presented in section 2.2):

(86)   a.   Elisabeth hat die beiden   Kinder eingeladen.
Elisabeth has the both.WEAK children invited

           b.   <u>Die</u> <u>Kinder</u>   hat Elisabeth {<u>beide</u>   / *<u>beiden</u>}   eingeladen.
the children.ACC has Elisabeth both.STRONG   both.WEAK invited

(87)   a.   Gestern   habe ich {all' / allen} diesen Studenten   geschmeichelt.
yesterday have I   all   all.DAT these students.DAT flattered

           b.   <u>Diesen</u> <u>Studenten</u> habe ich gestern   {*<u>all'</u> / <u>allen</u>} geschmeichelt.
these students   have I yesterday all   all.DAT flattered
'Yesterday, I flattered all of these students.'   (Merchant 1996, 182)

As shown above, in the continuous form in (86a) *beide* bears weak adjectival inflection, whereas it assumes the form of a free-standing noun phrase when stranded (86b) (cf. *Ich habe beide gesehen* 'I have [them] both.ACC seen'). Similarly, while overt agreement of *alle* with its associate is optional in the continuous form (87a), it is obligatory when stranded (87b), again mirroring its free-standing occurrence (cf. *Ich habe all*(-e) gesehen* 'I have [them] all seen').[50]

Such effects suggest that TOP and REM in QF ought to be analyzed as autonomous constituents (a conclusion shared by Pittner 1995). The strongest support for such an analysis is furnished by cases in which no continuous base constituent is available, much like what we saw with gapless splits in section 2.4. Such cases do indeed exist and have led several researchers (e.g., Kniffka 1986

---

[48]A remaining puzzle, on which I have no insights to offer, is why long-distance QF in German is quite degraded, despite the Ā-character of QF in all other respects.

[49]It should be pointed out, however, that QF in other languages *does* obey constraints on subextraction, such as the islandhood of subjects (see Fitzpatrick 2006 and references therein). I have no account of these crosslinguistic differences to offer here.

[50]Merchant (1996), who assumes a Sportiche-style subextraction analysis of QF, accounts for this behavior by assuming that the associate moves through a specifier of Q (the quantifier), thereby triggering agreement. In the framework adopted here, the notion of specifier, and hence the notion of SPEC–head agreement, has no natural interpretation. Moreover, the examples below show that the agreement facts are but one manifestation of the morphosyntactic autonomy of TOP and REM in QF.

and Bhatt 1990) to reject a movement analysis of QF, an option I have shown to be untenable. The following examples illustrate antecedent–gap mismatches with QF:

(88) a. Cedrics Bücher kennt sie alle.
          Cedric's books knows she all
          (*alle Cedrics Bücher)
      b. Marcus, Carsten und Stefan kamen alle zu spät.
          Marcus Carsten and Stefan came   all too late
          (*alle Marcus, Carsten und Stefan)
      c. Den Kindern hat sie beiden geholfen.
          the children has she both   helped
          (*beiden den Kindern)
      d. Thomas, Bastian und Stephan haben jeder zu Weihnachten ein Fahrrad
          Thomas Bastian and Stephan have   every for Christmas   a   bike
          bekommen.
          gotten
          (*jeder Thomas, Bastian und Stephan)

As indicated, none of the above cases has an *in situ* counterpart (alternatively: movement of TOP is obligatory). The same is true when the floated quantifier is accompanied by a numeral:

(89) Die Bücher hat er alle vier gelesen.
      the books   has he all four read
      (*alle vier die Bücher)

  Relative-clause TOPs are a further interesting case, as observed by Pittner (1995):

(90) Die dort in der Schlange stehen haben alle keine Arbeit.
      those there in the line   stand have all no   work
      'All those who are standing in line there are unemployed.'

At first glance, there is no mismatch here, since *alle* can combine with restrictive relatives: *alle, die dort in der Schlange stehen* 'all those who are standing in line over there.' However, this cannot be the source of (90), since topicalization of a relative clause to the exclusion of its head is ruled out:

(91) a. [Den Mann, der sich   verdächtig benahm]$_i$ hat sie t_i heimlich beobachtet.
           the man   who REFL suspicious behaved   has she   secretly observed
      b. *[Der sich verdächtig benahm]$_i$ hat sie [den Mann t_i] heimlich beobachtet.

