Determiner sharing in German by clausal ellipsis and split topicalization

Marie-Luise Schwarzer, Universität Leipzig

marie-luise.schwarzer@uni-leipzig.de

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In *determiner sharing*, a quantifier may be omitted from a coordination in the context of another ellipsis. This paper proposes a novel analysis on the basis of new German data: determiner sharing arises from the interaction of clausal ellipsis and split topicalization. I show that the apparent parasitism of determiner sharing can be derived without any further assumptions. The success of this analysis can serve as an argument for Move-and-Delete approaches to ellipsis.

Determiner sharing is the term given by McCawley (1993) to structures like (1) in which a determiner[1] or quantifier is omitted from a non-initial conjunct in a coordination. The omission of the quantifier creates the illusion that the interpretation of the overt quantifier in the initial conjunct is *shared* between two NPs. In this paper, I investigate novel data of determiner sharing in German, (2). In English as well as German, the construction is subject to inter-speaker variation and not productive for all speakers. Acceptability judgment experiments have shown that a subset of speakers of German do accept determiner sharing structures (see Schwarzer 2022).

(1)   Few dogs like Whiskas and __ cats __ Alpo.   (Johnson 2000a)

(2)   a.   Jede   Schülerin mag Katzen und __ Lehrerin __ Hunde.
            every student   likes cats   and   teacher   dogs
            "Every student likes cats and every teacher likes dogs."

       b.   Die meisten Frauen haben mit 'Ja' gestimmt und __ Männer __ mit 'Nein'.
            the most   women have with yes voted   and   men   with no
            "Most women voted 'yes' and most men voted 'no'."

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[1] I use *determiner* descriptively to refer to all modifiers that are elided in this construction, not just D^0 elements. Mostly, the shared elements will be quantifiers.

Not only the determiner, but also the verb has been deleted in (1), (2). This is the core puzzle of determiner sharing: omission of the determiner is dependent on another ellipsis, such as gapping (McCawley 1993; Johnson 2000a,b; Lin 2002; Ackema & Szendrői 2002; Arregi & Centeno 2005; Citko 2006). *Gapping* commonly refers to verbal ellipsis, (3). (4) shows that without gapping, when the verb surfaces in the second conjunct overtly, omission of the determiner is ungrammatical.

(3)   Jede   Schülerin mag Katzen und jede   Lehrerin ___ Hunde.
        every student   likes cats   and every teacher   dogs
        "Every student likes cats and every teacher likes dogs."

(4)   *Jede   Schülerin mag Katzen und ___ Lehrerin mag Hunde.
        every student   likes cats   and   teacher   likes dogs

Even though it seems that determiner sharing is parasitic on another type of ellipsis, I argue the syntactic architecture need not be fundamentally extended to include parasitic operations (in line with e.g, Johnson 2000a,b; Lin 2002; Arregi & Centeno 2005, contra proposals by Ackema & Szendrői 2002; Fitzgibbons 2014; Schwarzer 2021). The grammar of German already contains the building blocks, which can interact in a way that derives determiner sharing structures. Concretely, I propose that determiner sharing arises from the interaction of ellipsis, such as gapping, and split topicalization. *Split topicalization* refers to sentences such as (5), in which a noun is moved to the left periphery while its modifier is stranded in base position (e.g., Van Riemsdijk 1989; Fanselow & Ćavar 2002; Ott 2012).

(5)   [$_{CP}$ <u>Hunde</u> [$_C$ magst [$_{TP}$ [$_{vP}$ du   [$_{VP}$ <u>gar</u>   <u>keine</u>   *t*]]]]].
        dogs.ACC   like   you.NOM   at.all no.ACC
        "As for dogs, you don't like them at all."

    To preview the analysis, I argue that the structure that has been called determiner sharing arises when two independent processes occur at the same time in the same clause. These processes are clausal ellipsis, of which I argue gapping is a variety, and split topicalization. When split topicalization applies to a gapped structure, the bare noun is moved to a position outside of the ellipsis site created by gapping and the determiner or quantifier that is left *in situ* will be contained inside the ellipsis site and therefore deleted, see (6). This creates a structure in which a bare noun is the first overt phrase of the conjunct. I show that this combination of independent processes accounts for all of the properties of determiner sharing.

(6)   Jede   Schülerin mag Katzen und [$_{CP}$ Lehrerin$_i$ [$_{C'}$ Hunde$_j$ [$_C$ ~~mag~~ ... [$_{vP}$ ~~jede *t*$_i$ [$_{VP}$ *t*$_j$ *t*$_V$~~]]]]].
        every student   likes cats   and   teacher   dogs   likes   every

To the extent that this view of determiner sharing is empirically and conceptually well motivated, the proposed analysis can provide a new argument for the *Move-and-Delete* approach to ellipsis (Sailor & Thoms 2014, see also e.g., Pancheva 2010; Döring 2014; Weir 2014b; Shen 2018; Overfelt 2021). In the Move-and-Delete approach, all overtly realized phrases in an elliptical structure (the *remnants* of ellipsis) must undergo movement out of the ellipsis site. For instance, in gapping, the first remnant

must topicalize to the left periphery. In general, topicalization in German may optionally *split* NP and modifier. If topicalization is a core component of gapping, we would expect splits to be possible as well. I argue that this is exactly the structure that is described as determiner sharing. In this sense, determiner sharing is a borne out prediction of the Move-and-Delete approach to ellipsis. I aim to show that this approach makes the right predictions in a new empirical domain, and characteristics of sharing structures can be derived without any further assumptions.

To this end, the paper is structured as follows: Section 1 presents an overview of the empirical properties of German determiner sharing that any analysis must be able to derive. Section 2 is concerned with gapping, the exemplar environment in which sharing arises. I argue that gapping in German should be analyzed as clausal ellipsis, and that remnants show symptoms of movement. In section 3, I show similarities between split topicalization and determiner sharing. Section 4 develops the analysis, including a discussion of the ellipsis-Comp generalization and exceptional movement. Section 5 concludes.

1 Properties of German determiner sharing

This section provides an overview of the empirical properties of determiner sharing structures in German. They are characterized by three descriptive generalizations: (i) determiner sharing is dependent on another type of ellipsis, (ii) the noun with the omitted determiner must be initial in its conjunct, and (iii) the shared material need not form a constituent.

1.1 Parasitism on ellipsis

McCawley (1993) observes the most intriguing property of determiner sharing structures: ellipsis of the determiner seems to be possible only if the (finite) verb is omitted as well (see also Lin 2002; Centeno 2012). He describes this for English, but the same is true for German, compare (7-a) and (7-b), repeated from above.

(7)   a.   Jede   Schülerin   mag Katzen und ⎯ Lehrerin   ⎯ Hunde.
           every.F.NOM student.F.NOM likes cats   and   teacher.F.NOM   dogs
           "Every student likes cats and every teacher likes dogs."
      b.   *Jede   Schülerin   mag Katzen und ⎯ Lehrerin   mag Hunde.
           every.F.NOM student.F.NOM plays violin   and   teacher.F.NOM plays piano

The ungrammaticality of (7-b) indicates that, in general, ellipsis of a quantifier or determiner is not acceptable, even if there is an identical antecedent. Instead, gapping of the verb seems to be a necessary condition for determiner sharing.

While previous literature has described determiner sharing only in gapping contexts (Johnson 2000a; Lin 2002; Ackema & Szendrői 2002; Arregi & Centeno 2005; Citko 2006, but see Centeno 2012), I show that it can occur with other types of ellipsis, too. Concretely, determiner sharing can arise in stripping/bare argument ellipsis and fragment answer contexts in German. First, *stripping* refers to ellipsis in a coordination that leaves a single remnant and an additive or negative particle

(see e.g. Depiante 2000; Merchant 2004; Kolokonte 2008). (8) shows that stripping can give rise to determiner sharing in German.[2]

(8) a. Jede Schülerin mag Katzen, und jede Lehrerin auch.
         every student   likes cats   and every teacher   too   *stripping*

     b. Jede Schülerin mag Katzen, und __ Lehrerin auch.
         every student   likes cats   and   teacher too   *determiner sharing*
         "Every student likes cats and every teacher, too."

Second, fragment answers can license determiner sharing. Fragments are the remnants of clausal ellipsis in an answer-utterance (see e.g., Merchant 2004; Weir 2014a), as in (9).

(9) a. *What did you see?*
     b. [$_{DP}$ Einen Singvogel]   [$_{TP}$ ~~habe ich *t* gesehen~~]
            a.ACC songbird.ACC   have I   seen
         "A songbird."

Given a sufficiently parallel antecedent, determiner sharing seems to be possible across utterances, similarly to gapping, as in (10).