The conclusion must be that TOP in (90) is a free relative, and hence that TOP and REM are independent constituents. Similarly, *jeder* can be stranded by a free-relative associate, a constellation that cannot surface as such in continuous form:

(92) Wer da   in der Schlange steht   hat jeder keine Arbeit.
      who there in the line   stands has every no   work
      (*jeder wer da in der Schlange steht)

  Finally, floated *jeder* allows for mismatching number of DP and QP. Unlike *alle* and *beide*, *jeder* is syntactically singular; since it distributively quantifies over pluralities, its associate DP is necessarily plural (93a). As indicated in (93b), in the continuous form the entire DP is singular.

(93)   a. <u>Den</u>   <u>übergewichtigen</u> <u>Mitarbeitern</u> wurde <u>jedem</u>   eine Diät verschrieben.
           the.DAT overweight   employees.PL was   every.DAT a   diet administered
           (*jedem den übergewichtigen Mitarbeitern)

        b. Jedem   übergewichtigen Mitarbeiter wurde eine Diät verschrieben.
           every.DAT overweight   employee.SG was   a   diet administered

The conclusion we arrive at echoes that of section 2: a Sportiche/Merchant-style extraction analysis of QF derives only a subset of the possible cases; in order to explain the full range of facts, an alternative derivational option must be available.

Evidently, the analysis of section 4 cannot be applied verbatim to QF: since TOP is a definite DP, it cannot be a predicate in underlying structure. Instead, I suggest that the reverse pattern holds in cases of QF: TOP is the logical argument (DP) of the predicative quantifier (QP; note that the phrasal nature of floating quantifiers is "visible" in complex forms such as *fast alle* 'almost all,' *alle beide* 'all both,' etc.). I propose the following trivial base structure relating DP and QP:[51]

(94)   DP QP

This implements Pittner's (1995) intuition that floated quantifiers and their associates are predicatively related and appears to be compatible with the standard view of quantifiers in formal semantics as higher-order predicates (as in Larson and Segal 1995 and Heim and Kratzer 1998), although I will leave the semantic details of the proposal to future work.[52]

We can now apply the logic of section 4, according to which unstable structures like (94) require displacement in order to be labeled at the phase level. To illustrate, assuming that (94) merges in object position, its instability triggers raising to vP:

(95)   a.   VP   b.   vP

While (94) cannot be labeled by Minimal Search, the object position is labeled by QP after movement has applied: DP now being discontinuous, {DP, QP} is reduced to the asymmetric {⟨DP⟩, QP}, properly containing only QP. EF of C raises DP further; inheritance of EF by T yields the scrambling variety of QF, as in (84c).

As shown in section 4.3.1, such an approach correctly predicts DP and QP to agree in case: merging {DP, QP} in any position will lead higher probes to agree with both DP and QP via Multiple Agree (alternatively, oblique case is assigned to {DP, QP}). For the reasons given in section 4.3.2, {DP, QP} cannot act as a barrier for movement of either DP or QP, since it bears no label (recall (82b) and (85)). At the same time, any movement from {DP, QP} will necessarily

---

[51]The intuition that in terms of the argument/predicate status of the XPs involved QF is essentially the reverse of ST is also expressed by Zifonun et al. (1997, 1618).

[52]The analysis bears some loose resemblance to that developed in Miyagawa 1989, chapter 2, except that it obviates the need for ternary branching.
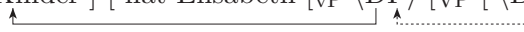
respect higher islands in which {DP, QP} is embedded.

To illustrate, consider (86b), repeated in (96) below. According to the present proposal, the quantifier and its associate DP merge directly; the result is the symmetric structure in (97a), which is broken at the vP-phase level, as shown in (97b).

(96) Die Kinder   hat Elisabeth beide   eingeladen.
      the children.ACC has Elisabeth both.ACC invited

(97) a.