(10) a. Mag jede   Schülerin Hunde?
          likes every student   dogs
          "Does every student like dogs?"

      b. Nein, Lehrerin [$_{TP}$ ~~mag jede   *t* Hunde~~]
          no   teacher   likes every   dogs
          "No, every teacher likes dogs."

In sum, there seems to be nothing special about gapping such that only gapping can license determiner sharing. I revise McCawley's (1993) generalization: omission of a determiner is not dependent on gapping specifically, but on *another kind of ellipsis* in the same clause, (11).

(11) *The ellipsis generalization*
      Determiner sharing is only possible in ellipsis contexts.

Ackema & Szendrői (2002) discuss apparent counter-examples to the dependence on gapping. They find that in embedded CP-coordinations with *wh*-movement, the *wh*-phrase can be shared without the deletion of any verbal material. They made this observation for sharing in English, but German is completely parallel, (12).

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[2]M. Frazier, p.c., notes that stripping can also create determiner sharing in English, (i).

(i)   Every student likes cats and teacher, too.

(12)   a.   Wie viele Gemälde werden niemals gesehen und ___ Bücher (*werden) niemals
              how many paintings are   never   seen   and   books are   never
              gelesen?
              read

        b.   Ich frage   mich wie viele Gemälde niemals gesehen werden und ___ Bücher
              I   wonder REFL how many painting never   seen   are   and   books
              niemals gelesen (werden).
              never   read   are
              "(I wonder) how many paintings will never be seen and how many books will never be read."

                                                              (based on Ackema & Szendrői 2002:29)

(12-a) behaves as McCawley would predict: ellipsis of the *wh*-phrase is only possible if the auxiliary is
deleted as well. However, (12-b) allows *wh*-sharing in the embedded clause seemingly without ellipsis.
Ackema & Szendrői (2002) argue that there *is* ellipsis in cases like (12-b), only it is not verbal material
that is elided but the complementizer (an observation going back to at least Fiengo 1974, see also
section 2.3). In languages with a Doubly-Filled Comp Filter such as standard German and English
(e.g., Chomsky & Lasnik 1977; Koopman 2000; Van Gelderen 2013; Bacskai-Atkari 2020), they argue
that the complementizer is independently non-overt in the context of *wh*-movement. The relevant
contrast is visible in varieties that allow a doubly filled Comp: consider Bavarian German in (13).
(13-a) shows that overt complementizers generally can co-occur with *wh*-movement. In the sharing
construction in (13-b), an overt complementizer degrades the sentence.

(13)   a.   I frog   mi [wia vui Biacha dos   d-Maria   glesen hod] und [wia vui   Fuim
              I wonder REFL how many books COMP the-Maria read   has   and how many movies
              dos   d-Peter   gschaut hod].
              COMP the-Peter seen   has

        b.   *I frog   mi [wia vui Biacha dos   d-Maria   glesen hod] und [___ Fuim   dos
              I wonder REFL how many books COMP the-Maria read   has and   movies COMP
              d-Peter   gschaut hod].
              the-Peter seen   has
              "I wonder how many books Maria has read and how many movies Peter has seen."

                                                                                    Bavarian

Ackema & Szendrői (2002) argue that gapping targets C^0, which is filled by the finite verb in V2-
root clauses in Dutch and German, and by the complementizer in embedded clauses (see also e.g.,
Fiengo 1974; Wilder 1994, 1996; Hendriks 1995; Hartmann 2000), and thus sentences like (12-b) do
not constitute counter-examples to the ellipsis generalization.

1.2   Position of the bare noun

The second crucial property of determiner sharing is a restriction on the position of the nominal.
McCawley (1993) observes that the NP from which the determiner is omitted must be the first con-
stituent in the second conjunct. Again, McCawley (1993) found this for English, (14), but German
behaves exactly the same, (15).

(14)   a.   How many cathedrals are there in Hartford, or __ opera houses __ in Detroit?

   b.   *In Hartford, how many cathedrals are there, or in Detroit, __ opera houses __?

<div align="right">(McCawley 1993:247)</div>

(15)   a.   Jeder Kollege   hat Petra Pralinen   geschenkt und [__ Freund] [Blumen].
            every colleague has Petra chocolates given   and   friend flowers
            "Every colleague has given chocolates to Petra as a present and every friend has given her flowers."

   b.   ?*Pralinen   hat jeder Kollege   Petra geschenkt und [Blumen] [__ Freund].
        chocolates has every colleague Petra given   and flowers   friend

In (15-b) where the direct object of the second conjunct is fronted and occupies the initial position, sharing of the determiner *jeder* "every" in the subject of the second conjunct becomes impossible. It seems that as soon as another element occupies the initial position in the elliptical conjunct, determiner sharing is blocked. This is formalized as the generalization in (16).

(16)   *The first-element generalization*
       The element with the omitted determiner must be the first constituent of the elliptical conjunct.

1.3   Constituency of omitted material

Not only single quantifiers or determiners can be shared, but also complex prenominal modifiers or other material, e.g., attributive adjectives, in addition to the determiner, see (17). The elements that can be shared need not form a constituent without the head noun.

(17)   Viele kleine grüne Bälle liegen im   Haus und __ __ Eimer im   Garten.
       many small green balls lie   in.the house and   bucket in.the garden
       "Many small green balls are in the house and many small green buckets are in the garden."

(18)   *The non-constituent generalization*
       If more than a single determiner is shared, the deleted elements need not form a constituent.

   In sum, we arrive at the list of properties of determiner sharing structures in (19). A successful analysis must account for all of these properties.

(19)   *Determiner sharing generalizations*
   a.   The ellipsis generalization: determiner sharing is only possible in gapping contexts.
   b.   The first-element generalization: the element with the omitted determiner must be the first constituent of the conjunct.
   c.   The non-constituent generalization: if more than a single determiner is shared, the deleted elements need not form a constituent.

In the following sections, we will look at the two processes that create determiner sharing, ellipsis, using gapping as a concrete example, and split topicalization.

2 Gapping in German as clausal ellipsis

Even though gapping is described as ellipsis of the verb, there is evidence to suggest that what is elided in German is actually a clausal projection.[3] Previous analyses of determiner sharing have been designed for languages like English (e.g., Johnson 2000a,b; Lin 2002; Ackema & Szendrői 2002). As will be argued for below, German differs from English in the size of conjuncts involved in gapping. It has been argued extensively that in English, gapping conjuncts are quite small, approximately the size of vPs or VPs (see e.g., Chao 1988; Johnson 1996/2004, 2009; Coppock 2001; López & Winkler 2003; Toosarvandani 2013 *vs.* e.g., Frazier 2015; Potter et al. 2017). German gapping seems to involve bigger, clause-sized conjuncts (see e.g., Hartmann 2000; Reich 2007; Repp 2009; Konietzko & Winkler 2010; Gengel 2013 *vs.* e.g., Winkler 2005). If this view is on the right track, the analyses proposed for determiner sharing in English which rely on the small size of gapping conjuncts cannot account for determiner sharing in German (see also discussion of previous approaches in Schwarzer 2022).

The aim of this section is to establish three relevant points: first, gapping in German involves the coordination of clause-sized conjuncts. Evidence for such a *large-conjunct*-analysis comes from the lack of cross-conjunct binding, the word order of particles, and fronted objects. Second, I show that the remnants of gapping must move out of the ellipsis site with evidence from P-stranding, (non-)mobile particles, and case morphology (based on proposals such as Sag 1976; Pesetsky 1982; Jayaseelan 1990). Third, I argue, based on Hartmann (2000), that gapping should be analyzed as ellipsis of a clausal projection. Concretely, I assume that this projection is CP (but see section 4.2 for a discussion of alternatives, i.e., TP/C′-ellipsis).

2.1 Clausal conjuncts

2.1.1 Lack of cross-conjunct binding

The first piece of evidence for the clausal size of conjuncts in gapping comes from cross-conjunct binding. In English, in coordinations in which the verb is gapped, the subject in the first conjunct

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[3]It is sometimes claimed that gapping can apply in two "directions": in *forward* gapping, the finite verb is deleted in the non-initial conjunct (i-a), while in *backward* gapping, material is missing from the initial conjunct. Backward gapping is only possible in embedded verb-final clauses in German, (i-b).

(i) a. [Die Schülerin liebt Katzen] und [die Lehrerin ⎯ Hunde]
         the student loves cats and the teacher dogs
     b. Ich denke, [dass die Schülerin Katzen ⎯] und [die Lehrerin Hunde liebt]
         I think that the student cats and the teacher dogs loves
         "(I think that) the student loves cats and the teacher loves dogs."

I take the position that the backwards application is an illusion, and gapping can only ever apply forward, i.e., produce an ellipsis site in the non-initial conjunct. I follow a long tradition of research here in assuming that what sentences like (i-b) show is a case of Right Node Raising (RNR, e.g., Maling 1972; Hankamer 1979; Wesche 1995; Kornfilt 2000; Ha 2008; Hernández 2007; Ackema 2010). Therefore the rest of this paper only considers gapping sentences like (i-a).

can bind the subject in the second one, as in (20-a) (see e.g., McCawley 1993; Johnson 1996/2004; Kennedy 2001; Johnson 2009). This binding is not possible in non-gapping coordinations, (20-b).

(20) a. Not every girl$_1$ ate a green banana and her$_1$ mother ~~ate~~ a ripe one. (Johnson 1996:26)
      b. #Not every girl$_1$ ate a green banana and her$_1$ mother ate a ripe one.

German does not show this contrast, (21).

(21) a. #Jeder$_1$ Schüler freut   sich auf den Unterricht und seine$_1$ Lehrerin ~~freut sich~~
          every student looks.forward REFL to the class   and his   teacher
          auf die Ferien.
          to   the vacation
      b. #Jeder$_1$ Schüler freut   sich auf den Unterricht und seine$_1$ Lehrerin
          every student looks.forward REFL to the class   and his   teacher
          freut   sich auf die Ferien.
          looks.forward REFL to   the vacation

In English, cross-conjunct binding is an argument for small conjuncts in gapping: binding is only possible if the subject of the first conjunct is in a high enough position to c-command the subject of a non-initial conjunct. The proposed analysis in Johnson (1996/2004, 2009) is that the subject of the initial conjunct can move (asymmetrically) to a higher position, Spec,TP, while the second subject stays low in its first-merge position in Spec,vP. This entails that the coordination occurs below TP, i.e., the conjuncts are vPs, (22).

(22) [$_{TP}$ every$_i$ girl [[$_{vP}$ t ...] and [$_{vP}$ her$_i$ mother ...]]]

The lack of cross-conjunct binding in German gapping suggests that conjuncts must be large enough to contain the landing sites of the subjects in order to rule out c-command of one subject over the other. Since (21-a) shows a V2 structure, that landing site is the high left periphery, Spec,CP (the so-called *prefield*, Höhle 1986). Even there the first subject is not high enough to c-command the second one. This suggests that both subjects move only inside of their own conjunct, and consequently both conjuncts must be CPs, (23).

(23) [[$_{CP}$ *jeder$_i$ Schüler* ... [$_{vP}$ t ...]] *und* [$_{CP}$ *seine$_i$ Lehrerin* ... [$_{vP}$ t ...]]]

2.1.2 Word order of particles

The second piece of evidence comes from particle verb constructions. Particle verbs reveal that the second conjunct shows verb-second word order, which indicates that the conjunct is clause-sized. In the standard analysis of V2 word order as V-to-C movement (Den Besten 1977/1983; Schwartz & Vikner 1989; Fanselow 2004 among many others), the conjunct must contain at least enough left peripheral structure to host the landing position of the verb. Even though the finite verb is deleted in gapping, the V2 structure can be deduced from the position of the particle. First, observe that

particles can never occur in second position, (24). In V2 structures, they are split from their verbal host and occur in the verb's base position.

(24)   a.   Er (*um)-fährt   jeden   Radfahrer um.
            He PARTC-drives every.ACC biker.ACC PARTC
            "He runs over every biker."

       b.   Sie (*vor)-wirft   ihm seine Verfehlungen vor.
            she PARTC-throws him his   faults   PARTC
            "She reproaches him for his faults."

In this respect, particle verbs contrast with the superficially similar prefix verbs (e.g., Höhle 1982; Stiebels & Wunderlich 1994; Stiebels 1996, 1998; Zeller 2002). Prefix verbs must move to V2-position as a unit, as in (25). The particle cannot be split off.

(25)   a.   Er unter-wirft   sich dem Gegner   (*unter).
            He PARTC-throws REFL the   opponent PARTC
            "He surrenders to the opponent."

       b.   Er über-schätzt   seine Fähigkeiten (*über).
            he PARTC-estimate his   capabilities PARTC
            "He overestimates his capabilities."

Gapping of particle verbs creates a structure in which the finite verbal part is omitted and the particle can surface overtly. The relevant example is given in (26). As (24) suggests, the particle can only occur by itself if the verbal part of the predicate has undergone movement to C^0. We can assume that this movement also occurred in (26).

(26)   Sven und Julia können nicht gut Auto fahren. Er fährt   jeden   Baum   an   und [$_{CP}$
       Sven and Julia can   not   well car   drive   he drives every.ACC tree.ACC PARTC and she
       sie   f̶ä̶h̶r̶t̶   jede   Oma um].
       drives every.ACC grandma.ACC PARTC
       "Sven and Julia are terrible drivers. He bumps into every tree and she knocks over every grandma."

This suggests that the second conjunct must have an underlying V2 structure, which implies that it is at least big enough to host the position the verb moves to. In sum, overt particles in gapping indicate that conjuncts must be clausal.

2.1.3   Large conjuncts: evidence from object fronting

Hartmann (2000:158) introduces an argument from gapping in complement clauses. With gapping in embedded clauses, the complementizer must be obligatorily non-overt (see also Hendriks 1995; Lechner 2018). Gapping of the verb with an overt complementizer is ungrammatical, (27).

(27) a. *Ich glaube, [_CP_ dass Peter mit seiner Frau nach Indien reist] und [_CP_ dass Martin
          I   believe   that Peter with his   wife to   India travels and   that Martin
          mit seinen Kollegen   in die Schweiz   __].
          with his   colleagues in the Switzerland

      b. Ich glaube, [_CP_ dass Peter mit seiner Frau nach Indien reist] und [_CP_ __ Martin mit
          I   believe   that Peter with his   wife to   India travels and   Martin with
          seinen Kollegen   in die Schweiz   __].
          his   colleagues in the Switzerland
          "I think that Peter will travel to India with his wife and Martin will travel to Switzerland
          with his colleagues."   (Hartmann 2000:158)

In principle, (27-b) could receive an analysis like (28), in which TPs are coordinated under a single complementizer, i.e., there is no complementizer in the second conjunct that is subject to ellipsis.

(28)   I think [_CP_ that [_TP_ ...] and [_TP_ ...]]

However, Hartmann points out that embedded *wh*-clauses show that such an analysis is on the wrong track. In (29), the conjuncts are object clauses with a *wh*-element. Crucially, in the second conjunct in (29), it is impossible to omit the *wh*-word, i.e., an analysis like (30), analogous to (28), in which a *wh*-word moves across-the-board from two embedded TPs is ruled out. She concludes that examples like (29) suggest that the conjuncts must be CPs.

(29)   Ich verwechsle immer [was   Peter Ute   zum Geburtstag schenkt] und [*(was)
        I   confuse   always what.ACC P.NOM U.DAT to birthday   give   and   what.ACC
        sie   ihm   ~~zum Geburtstag schenkt~~]
        she.NOM him.DAT to   birthday   give
        "I always confuse what Peter will give Ute for her birthday and what she will give him for his
        birthday."   (modified, D. Büring p.c. to Hartmann 2000:158)

(30)   *I confuse [_CP_ what [_TP_ ... _t_ ...] and [_TP_ ... _t_ ...]]

In summary, I have presented three arguments in favor of the large size of gapping conjuncts in German. The evidence in this section suggests that gapping involves clausal coordination, and that smaller, *v*P-sized conjuncts are unavailable in German gapping. If this is correct, small conjunct analyses of determiner sharing cannot be applied to German, and a different analysis based on gapping with large conjuncts is needed.

2.2 Movement of the remnants

2.2.1 Clause-boundedness

This section aims to show that the remnants of gapping must undergo movement. A first piece of evidence for this comes from the clause-boundedness of gapping. Gapping respects (finite) clause

boundaries (e.g., Johnson 1996/2004; Lechner 2001; Grano & Lasnik 2018).[4]

(31) *Maria behauptet [dass Anne Äpfel   mag] und Julia Orangen ~~behauptet~~ [~~dass Anne *t* mag~~]
      Maria claims   that Anne apples likes and Julia oranges   claims   that Anne   likes

(31) shows that a remnant, *Orangen*, may not originate in an embedded finite clause. In this respect, the remnants behave just like other phrases that undergo clause-bound movement, such as scrambling, (32).

(32) *Maria hat behauptet dass Anne Äpfel   mag und Julia hat Orangen behauptet [dass Anne *t*
      Maria has claimed   that Anne apples likes and Julia has oranges claimed   that Anne
      mag].
      likes

Gapping and scrambling also behave parallel in non-finite embedded clauses in the context of restructuring. Restructuring environments, which are considered to lack a clause boundary (e.g., Evers 1975; Zagona 1982; Von Stechow & Sternefeld 1988; Rosengren 1992; Haider 1993; Wurmbrand 2001 and references therein) permit both gapping and scrambling, (33), while non-restructuring contexts block both, (34).