→ merges with V

      b.
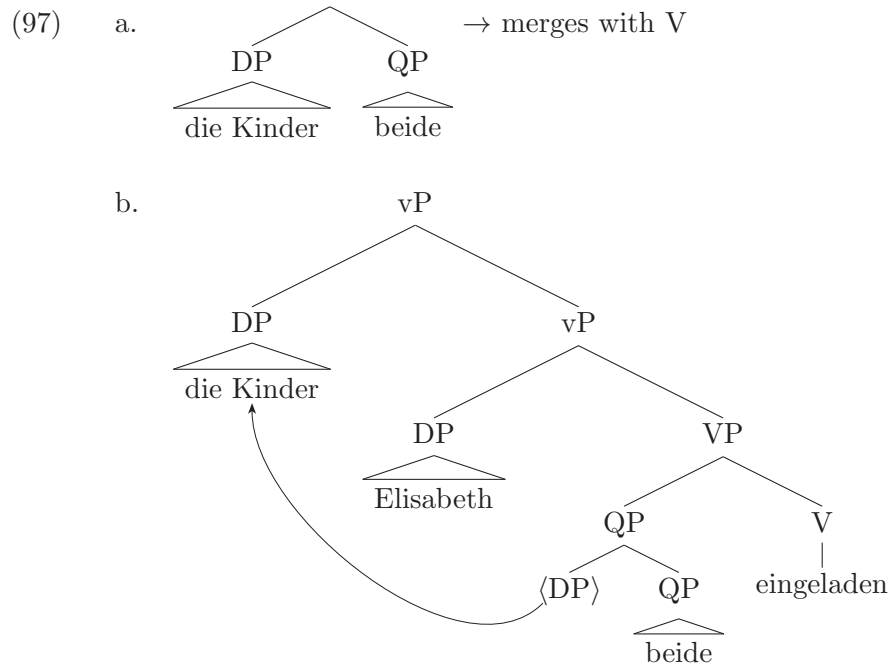
DP having raised to the phase edge, {⟨DP⟩, QP} is now labeled by the remaining QP, which enters into selection/θ-marking by V.[53] When C-T is merged, C's EF attracts DP to its edge, yielding the final order (irrelevant details omitted):
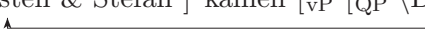
(98) [CP [DP die Kinder] [hat Elisabeth [vP ⟨DP⟩ [VP [⟨DP⟩ [QP beide]] eingeladen]]]]
                                                                                      (= (86b))

Since DP must move for the locally unstable {DP, QP} structure to be labeled, we correctly derive the otherwise puzzling fact that TOP must surface *ex situ*, documented above.

When QF applies to non-accusative arguments or adjuncts, the derivation proceeds in the exact same way, the only difference being the base position of {DP, QP}. The following is a sketch of the derivation of the subject split in (88b), where {DP, QP} originally merges in external-argument position and is asymmetrized at the CP-phase level:

(99) a. [vP [[DP Marcus, Carsten & Stefan] [QP alle]] [VP [vP kamen] zu spät]]
      b. [CP [DP Marcus, Carsten & Stefan] kamen [vP [QP ⟨DP⟩ [QP alle]] [VP t_V] zu spät]]

Ideally, symmetry-breaking movement in QF should apply blindly, in the same way it was argued in section 4.4.1 to apply blindly in ST—a conceptually desirable conclusion, as it obviates the need

---

[53]Note that, having combined with DP, QP is a saturated predicate. Consequently, selection of {DP, QP} at the C–I interface via the label QP targets an argumental category.

for narrow-syntactic constraints on QF, which would imply an enrichment of UG. Recall from that section that the parallel (un-)acceptability of ST constructions and their hanging-topic variants was taken to indicate that pragmatic constraints (basically, the requirement for a unidirectional aboutness relation between topic and comment, instantiated as frame-setting) regulate symmetry-breaking movement. The same parallelism is found with QF and hanging topics:

(100)   a.   <u>Die Kinder</u> hat Elisabeth <u>beide</u> eingeladen.
             the children has Elisabeth both invited

        b.   Was die Kinder angeht, Elisabeth hat beide eingeladen.
             as for the children   Elisabeth has both invited

(101)   a.   *<u>Beide</u> hat Elisabeth <u>die Kinder</u> eingeladen.
             both has Elisabeth the children invited

        b.   *Was beide angeht, Elisabeth hat die Kinder eingeladen.
             as for both   Elisabeth has the children invited