(33) a. Ich glaube dass Hans versucht hat den   Traktor zu reparieren und Anne das
          I   think that Hans tried   has the.ACC tractor to repair   and Anne the.ACC
          Motorrad ~~versucht hat *t* zu reparieren~~.
          motorbike tried   has to repair
          "I think that Hans tried to repair the tractor and Anne the motorbike."
      b. Ich glaube dass Anne das   Motorrad versucht hat *t* zu reparieren.
          I   think that Anne the.ACC motorbike tried   has to repair
          "I think that Anne tried to repair the motorbike."

(34) a. ?*Ich glaube dass Hans bedauert den   Traktor reparieren zu müssen und Anne das
          I   think that Hans regrets   the.ACC tractor repair   to must   and Anne the
          Motorrad ~~bedauert~~ [*t* ~~reparieren zu müssen~~].
          motorbike regrets   repair   to must
      b. *Ich glaube dass Anne das Motorrad bedauert [*t* reparieren zu müssen].
          I   think that Anne the motorbike regrets   repair   to must

I take these observations to indicate that the remnants of gapping undergo movement, specifically clause-bound movement. The sensitivity of gapping to clause boundaries suggests that a movement dependency is involved in the derivation of this ellipsis.

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[4]It has also been argued that gapping is constrained by island boundaries, e.g., Hankamer (1971); Neijt (1979); Pesetsky (1982); Coppock (2001). Vanden Wyngaerd (1993) and Johnson (1996/2004) argue that island constraints are not restrictive enough to account for the distribution of gapping, and that it rather seems to track the restrictions of long-distance scrambling, as illustrated in this section.

2.2.2 P-stranding

Merchant (2001, 2004) and Abels (2003) observe that languages that normally allow stranding of prepositions under movement also allow it under sluicing and in fragment answers. Swedish is such a language, (35).

(35)   a.   Vem har Peter talat   med *t*?
                who has Peter talked with
                "Who has Peter talked to?"

         b.   Peter har talat   med nåagon; jap vet   inte (med) vem.
                Peter has talked with someone I   know not with whom
                "Peter has talked to somebody, I don't know with whom."   *Swedish*, Merchant (2001:93)

German does not allow stranding of the preposition under *wh*-movement in (36-a), and instead has to obligatorily pied-pipe the preposition. It also does not allow P-stranding in sluicing (36-b), suggesting that sluicing involves the same type of movement.

(36)   a.   *Wem hast du gesprochen mit   *t*?
                who have you talked   with

         b.   Peter hat mit   jemandem geredet, ich weiß aber nicht *(mit) wem
                Peter has with someone   talked I   know but not   with whom
                "Peter has talked to somebody, but I don't know with whom."

Vanden Wyngaerd (2009) argues that preposition stranding in gapping is only possible if the language allows preposition stranding under movement. If gapping involves movement out of the ellipsis site, the prediction is that languages should show the same P-stranding behavior in gapping as in sluicing and fragment answers. In German gapping, this is borne out[5]. P-stranding is impossible (37), as expected if the remnants undergo movement prior to ellipsis.

(37)   Britta hat mit Abed geredet und Shirley *(mit) Jeff [~~hat *t*-*t* geredet~~].
          Britta has with Abed talked   and Shirley with Jeff has   talked
          "Britta has talked to Abed and Shirley has talked to Jeff."

Postpositions show different behaviors than prepositions. (38) shows that postpositions like *hinauf* "up" can be stranded. Fittingly, they also allow their DP complement to be a remnant in gapping without pied-piping, (39).

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[5]Erschler (2018) notes that in English gapping, P-stranding should be possible, but is not, as shown by e.g., Jayaseelan (1990); Lasnik & Saito (1991); Abe & Hoshi (1997), (i). Jayaseelan (1990) and Lasnik & Saito (1991) derive this by postulating rightward movement of the remnant DP. For all other analyses of English gapping, this puzzling observation remains an explanandum. However, there seems to be no consensus on the acceptability of preposition stranding in English gapping, as Steedman (1990), for instance, judges examples like (ii) perfectly acceptable.

(i)   *John talked about Bill, and Mary Susan.   (Abe & Hoshi 1997:102)

(ii)   Harry went to London, and Barry Detroit.   (Steedman 1990:248)

(38) Wo   geht Peter *t* hinauf?
      where goes Peter   up
      "What does Peter go up?"

(39) Martha geht die Treppe hinauf und Peter die Rampe [~~geht *t t* hinauf~~].
      Martha goes the stairs   up   and Peter the slope   goes   up
      "Martha goes up the stairs and Peter goes up the slope."   (Hartmann 2000:149, fn.5)

The fact that the possibility of preposition stranding shows exactly the same behavior in proper movement contexts and in ellipses like sluicing and gapping in German suggests that these contexts have something in common, namely XP-movement.

2.2.3 Particles

There are two types of particle verbs in German: transparent ones, whose meaning can be constructed from the meaning of the verb and the meaning of the particle, and idiomatic ones that do not show such a semantic compositionality. Wurmbrand (1999) shows that transparent particles such as *auf* in *auf-machen* "to open" can front in German, (40-a). Particles in idiomatic particle verbs, like the *auf* in *auf-führen* "to perform", cannot be fronted, (40-b). Wurmbrand argues that idiomatic particles are heads that combine with their verb directly, while transparent particles are heads of PPs and these PPs can move independently.

(40) a. Auf$_i$ hat er die Tür t_i gemacht.
          open has he the door   made
          "He opened the door."

      b. *Auf$_i$ haben sie das Stück t_i geführt.
          PARTC have   they the play   performed
          intended: *"They staged the play."*   (Wurmbrand 1999:8)

If only such elements that can undergo movement can be remnants of gapping, we would expect that only transparent particles can be remnants, while idiomatic ones cannot (see also Weir 2014a for a similar argument for fragment answers in English). This seems to be borne out. With transparent particle verbs such as *auf-machen* "to open" and *zu-machen* "to close", the verbal part can be gapped while the particle survives deletion, arguably because it can move out of the ellipsis site (41-a). As for idiomatic particle verbs such as *auf-hören* "to stop", the particle cannot be a remnant of gapping (41-b).

(41) a. Er hat die Tür zu   gemacht und sie auf   [~~hat *t* die Tür *t* gemacht~~].
          he has the door close made   and she open   has   the door made
          "He closed the door and she opened it."

      b. *Er hat ihr zu   gehört und mit dem Quatsch auf   [~~hat er *t t*-gehört~~].
          he has her PARTC listened and with the   nonsense PARTC has he   stopped
          intended: *"He listened to her and stopped with the nonsense."*

2.2.4 Syntactically conditioned case omission

The next argument concerns morphological case marking on nouns. German can show inflection markers on determiners, adjectives, and nouns, see (42-a). In some cases, nouns can occur without overt case markers, (42-b).

(42)   a.   ein Orchester ohne   eigen-en   Dirigent-en
            a   orchestra without proper-ACC conductor-ACC

        b.   ein Orchester ohne   Dirigent
            a   orchestra without conductor.ACC

Gallmann (1996) observes that the distribution of overt case markers on nouns seems to be syntactically conditioned. Nouns can only bear a case suffix if there is another overtly case-marked element (adjective or determiner) within the same DP in concord with the noun (Gallmann 1996, 1998, see also Müller 2002; Sternefeld 2004). This is illustrated for accusative *-en* in (42), and for dative *-e* in (43). Note that dative *-e* is generally optional and somewhat archaic in modern German. However, if it does appear, it can only do so in the context of another overtly case marked element, like *hart-em* in (43-c).

(43)   a.   ein Schiff aus   Holz
            a   ship   made.of wood.DAT

        b.   *ein Schiff aus   Holz-e
            a   ship   made.of wood-DAT

        c.   ein Schiff aus   hart-em Holz/   Holz-e
            a   ship   made.of hard-DAT wood.DAT/ wood-DAT   (Gallmann 1996)

Turning to determiner sharing structures, we can see that it is possible for the NP whose determiner is omitted to carry the overt case marker, such as *Kind-e* "child" in (44-a).

(44)   a.   Jedem   Lehrer   ist ein Hund   gefolgt und __ Kind-e   eine Katze.
            every-DAT teacher.DAT is a   dog.NOM followed and   child-DAT a   cat.NOM
            "Every teacher was followed by a dog and every child was followed by a cat."

        b.   Jedem   Jagdrevier fehlt ein Jäger   und __ Wald-e   ein Förster.
            every-DAT shoot.DAT lacks a   hunter.NOM and   forest-DAT a forester.NOM
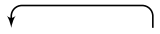   *"Every shoot lacks a hunter and every forest lacks a forester."*

This suggests that the dative-marked noun must have once been in concord with a determiner that can carry overt case marking. The determiner has been deleted after concord was established, and the noun can surface with dative *-e* because it has escaped deletion by moving away from its base position, out of the ellipsis site, leaving its determiner behind, (45).

(45)   ... und [$_{CP}$ Kind-e$_i$ [eine Katze ... [$_{VP}$ ~~jed-em t_i ...~~]]]
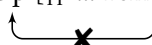   and   child-DAT a   cat   every-DAT

2.2.5 Types of embedding predicates

Lastly, I apply an argument made for fragment answers in Dutch by Temmerman (2013) to German gapping. Fragment answers in Dutch can be embedded, but only by propositional attitude verbs like *denken* "think", *geloven* "believe", or *vrezen* "fear" (Barbiers 2000, 2002). They cannot occur as the complement of factive verbs like *weten* "know" and *betreuren* "regret" or response stance verbs like *instemmen* "agree" or *betwijfelen* "doubt" (see e.g Cattell 1978). Temmerman (2013) argues that this falls out from a theory of fragment answers in which they have to move to the left periphery to escape ellipsis. In some analyses, factive verbs, but not propositional attitude verbs require a silent operator in their complement's left periphery (e.g., Manzini 1992; Watanabe 1993; Barbiers 2002). This operator blocks movement of a fragment to that position, (47). If fragment answers have to move, this explains why fragments cannot be embedded by factive verbs. For propositional attitude verbs, the left periphery of their conjunct is empty, and fragment answers can move there, (46).

(46)   [$_{v}$P think [$_{CP}$ remnant [$_{TP}$ ... t ...]]]

(47)   [$_{v}$P know [$_{CP}$ Op [$_{TP}$ ... remnant ...]]]

The same line of reasoning can be applied to gapping in German. The relevant examples are in (48). The remnants of gapping can occur in an embedded clause only under propositional attitude verbs (48-a), and not under factive verbs (48-b).

(48)   a.   Die Grünen   haben in Baden-Württemberg gewonnen und ich glaube/ fürchte/
                the green.party have   in Baden-Württemberg won   and I   believe fear
                denke [$_{CP}$ die CDU in Sachsen-Anhalt [...t...t...]].
                think   the CDU in Saxony-Anhalt

         b.   *Die Grünen   haben in Baden-Württemberg gewonnen und ich weiß/ bezweifle/
                the green.party have   in Baden-Württemberg won   and I   know doubt
                stimme zu [$_{CP}$ Op [die CDU in Sachsen-Anhalt]].
                agree   the CDU in Saxony-Anhalt
                *"The green party have won in Baden-Württemberg and I believe/ fear/ think/ *know/ *doubt/*
                agree the CDU have won in Saxony-Anhalt."

In this line of thinking, (48-b) is impossible because an operator blocks the Spec,CP position. The remnants could not escape ellipsis. If a factive operator occupies the landing position that a remnant would move to in gapping, it would fall out naturally that gapping remnants can be embedded only by such verbs that do not block the landing position with an operator. In a theory where remnants do not move to the left periphery, this contrast is unaccounted for.

In sum, this subsection presented five arguments in support of an obligatory movement dependency in clausal ellipsis, specifically gapping.

2.3 Clausal ellipsis

In this subsection, I present previous research that shows that (i) gapping in German targets a left-peripheral projection, and (ii) gapping deletes apparent non-constituents. I argue that the conceptually simplest way to marry these two facts is to assume that one single clausal phrase is deleted, and that overtly realized remnants of ellipsis move out of that phrase, i.e., I assume the Move-and-Delete approach (Sailor & Thoms 2014, see also e.g., Pancheva 2010; Döring 2014; Weir 2014b; Shen 2018; Overfelt 2021).

While gapping superficially looks like ellipsis of the verb, there is evidence that this ellipsis actually targets high left peripheral material in German. Based on proposals by Jacobs (1984); Klein (1998), who demonstrate that certain components of a finite verb can be dissociated from it, Hartmann (2000) proposes that this position is associated with the *assertion* of a sentence, and that the assertion can be spelled out either by a finite verb or by a complementizer (see also Wechsler 1990, 1991; Lohnstein 2000; Gärtner 2001, 2002; Bayer 2004; Brandner 2004; Meinunger 2004 for linking C/V2 with assertion). As evidence, Hartman (2000:158ff.) presents a prosodic argument.

In verum focus contexts, i.e., when the assertion of a sentence is in question (see also Jacobs 1984; Höhle 1988), prosodic prominence in the form of pitch accent (indicated by uppercase letters) falls either on the finite part of a verbal complex, (49), or on the complementizer, (50).

(49)   a.   Dodi HAT Diana geliebt.
            Dodo has   Diana loved

       b.   #Dodi   hat Diana geLIEBT.
            Dodi has Diana loved
            "Dodi has loved Diana."   (Hartmann 2000:159)

(50)   a.   Ich weiß DASS Dodi Diana geliebt hat.
            I   know that   Dodi Diana loved   has

       b.   #Ich weiß dass Dodi Diana geliebt HAT.
            I   know that Dodi Diana loved   has
            "I know that Dodi has loved Diana."   (Hartmann 2000:159f.)

In embedded clauses, verum focus can only be marked by pitch accent on the complementizer. Pitch accent on the finite verb in (50-b) is only felicitous in context in which the temporal part of the meaning is contrasted, Hartmann argues. Thus, the (finite) verb can only carry pitch accent associated with verum focus if it moves into the designated left peripheral position. If verb movement is blocked, the verb cannot be associated with assertion.

The pattern of association between assertion and the finite verb and the complementizer is completely parallel to the pattern we have observed in gapping: in root clauses, the finite verb is the element which (i) is associated with assertion, see (49), and (ii) is omitted in gapping. In embedded clauses, it is the complementizer that receives pitch accent in verum focus contexts and is deleted in gapping. Hartmann (2000) concludes that gapping is a type of ellipsis that deletes the structure asso-

ciated with assertion.[6,7] I base my analysis on Hartmann's argumentation and assume that gapping in German must delete a constituent that minimally contains C^0.

At the same time, gapping seemingly allows non-constituents to be deleted (see e.g., Ross 1970; Jackendoff 1971; Neijt 1979). This is illustrated in (51). Crucially, the deleted string does not need to form a syntactic constituent to the exclusion of the other material. The remnants of ellipsis, in contrast, do need to be constituents (e.g., Hankamer 1973; Sag 1976 and Hartmann 2000:147–152 for German specifically). That is to say, gapping does not delete arbitrary elements.

(51)   I want to try to begin to write a novel and

    a.   you ~~want~~ to try to begin to write a play.

    b.   you ~~want to try~~ to begin to write a play.

    c.   you ~~want to try to begin~~ to write a play.

    d.   you ~~want to try to begin to write~~ a play.   (Ross 1970:250)

The conceptually simplest way to account for both the obligatory deletion of C^0 and the seemingly random deletion of additional elements while ensuring the constituency of the remnants of gapping, is to pursue a Move-and-Delete approach (e.g. Sailor & Thoms 2014 and references therein). Concretely, I argue that gapping in German should be conceived of not as ellipsis of C^0, but as ellipsis of the minimal constituent that contains C^0, i.e., CP, out of which the remnants have to move. A Move-and-Delete approach is the only way to ensure that a syntactic process such as ellipsis only affects *constituents*. The advantage of this approach lies in its computational simplicity: only a single instance of ellipsis triggers the non-pronunciation of all deleted elements. To illustrate, let us consider an alternative in which every non-realized element is deleted *in situ*. In gapping, ellipsis of all optionally deleted elements depends on ellipsis of C^0 (e.g., Wilder 1994, 1996; Hartmann 2000). In (51), ellipsis of the lexical verb and embedded material is impossible without ellipsis of the finite modal. In this respect, gapping is similar to other apparent non-constituent ellipses (e.g., determiner

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[6]Let me stress that Hartmann (2000) does not argue for a Move-and-Delete approach, but views gapping as a rule that de-accents elements *in situ* under certain syntactic conditions.

[7]Repp (2009) argues that the unifying property of this clausal projection is not *assertion*, but rather the *anchoring* of a sentence in the discourse, i.e., the mapping onto the context of the utterance, specifically with respect to its reference and temporal or event-related relation (see also Roberts & Roussou 1998; Roussou 2001; Reis 2002; Maas 2004). She shows that complementizers such as *ob* 'whether' and *wenn* 'if', which do not introduce an assertion, but rather an indirect question, as in (i-a), or a conditional clause as in (i-b), have to be elided in gapping (or stripping in (i-a)). Additionally, gapping can occur in questions or imperatives, which are also non-assertive.