(102)   a.   <u>Marcus</u>, <u>Carsten</u> <u>und</u> <u>Stefan</u> kamen <u>alle</u> zu spät.
             Marcus Carsten and Stefan came   all too late

        b.   Was Marcus, Carsten und Stefan angeht, sie   kamen alle zu spät.
             as for Marcus, Carsten and Stefan,   they came   all too late

(103)   a.   *<u>Alle</u> kamen <u>Marcus</u>, <u>Carsten</u> und <u>Stefan</u> zu spät.
             all   came Marcus Carsten and Stefan too late

        b.   *Was alle angeht, Marcus Carsten und Stefan kamen zu spät.
             as for all   Marcus Carsten and Stefan came   too late

We can thus assume that movement of QP instead of DP is syntactically available while pragmatically deviant.

Recall from section 4.4.2 that movement of DP from {DP, NP} was shown to be detectable in mixed splits, where TOP is contained in a fronted (remnant) VP. The same is possible with QF:

(104)   a.   <u>Die Bücher</u> gelesen hat Joost <u>alle</u>.
             the books   read   has Joost all

        b.   <u>Den Kindern</u>   geholfen hat Sonja offenbar   <u>beiden</u>.
             the children.DAT helped   has Sonja apparently both.DAT

These cases follow straightforwardly on the assumption that symmetry-breaking movement from {DP, QP} applies freely, i.e. unconstrained by the syntax. QP raises to the phase edge, followed by movement of VP containing {DP, ⟨QP⟩} and the nonfinite verb:[54]

(105)   a.   [$_{vP}$ [$_{QP}$ beiden] ... [$_{VP}$ [$_{DP}$ [$_{DP}$ den Kindern] ⟨QP⟩] geholfen]]

        b.   [$_{CP}$ [$_{VP}$ [$_{DP}$ [$_{DP}$ den Kindern] ⟨QP⟩] geholfen] ... [$_{vP}$ [$_{QP}$ beiden] ... ⟨VP⟩]]
                                                                                        (= (104b))

---

[54]A continuation of (105a) in which QP raises to topic position yields a pragmatically unacceptable outcome, exactly
    as in the corresponding hanging-topic case:

(i)   a.   *<u>Beiden</u> hat Sonja offenbar   <u>den Kindern</u> geholfen.
             both   has Sonja apparently the children helped

        b.   *Was beide angeht, Sonja hat offenbar   den Kindern geholfen.
             as for both   Sonja has apparently the children helped

The existence of 'mixed QF' of this kind thus strongly corroborates the exclusive role of pragmatics in determining the (un-)acceptability of fronting of either member of the original set {DP, QP}. While standardly only DP-movement results in a pragmatically well-formed output, the same can be achieved by phase-level movement of QP and subsequent VP-fronting, showing that syntax indiscriminately asymmetrizes {DP, QP}.

While the discussion in this section has left open many important issues arising in connection with QF, I hope to have shown that an extension of the analysis developed in section 4 to this domain is, at the very least, a promising approach.

6 Conclusion

Split topics have been a long-standing puzzle, and in fact an embarassment, for syntactic theory. Here I have argued that this crosslinguistically widespread phenomenon, which indeed makes very little sense from the perspective of traditional phrase-structure grammar, receives a principled explanation when phrase-structural assumptions are dropped in favor of a Merge-based system with labeling. Specifically, I have argued—building on proposals by Moro (2000) and Chomsky (2011)—that such a system requires symmetric objects that enter into thematic interpretation to be asymmetrized at the phase level, as schematically summarized below:

(106)   *Phase level:*
         a. *{XP, YP}
         b. ✓YP ... {XP, ⟨YP⟩} → argument/adjunct slot identified by XP

The analysis of ST presented here espouses the general idea that grammar tolerates points of symmetry up to the phase level, where symmetry must be broken; Merge operates freely, constrained only indirectly by syntax-external factors. No teleology is implied, only failing derivations, i.e. grammar cannot be 'crash-proof' (cf. Chomsky 2004; Boeckx 2010).