(i)   a.   Ich weiß nie ob   die Inder mehr Atomtests gemacht haben oder (*ob)   die Pakistani ___.
             I   know never whether the Indians more nuclear.tests done   have or   whether the Pakistani
             "I never know whether the Indians did more nuclear tests or the Pakistani."   (Hartmann 2000:161)
    b.   Helga wollte kommen wenn Frau Meyer den Kindergeburtstag   organisiert und (*wenn) Herr
             Helga wanted come   if   Mrs Meyer the children's.birthday.party organizes and if   Mr
             Schulz die Dinnerparty ___.
             Schulz the dinner.party
             "Helga wanted to come if Mrs Meyer organizes the children's birthday party and Mr Schulz the dinner party."   (Repp 2009:212)

Whether it is assertion or anchoring that connects finite verbs and the C-domain is not directly relevant to the analysis of determiner sharing.

sharing, NCE in Sailor & Thoms 2014, and so-called parasitic ellipsis in Fitzgibbons 2014). In an *in-situ* deletion analysis, an ellipsis process would have to create dependencies between C^0 and every other terminal node, deciding for each node if it can be overtly realized or not. This increases computational complexity. Note that this is not a *feeding* configuration, in which the application of process A (ellipsis of C^0) creates the context for process B to apply (ellipsis of other material; see Schneider in prep.). In feeding, process B is independently attested and available. This is not the case in gapping. Ellipsis of, for instance, an indirect object, is not an independently available process of the German grammar (52-a), and can only be grammatical in the context of gapping (52-b).

(52) a. *Ich gebe meiner Mutter einen Brief und du gibst ~~meiner Mutter~~ ein Buch.
          I   give my   mother a   letter and you give   a   book
      b.   Ich gebe meiner Mutter einen Brief und du ~~gibst meiner Mutter~~ ein Buch.
          I   give my   mother a   letter and you   a   book
          "I give my mother a letter and you a book."

In this sense, an *in-situ* analysis would have to create truly parasitic configurations. A Move-and-Delete approach radically simplifies this configuration: it shows that it is possible to account for what looks like parasitism on the surface (ellipsis of A fully dependent on ellipsis of B) with the combination of established independent processes, namely constituent ellipsis and movement. The biggest disadvantage of this approach is the postulation of exceptional movement, which will be discussed in more detail in section 4.2.2.

3   Determiner sharing and split topicalization

In a nutshell, I propose that determiner sharing structures in German are an elliptical version of split topicalizations. *Split topicalization* refers to structures in which material that belongs to a single noun phrase appears in more than one position, as in (53).

(53) <u>Rosen</u> hab ich dir   schon <u>einige</u> *t* geschenkt.
      roses have I   you.DAT already several   given.as.present
      "As for roses, I have already given you a few."

These structures have received many different analyses: the standard analysis posits that the discontinuous material is base-generated as a single phrase, out of which the noun moves to the left periphery (Van Riemsdijk 1989, see also Bhatt 1990; Fanselow & Ćavar 2002). Another family of approaches proposes that no movement is involved and that the discontinuous material is base-generated in its surface positions (e.g., Haider 1990; Pittner 1995; Ballweg 1997). Finally, hybrid analyses posit that the discontinuous material is base-generated as distinct phrases, and that one of these phrases moves to the left periphery (e.g., Fanselow 1988, 1990, 1993; Roehrs 2009; Ott 2012). Crucially, by now there is a near consensus that a movement dependency into the left periphery is involved in the derivation of splits. This is the only relevant point for the present analysis of determiner sharing: it is compatible with all accounts of split topicalization that are based on movement.

If determiner sharing sentences such as (54) are an elliptical variant of split topicalizations such as (55), we expect determiner sharing to be subject the same restrictions as splits. This section aims to show that this is the case.

(54) Jede   Schülerin   mag Katzen und Lehrerin   Hunde.
      every.NOM student.NOM likes cats.ACC and teacher.NOM dogs.ACC
      "Every student likes cats and every teacher likes dogs."

(55) Jede   Schülerin   mag Katzen und Lehrerin   mag jede   Hunde.
      every.NOM student.NOM likes cats.ACC and teacher.NOM likes every.NOM dogs.ACC
      "Every student likes cats and as for teachers, every one of them likes dogs."

3.1   Case-connectivity

Splits show connectivity effects with respect to case marking. It has sometimes been claimed that only NOM and ACC marked DPs can be split (e.g., Fanselow 1988:102, Tappe 1989:163). However, Kniffka (1996:33,82), Fanselow & Ćavar (2002), and Roehrs (2009:89) describe split datives and genitives, (56). The case marking on the dislocated noun suggests that it is connected to a position to which the case has been assigned.

(56) a. {Lehrer-n/   *Lehrer}   hat er kein-en   geholfen.
          teacher-DAT.PL teacher.NOM.PL has he no-DAT.PL helped
          "As for teachers, he didn't help any of them."   (Roehrs 2009:89)
      b. Schrecklich-er Morde   an Studenten ist er viel-er   beschuldigt
          horrible-GEN.PL murders.GEN.PL at students is he many-GEN.PL accused
          worden.
          been
          "He has been accused of many horrible murders of students." (Fanselow & Ćavar 2002:73)

As expected, determiner sharing may apply to dative-marked nominals, such as in (57). The noun with the missing determiner must bear the case-marking assigned by the elided verb.

(57) Einig-en   Schüler-n   bist du   gefolgt und {Lehrer-n/   *Lehrer}
      some-DAT.PL student-DAT.PL are you.NOM followed and teacher-DAT.PL teacher.NOM.PL
      ich.
      I.NOM
      "You followed some students and I followed some teachers."

The split off noun may not be embedded in a complex DP (Roehrs 2009), as in (58).

(58) a. *Männern habe ich immer nur [DP die Autos von [DP jungen   t]] repariert.
          men.DAT have I   always only   the cars of   young.DAT   repaired
      b. *Roten   Punkten habe ich immer nur [DP die Bluse mit [DP zwei   t]] getragen.
          red.DAT dots.DAT have I   always only   the blouse with   two.DAT   worn
                                                                       (Roehrs 2009:101f.)

The same is true for determiner sharing. If the noun with the omitted determiner stems from an embedded DP, the structure becomes severely degraded, (59).

(59) *[DP Das Auto von [DP jedem Professor]]   hab ich abgeschleppt und Studenten_i repariert
           the car of   every professor.DAT have I   hauled   and student.DAT repaired
       ... [VP [DP das Auto von [DP jedem t_i]] ...]
              the car of   every

3.2   Mixed splits and sharing

Apart from NP splits, VPs can also be split in German, as in (60), where a non-finite verb is topicalized, leaving its object behind (e.g., Van Hoof 2006/2017).

(60)   Gegessen hat er nur die grünen Bohnen.
       eaten   has he only the green   beans
       "He has only eaten the green beans."   (Van Hoof 2006/2017)

An idiosyncratic property of split topicalization in German is that NP splits and VP splits can be combined to create what have been called *mixed splits* (Van Hoof 2006/2017). In these structures, the bare noun is contained in a topicalized VP, as in (61).

(61)   [VP Rosen gepflanzt] hab ich schon [viele].
           roses planted   have I   already many
       "I have already planted many roses."

The analysis of such structures is not trivial, since it is not clear how the VP can be topicalized while stranding a D-element contained in it. Fanselow (1987) proposes that the VP-structure in (62-a) is re-analyzed as (62-b), creating a constituent that can be fronted (see also Van Hoof 2006/2017:15–17).

(62)   a.   [VP [DP *many roses*] [V *planted*]]
       b.   [VP [DP *many t_i*] [FP *roses_i planted*]]

Whatever the right analysis for mixed splits is, it is striking that the same configuration is possible in determiner sharing. The noun with the missing determiner can be part of a topicalized VP, (63). To maintain parallelism, a VP has been topicalized in both conjuncts. In the elliptical second conjunct, the omitted quantifier *jede* "every" can still be interpreted, as suggested in the glossing.

(63)   [VP Jede   Konsequenz   ignoriert] hat der angeklagte Millionenerbe *t* und [VP
           every.ACC consequence.ACC ignored   has the accused   heir.of.millions and
       Entscheidung bereut]   der verdrossene Vater.
       decision.ACC regretted the disgruntled father
       "The accused heir has ignored every consequence and the disgruntled father has regretted every
       decision."