This view of free and unrestricted application of Merge contradicts recent proposals by Kayne (2010), Zwart (2011), and Narita (2011), among others, ultimately rooted in Kayne's (1994) antisymmetric conception of base structures. According to these authors, the generation of {XP, YP} structures is barred altogether; however, this result is achieved by stipulation (or, in Zwart's case, by a radical redefinition of Merge).[55] Unless some principled reason is provided for intrinsic constraints on Merge, and hence for the corresponding enrichment of UG, such proposals should be met with skepticism. Needless to say, a definitive evaluation of the alternative view advocated here, while substantially bolstered by the broad empirical domain of ST, requires further research into other domains of structural symmetry in syntax (cf. note 28).

---

[55]In fact, it is hard to see how such a result could be obtained in any other way in a model that does away with D-structure as a level of representation.

References

Abels, Klaus. 2003. Successive cyclicity, anti-locality, and adposition stranding. Doctoral Dissertation, University of Connecticut.

Adger, David. 2003. *Core syntax: A minimalist approach*. Oxford: Oxford University Press.

Adger, David. 2011. Labels and structures. Ms., Queen Mary University London (`lingBuzz/001252`).

Alexiadou, Artemis, and Elena Anagnostopoulou. 2001. The subject-*in-situ* generalization and the role of case in driving computations. *Linguistic Inquiry* 32:193–231.

Babby, Leonard H. 1994. Case theory. In *Noam Chomsky: Critical assessments*, ed. Carlos P. Otero, 630–652. London: Routledge.

Baker, Mark, and Ruth Kramer. to appear. "Prepositions" as case morphemes inserted at PF in Amharic. In *Case at the Interfaces*, ed. Dany Jaspers.

Baker, Mark C. 2003. *Lexical categories: Verbs, nouns, and adjectives*. Cambridge: Cambridge University Press.

Barrie, Michael. 2005. On unifying Antisymmetry and Bare Phrase Structure. In *Proceedings of NELS 35*, ed. Leah Bateman and Cherlon Ussery, 103–114. Amherst, MA: GLSA.

Bhatt, Christa. 1990. *Die syntaktische Struktur der Nominalphrase im Deutschen*, volume 38 of *Studien zur deutschen Grammatik*. Tübingen: Gunter Narr.

Blake, Barry J. 1994. *Case*. Cambridge Textbooks in Linguistics. Cambridge: Cambridge University Press.

Bobaljik, Jonathan. 2003. Floating quantifiers: Handle with care. In *The second* Glot International *state-of-the-article book. The latest in linguistics*, ed. Lisa Cheng and Rint Sybesma, volume 61 of *Studies in Generative Grammar*, 107–148. Berlin: Mouton de Gruyter.

Boeckx, Cedric. 2010. Defeating lexicocentrism. Ms., ICREA/UAB (`lingBuzz/001130`).

Borer, Hagit. 2005. *In name only*, volume I of *Structuring sense*. Oxford: Oxford University Press.

Bošković, Željko. 2006. Case checking versus case assignment and the case of adverbial NPs. *Linguistic Inquiry* 37:522–533.

Caha, Pavel. 2009. The nanosyntax of Case. Doctoral Dissertation, University of Tromsø.

Carnie, Andrew. 2010. *Constituent structure*, volume 5 of *Oxford Surveys in Syntax and Morphology*. Oxford: Oxford University Press, 2nd edition.

Chomsky, Noam. 1965. *Aspects of the theory of syntax*. Cambridge, MA: MIT Press.

Chomsky, Noam. 1970. Remarks on nominalization. In *Readings in English transformational grammar*, ed. Roderick A. Jacobs and Peter S. Rosenbaum, 184–221. Waltham, MA: Ginn & Company.

Chomsky, Noam. 1981. *Lectures on government and binding: The Pisa lectures*. Dordrecht: Foris.

Chomsky, Noam. 1993. A minimalist program for linguistic theory. In *The view from Building 20: Essays in linguistics in honor of Silvain Bromberger*, ed. Kenneth Hale and Samuel Jay Keyser, volume 24 of *Current Studies in Linguistics*, 1–52. Cambridge, MA: MIT Press.

Chomsky, Noam. 1995. *The minimalist program*, volume 28 of *Current Studies in Linguistics*. Cambridge, MA: MIT Press.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step. Essays on minimalist syntax in honor of Howard Lasnik*, ed. Roger Martin, David Michaels, and Juan Uriagereka, 89–155. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language*, ed. Michael Kenstowicz, volume 36 of *Current Studies in Linguistics*, 1–52. Cambridge, MA: MIT Press.

Chomsky, Noam. 2004. Beyond explanatory adequacy. In *Structures and beyond*, ed. Adriana Belletti, volume 3 of *The cartography of syntactic structures*, 104–131. Oxford: Oxford University Press.

Chomsky, Noam. 2007. Approaching UG from below. In *Interfaces + recursion = language? Chomsky's Minimalism and the view from syntax–semantics*, ed. Uli Sauerland and Hans-Martin Gärtner, 1–29. Berlin/New York: Mouton de Gruyter.

Chomsky, Noam. 2008. On phases. In *Foundational issues in linguistic theory*, ed. Robert Freidin, Carlos P. Otero, and Maria-Luisa Zubizarreta, volume 45 of *Current Studies in Linguistics*, 133–166. Cambridge, MA: MIT Press.

Chomsky, Noam. 2011. Problems of projection. Ms., MIT (to appear in a special issue of *Lingua*, ed. Luigi Rizzi).

Chung, Sandra, and William A. Ladusaw. 2004. *Restriction and saturation*, volume 42 of *Linguistic Inquiry Monographs*. Cambridge, MA: MIT Press.

Collins, Chris, and Edward Stabler. 2011. A formalization of minimalist syntax. Ms., NYU and UCLA.

Fanselow, Gisbert. 1988. Aufspaltung von NPn und das Problem der 'freien' Wortstellung. *Linguistische Berichte* 114:91–113.

Fanselow, Gisbert, and Damir Ćavar. 2002. Distributed deletion. In *Theoretical approaches to universals*, ed. Artemis Alexiadou, volume 49 of *Linguistik Aktuell/Linguistics Today*, 65–107. Amsterdam: John Benjamins.

Fanselow, Gisbert, and Caroline Féry. 2006. Prosodic and morphosyntactic aspects of discontinuous noun phrases: A comparative perspective. Ms., University of Potsdam.

Fanselow, Gisbert, and Denisa Lenertová. 2011. Left peripheral focus: Mismatches between syntax and information structure. *Natural Language and Linguistic Theory* 29:169–209.

Fitzpatrick, Justin. 2006. The syntactic and semantic roots of floating quantification. Doctoral Dissertation, MIT.

Frey, Werner. 1993. *Syntaktische Bedingungen für die semantische Interpretation*, volume 35 of *Studia grammatica*. Berlin: Akademie Verlag.

Frey, Werner. 2004a. A medial topic position for German. *Linguistische Berichte* 198:153–190.

Frey, Werner. 2004b. Notes on the syntax and the pragmatics of German left-dislocation. In *The syntax and semantics of the left periphery*, ed. Horst Lohnstein and Susanne Trissler, volume 9 of *Interface Explorations*, 203–233. Berlin: Mouton de Gruyter.

Grewendorf, Günther. 2008. The left clausal periphery: Clitic left-dislocation in Italian and left-dislocation in German. In *Dislocated elements in discourse: Syntactic, semantic, and pragmatic perspectives*, ed. Benjamin Shaer, Philippa Cook, Werner Frey, and Claudia Maienborn, volume 12 of *Routledge Studies in Germanic Linguistics*, 49–94. London: Routledge.

Haegeman, Liliane. 1995. *The syntax of negation*, volume 75 of *Cambridge Studies in Linguistics*. Cambridge: Cambridge University Press.

Haider, Hubert. 1990. Topicalization and other puzzles of German syntax. In *Scrambling and barriers*, ed. Günther Grewendorf and Wolfgang Sternefeld, volume 5 of *Linguistik Aktuell/Linguistics Today*, 93–112. Amsterdam: John Benjamins.

Haider, Hubert. 1993. *Deutsche Syntax, generativ – Vorstudien zur Theorie einer projektiven Grammatik*. Tübingen: Gunter Narr.

Harley, Heidi, and Rolf Noyer. 1998. Licensing in the non-lexicalist lexicon: Nominalizations, vocabulary items and the Encyclopaedia. In *Papers from the UPenn/MIT Roundtable on Argument Structure and Aspect*, ed. Heidi Harley, volume 32 of *MIT Working Papers in Linguistics*, 119–137. Cambridge, MA: MITWPL.