3.3   Types of determiners

In both NP splits and determiner sharing, not all DP-elements are equally accepted. If determiner sharing is split topicalization in an ellipsis site, the same elements that can be shared should also be split-able. This is indeed what we find.[8] The elements that can be shared are identical to the ones that may not be part of the topicalized part of NP splits, i.e., that must be left *in situ* within the ellipsis site. These elements are quantifiers like *viele* "many", *wenige* "few", *jeder* "every", *alle* "all", *mehrere* "several", etc., and demonstratives like *dies-* "this" and *jen-* "that', (64) and (65).

(64)   *Split topicalization*

     a.   Ammern mag ich eigentlich (nur) viele/ wenige/ alle/ manche *t*.
        buntings like I   actually   only many few   all   some
        "As for buntings, I actually many/ few/ all (only) some of them."

     b.   Fink(en) nistet hier jeder/ keiner.
        finch(.PL) nests here every no
        "As for finches, every/ none of them nests here."

     c.   Fink(en) hab ich nur diesen/ jenen gesehen.
        finch(.PL) have I   only this   that seen
        "As for finches, I have only seen this/ that one."

(65)   *Determiner sharing*

     a.   Viele/ wenige/ alle/ manche Ammern mögen Insekten und __ Finken __ Samen.
        many few   all   some   buntings like   insects and   finches   seeds
        "Many/ few/ all/ some buntings like insects and many/ few/ all/ some finches like seeds."

     b.   Jeder/ dieser/ jener/ kein Fink nistet im   Nistkasten und __ Rabe __ im   Baum.
        every this   that   no finch nests in.the nestbox   and   raven   in.the tree
        "Every/ this/ that/ no finch nests in the nestbox and every/ this/ that/ no raven nests in the tree."

Certain elements cannot occur in the *in-situ* part in split topicalization, namely definite and indefinite[9] articles, and possessive pronouns (66). These are also ungrammatical in a sharing construction, (67).

(66)   a.   *<u>Drossel</u>   hab ich <u>die</u>/   <u>'n-e</u> *t* im   Rosenbusch gefunden.
          thrush.FEM have I   the.FEM a-FEM   in.the rose.bush   found

     b.   *<u>Mutter</u> kann <u>meine</u> *t* nähen.
        mother can   my   sew

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[8]The judgments on determiner sharing reported here are my own, and should be considered with some caution, since determiner sharing seems to be subject to considerable speaker variation. In any case, the analysis proposed in this paper makes the prediction that, *ceteris paribus*, speakers who accept a certain quantifier or other DP-element in determiner sharing should also accept it in split topicalization.

[9]The indefinite article *ein-* is homophonous with the numeral "one". Ott (2011) argues that the article cannot occur in splits, but the numeral can. He proposes a way of differentiating between the two: the article can occur in a reduced form *'n-*, while the numeral cannot.

(67) a. *Die/ 'n-e Drossel   war der Bräutigam und __ Amsel   __ die Braut.
          the.FEM a-FEM thrush.FEM was the groom   and   blackbird.FEM   the bride

     b. *Meine Mutter kann nähen und __ Oma   __ häkeln.
          my   mother can sew   and   grandmother   crotchet

There are some elements that do not behave as predicted: numerals and (bare) adjectives are possible in splits, (68), and we would expect that they should also be possible in sharing structures. However, that is not the case, (69).

(68)   *Split topicalization*

     a. <u>Amseln</u>   hab ich <u>zwei</u> *t* am   Futterhäuschen gesehen.
          blackbirds habe I   two   at.the bird.feeder   seen
          "As for blackbirds, I have seen two at the bird feeder."

     b. <u>Wein</u> hat sie nur <u>georgischen</u> *t* da.
          wine has she only Georgian   there
          "As for wine, she only has a Georgian one."

(69)   *Determiner sharing*

     a. #Zwei Amseln   sind am   Futterhäuschen und __ Drosseln __ an der Tränke.
          two blackbirds are at.the bird.feeder   and   thrushes   at the watering.place

     b. ?#Guter Wein kommt aus   Frankreich und __ Wodka aus   Russland.
          good wine comes from France   and   vodka from Russia

I do not have a full-fledged explanation for this. Since ellipsis is involved in (69), but not in (68), it seems reasonable to assume that sharing is subject to more restrictions than splits. I leave this as an open question at this point.

3.4   Regeneration

Split topicalizations show some behaviors that are not trivially reconcilable with a movement analysis. Concretely, reconstruction of the topicalized phrase into its supposed base position can result in an ungrammatical sequence. The examples in (70) involve the "regeneration" of an article or a preposition in the topicalized position. Such doubling is ungrammatical in the base position.

(70) a. <u>Einer/'Ner</u> <u>alten</u>   <u>Hexe</u>   bin ich noch <u>keiner</u> *t* begegnet.
          a.DAT   old.DAT witch.DAT AUX I   yet no   met
          "As for old witches, I haven't met any yet."

     b. *keiner einer alten Hexe
          no   a   old   witch

     c. <u>In Schlössern</u> hab ich noch <u>in</u> <u>keinen</u> *t* übernachtet.
          in castles   AUX I   yet in no   slept
          "As for castles, I haven't stayed in any yet."

     d. *in keinen in Schlössern
          in no   in castles

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Van Riemsdijk (1989) proposes a morphological repair analysis: an article or a preposition can be generated at the left periphery, if the fronted element is not a well-formed NP by itself (see also Fanselow & Ćavar 2002; Féry et al. 2007; Goncharov 2015 for other analyses). For the purposes of determiner sharing, regeneration should not have any influence its the availability or interpretation. Indeed, a regenerated article in (71) can co-occur with the shared interpretation of the indefinite (Klaus Abels, p.c.).

(71) Einer alten   Hexe   bin ich noch keiner begegnet und einer (alten) Vogelscheuche
      a.DAT old.DAT witch.DAT AUX I   yet no   met   and a.DAT old.DAT scarecrow.DAT
      du.
      you
      shared reading: *"I haven't met an old witch and you haven't met an old scarecrow."*
      non-shared reading: ?*"I haven't met an old witch and you have met an old scarecrow."*

This section aimed to demonstrate that splits share many descriptive similarities with determiner sharing structures. The next section explores how gapping and split topicalization interact to create these structures.

4   Analysis

The fundamental idea is simple: determiner sharing arises when split topicalization applies in an elliptical structure, e.g., in gapping: the determiner will be left inside the ellipsis site, while a bare noun is fronted, (72).

(72)   *The conspiracy of ellipsis and split topicalization*
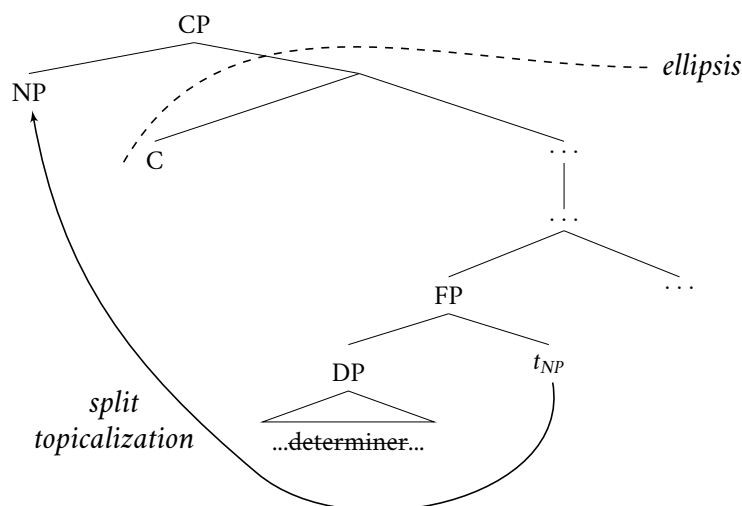
This straightforwardly accounts for the observed dependency between determiner sharing and gapping: the determiner is deleted as a by-product of gapping. No designated determiner-deleting ellipsis operation needs to be posited (*pace* Schwarzer 2021). Thus, this apparent complex non-constituent ellipsis, which deletes a finite verb and a determiner to the exclusion of the noun, can be boiled down

to the simple constituent ellipsis targeting a clause.

Before discussing the derivation of determiner sharing in more detail, let us examine two crucial aspects of the analysis: (i) the mechanism of ellipsis licensing, and (ii) the left periphery and exceptional movement into it.

4.1   Ellipsis licensing

Following standard approaches, I assume that ellipsis of YP is triggered by an [E]-feature on the head of YP's complement X^0 (Merchant 2001, 2004; Van Craenenbroeck & Lipták 2013). Aelbrecht (2010) shows that the [E]-feature itself needs to establish a relation with another head in order to license ellipsis and restrict its distribution. I understand this licensing as Agree for category features. Note that this Agree relation happens upwards, i.e., the goal c-commands the probe. This is illustrated in (73).