Hartmann, Katharina. 2001. *Right-node raising and gapping. Interface conditions on prosodic deletion*. Amsterdam: John Benjamins.

Haugen, Jason D. 2009. Hyponymous objects and Late Insertion. *Lingua* 119:242–262.

Heim, Irene, and Angelika Kratzer. 1998. *Semantics in Generative Grammar*. Oxford: Blackwell.

Higginbotham, James. 1987. Indefiniteness and predication. In *The representation of (in-)definiteness: Papers from the fifth Groningen Roundtable*, ed. Eric Reuland and Alice ter Meulen, number 14 in Current Studies in Linguistics, 43–70. Cambridge, MA: MIT Press.

Hiraiwa, Ken. 2001. Multiple Agree and the Defective-intervention Constraint in Japanese. In *Proceedings of HUMIT 2000*, volume 40 of *MIT Working Papers in Linguistics*, 67–80.

Holmberg, Anders. 1993. On the structure of predicate NP. *Studia Linguistica* 47:126–138.

van Hoof, Hanneke. 1997. On split topicalization and ellipsis. *Working Papers of the Sonderforschungsbereich 340* 112, Universität Tübingen.

van Hoof, Hanneke. 2006. Split topicalization. In *The Blackwell companion to syntax*, ed. Martin Everaert and Henk van Riemsdijk, 408–462. Oxford: Blackwell.

Hornstein, Norbert, Jairo Nunes, and Kleanthes K. Grohmann. 2005. *Understanding minimalism*. Cambridge Textbooks in Linguistics. Cambridge: Cambridge University Press.

Jackendoff, Ray. 1977. $\overline{X}$-syntax. A study of phrase structure, volume 2 of *Linguistic Inquiry Monographs*. Cambridge, MA: MIT Press.

Jacobs, Joachim. 2001. The dimensions of topic–comment. *Linguistics* 39:641–681.

Kayne, Richard S. 1994. *The antisymmetry of syntax*, volume 25 of *Linguistic Inquiry Monographs*. Cambridge, MA: MIT Press.

Kayne, Richard S. 2010. Why are there no directionality parameters? In *Proceedings of WCCFL 28*, ed. Mary Byram Washburn, Katherine McKinney-Bock, Erika Varis, Ann Sawyer, and Barbara Tomaszewicz, 1–23. Somerville, MA: Cascadilla Proceedings Project.

Kniffka, Gabriele. 1986. Zur Distanzstellung von Quantoren und Qualifikatoren im Deutschen. In *Zur Syntax der Determinantien*, ed. Heinz Vater, volume 31 of *Studien zur deutschen Grammatik*, 57–82. Tübingen: Gunter Narr.

Kniffka, Gabriele. 1996. *NP-Aufspaltung im Deutschen*, volume 31 of *Kölner Linguistische Arbeiten Germanistik (KLAGE)*. Hürth: Gabel.

Larson, Richard, and Gabriel Segal. 1995. *Knowledge of meaning*. Cambridge, MA: MIT Press.

Lasnik, Howard. 2000. *Syntactic structures revisited. Contemporary lectures on classic transformational theory*, volume 33 of *Current Studies in Linguistics*. Cambridge, MA: MIT Press.

Lobeck, Anne. 1995. *Ellipsis: Functional heads, licensing, and identification*. Oxford: Oxford University Press.

Lohndal, Terje. 2012. Without specifiers: Phrase structure and events. Doctoral Dissertation, University of Maryland.

McDaniel, Dana. 1989. Partial and multiple *wh*-movement. *Natural Language and Linguistic Theory* 7:565–604.

Merchant, Jason. 1996. Object scrambling and quantifier float in German. In *Proceedings of NELS 26*, ed. Kiyomi Kusumoto, 179–193. Amherst, MA: GLSA.

Miyagawa, Shigeru. 1989. *Structure and case-marking in Japanese*, volume 22 of *Syntax and Semantics*. San Diego, CA: Academic Press.

Molnár, Valéria, and Susanne Winkler. 2010. Edges and gaps: Contrast at the interfaces. *Lingua* 120:1392–1415.

Moro, Andrea. 2000. *Dynamic antisymmetry*, volume 38 of *Linguistic Inquiry Monographs*. Cambridge, MA: MIT Press.

Müller, Gereon. 1995. *A-bar syntax: A study in movement types*, volume 42 of *Studies in Generative Grammar*. Berlin: Mouton de Gruyter.

Müller, Gereon. 2011. *Constraints on displacement: A phase-based approach*, volume 7 of *Language Faculty and Beyond*. Amsterdam: John Benjamins.

Narita, Hiroki. 2011. Phasing in full interpretation. Doctoral Dissertation, Harvard University.

Nolda, Andreas. 2007. *Die Thema-Integration. Syntax und Semantik der 'gespaltenen Topikalisierung' im Deutschen*, volume 72 of *Studien zur deutschen Grammatik*. Tübingen: Stauffenburg.

Ott, Dennis. 2010. Grammaticality, interfaces, and UG. In *Exploring crash-proof grammars*, ed. Michael T. Putnam, volume 3 of *Language Faculty and Beyond*, 89–104. Amsterdam: John Benjamins.

Ott, Dennis. 2011a. An ellipsis approach to Contrastive Left-dislocation. Ms., University of Groningen (`lingBuzz/001415`).

Ott, Dennis. 2011b. Local instability: The syntax of split topics. Doctoral Dissertation, Harvard University.

Ott, Dennis, and Andreea Nicolae. 2010. The syntax and semantics of Genus-species Splits in German. Ms., Harvard University (to appear in *Proceedings of CLS 46*).

Pafel, Jürgen. 1996. Kinds of extraction from noun phrases. In *On extraction and extraposition in German*, ed. Uli Lutz and Jürgen Pafel, volume 11 of *Linguistik Aktuell/Linguistics Today*, 145–177. Amsterdam: John Benjamins.

Pittner, Karin. 1995. Alles Extraktion oder was? Zur Distanzstellung von Quantoren im Deutschen. *Papiere zur Linguistik* 1:27–41.

Puig Waldmüller, Estela. 2006. *Wörter$_i$ stehen da einige$_i$*. On nominal split topicalization in nonstandard Viennese German. Master's thesis, Universitat Pompeu Fabra.

van Riemsdijk, Henk. 1989. Movement and regeneration. In *Dialect variation and the theory of grammar*, ed. Paola Benincà, 105–136. Dordrecht: Foris.

Roehrs, Dorian. 2006. The morphosyntax of the Germanic noun phrase: determiners *move* into the determiner phrase. Doctoral Dissertation, Indiana University.

Roehrs, Dorian. 2009. Split NPs. Ms., University of North Texas (`lingBuzz/000275`).

Schoorlemmer, Erik. 2009. Agreement, dominance and doubling: The morphosyntax of DP. Doctoral Dissertation, Universiteit Leiden.

Sportiche, Dominique. 1988. A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry* 19:425–449.

Tappe, Hans-Thilo. 1989. A note on split topicalization in German. In *Syntactic phrase-structure phenomena in noun phrases and sentences*, ed. Christa Bhatt, Elisabeth Löbel, and Claudia Maria Schmidt, volume 6 of *Linguistik Aktuell/Linguistics Today*, 159–179. Amsterdam: John Benjamins.

Vater, Heinz. 1980. Quantifier floating in German. In *The semantics of determiners*, ed. Johan van der Auwera, 232–249. London: Croom Helm.

Vogel, Ralf, and Markus Steinbach. 1998. The dative—an oblique Case. *Linguistische Berichte* 173:65–90.

Wurmbrand, Susi. 2006. Licensing case. *Journal of Germanic Linguistics* 18:175–236.

Yang, Charles D. 1999. Unordered Merge and its linearization. *Syntax* 2:38–64.

Zifonun, Gisela, Ludger Hoffmann, Bruno Strecker, Joachim Ballweg, Ursula Brauße, Eva Breindl, Ulrich Engel, Helmut Frosch, Ursula Hoberg, and Klaus Vorderwülbecke. 1997. *Grammatik der deutschen Sprache*, volume 7.2 of *Schriften des Instituts für deutsche Sprache*. Berlin/New York: de Gruyter.

Zwart, Jan-Wouter. 2011. Structure and order: Asymmetric Merge. In *The Oxford handbook of linguistic minimalism*, ed. Cedric Boeckx, Oxford Handbooks in Linguistics, 96–118. Oxford: Oxford University Press.