(73)   *Ellipsis and licensing*
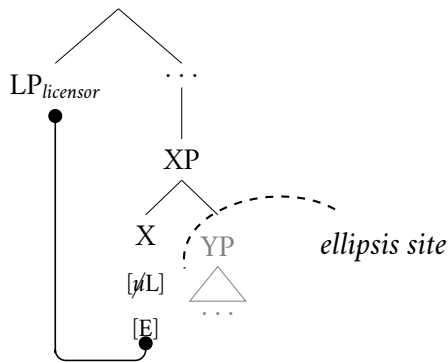
The [E]-feature approach has been criticized for lacking explanatory adequacy (e.g., Ott & Struckmeier 2018): [E] is unrestricted in the sense that it can in principle be part of any head's feature bundle. While it has been observed that ellipsis can only occur in the complement of (certain) functional projections (e.g., Lobeck 1995; Saab 2022), nothing in the theory can derive that restriction. The licensing conditions by Merchant (2001,2004), Aelbrecht (2010) a.o. are also only technical tools and extremely construction-specific (see also discussion in Thoms 2010). Similarly, cross-linguistic variation is unaccounted for. For instance, German lacks VP-ellipsis and pseudogapping, which means that German T^0 or Voice^0 cannot host [E], but this can not be explained easily in the [E]-feature ellipsis framework. However, as far as I can see, all theories of ellipses suffer from this problem. All accounts have to stipulate the distribution of ellipses to some extent (see also discussion in Murphy 2016). As of now, it seems to be an open research question. Despite its problems, the [E]-feature approach is the most standard one, as far as I understand.[10] Therefore I use this framework to develop the analysis of determiner sharing.

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[10] For alternatives to the [E]-feature approach to ellipsis, see e.g., Saito & Murasugi (1990); Lobeck (1995); Thoms (2010); Abe (2015).

4.2 The ellipsis-Comp generalization and movement to the left periphery

In the previous sections, I have aimed to show that gapping in German should be analyzed as clausal ellipsis preceded by evacuation movement. This immediately raises at least two questions: exactly which phrase is deleted, and what triggers the remnants' movement out of that phrase? This section addresses these questions.

4.2.1 The ellipsis-Comp generalization

If the present view of gapping is on the right track, we have a structure in which C^0 must be inside the ellipsis site, but the remnants, which have moved to specifiers of CP, must not be. This is the configuration that is captured by the *ellipsis-Comp generalization* (74), originally described for sluicing.

(74)   *The Sluicing-Comp Generalization* (Merchant 2001:62)
       In sluicing, no non-operator material may appear in Comp.

Sluicing is standardly analyzed as ellipsis of TP, leaving a *wh*-phrase remnant in Spec,CP. However, C^0-material such as complementizers or fronted auxiliaries may not surface in sluicing either, (75).

(75)   A: Max hat jemanden eingeladen. B: Echt? Wen   (*hat)?
          Max has somebody invited   really who.ACC has
       "*Max has invited somebody. Really? Who?*"   (Merchant 2001:62)

In the present analysis, gapping is also characterized by (74): the V2 position C^0 must be obligatorily empty, but remnants in Spec,CP must be able to surface.

There are different ways to account for (74). The standard approach posits that TP ellipsis in sluicing bleeds the T-to-C movement of the auxiliary that is normally triggered in questions (e.g., Lasnik 1999; Merchant 2001; Van Craenenbroeck & Lipták 2013; Landau 2020). It cannot easily account for the impossibility of overt complementizers in sluicing. An alternative analysis suggests that not TP, but C′ is deleted, which accounts for the omission of both dislocated and base-generated elements in Comp without further assumptions (e.g., Heck & Müller 2003/2007; Thoms 2010; Döring 2014; Messick & Thoms 2016). Landau (2020) summarizes the disadvantages of this account: one, it is not compatible with standard X′-theory (as in Chomsky 1994, see also Merchant 2001:81), and two, it is not compatible with [E]-feature licensing: Merchant (2001) proposes that $C_{[Q,uwh]}$ licenses ellipsis of its complement. If C is contained in the ellipsis site, and there exists no higher head, it is unclear how the licensing mechanism should work. A third approach builds on the idea that the Comp domain is split into different projections (Rizzi 1997, see also Müller & Sternefeld 1993; Müller 1995). If the landing site for A′ movement is in a higher phrase than the one for verb movement, then a higher C_1-head can license ellipsis of a lower C_2-phrase (e.g., Baltin 2010; Van Craenenbroeck 2010). As Messick & Thoms (2016:fn. 17) point out, this type of approach faces (empirical) challenges. It would be expected that languages that can realize multiple distinct C heads together (such as Welsh, Hendrick 2000), should allow the head of the projection which remnants move into, to be realized overtly. Only lower C heads should be subject to deletion, which does not seem to be the case.

For the purposes of the analysis of determiner sharing, I remain agnostic towards a specific implementation of (74). All of the approaches are in principle compatible with a Move-and-Delete analysis of determiner sharing. I will use a double CP-layer (see e.g., Iatridou & Kroch 1992) for illustration in the rest of this paper, but ask the reader to keep in mind that to the extent that the problems of, e.g., the C′-deletion account can be overcome, the basic argument is compatible with a C′-deletion account.

4.2.2 Exceptional movement

Regarding movement to the left periphery, there are (at least) two steps involved: the first is split topicalization, as it also happens in non-elliptical contexts. Any subsequent movement is exceptional, i.e., it cannot occur without ellipsis. As a V2-language, German allows at most one constituent in Spec,CP in non-elliptical clauses, (76) (see e.g., Fanselow 1993; Müller 2004; Jensen 2012 *vs*. St. Müller 2003, 2005; Bildhauer & Cook 2010; St. Müller et al. 2012).

(76)   a.   [$_{CP}$ Deinen Hund$_j$ [$_C$ habe ich lange nicht t_j gesehen]].
             your   dog   have I long not   seen

    b.   *[$_{CP}$ Deinen Hund$_j$ [ich$_k$ [$_C$ habe t_k lange nicht t_j gesehen]]].
             your   dog   I   have   long not   seen
        "I haven't seen your dog in a long time."

Exceptional movement in ellipsis is often considered to be a *repair* or *last resort* operation to avoid a violation of a PF-requirement (e.g., Richards 2001; Takahashi 2004; Fox & Pesetsky 2005; Müller 2007; Temmerman 2013; Boone 2014; Weir 2014a). There are several problems with this approach. First, there is no obvious way to implement the intuition of repairs in a Minimalist framework. Repair operations are understood as processes which are blocked by a certain constraint C1 in most contexts. The repair process can apply if it serves to satisfy a higher ranked constraint C2, even if it violates C1. In a framework that does not employ violable constraints, *"the words 'last resort' are employed but the concept plays no role in the analysis"* (Grimshaw 2013:270). True repair is only available in frameworks which are built on violable constraints (such as Grimshaw 1997; Heck & Müller 2000, 2003/2007). Empirically, the properties of exceptional movement are not fully captured by previous analyses that propose that it is not proper syntactic movement, but instead only happens at PF (Weir 2014a) or LF (Richards 2001; Temmerman 2013). The movement tests in section 2.2 suggest that the movement has syntactic and semantic effects. It is unclear how a PF-movement approach would account for sensitivity to clause-boundaries, P-stranding, (im-)mobile particles, etc. The LF-movement approaches rely on the availability of general LF movement that happens ubiquitously but is only made visible in ellipsis. LaCara (2017) shows that this makes the prediction that exceptional movement should occur in VP-ellipsis, which is not borne out. (77) shows that multiple *wh*-movement, which is possible in sluicing, is not available in VP-ellipsis, contrary to the prediction of a Richards/Temmerman-style analysis.

(77)   a.   Mary donated a different book to each charity, but I don't know [which book] [to which

        charity].   (LaCara 2017:208)

        b.   *Each student must buy something, but I don't know [who] [what] should.

                                                                                                     (LaCara 2017:211)

A second argument against general LF-movement comes from focus phrases in German. German allows focus-marked phrases to stay *in situ*, and there is no evidence of covert focus raising (consistent with e.g., May 1985; Pesetsky 1987). Crucially, the non-initial remnant of gapping is interpreted as a (contrastive) focus (e.g., Winkler 2005; Gergel et al. 2007; Gengel 2013; Konietzko & Winkler 2010; Molnár & Winkler 2010). If this element were to undergo obligatory covert movement only made overt by ellipsis, we should be able to detect this movement. The first test concerns island boundaries (based on Amaechi & Georgi 2020). (78) shows that the focus-marked object can be contained in a NP or adjunct island. If focus interpretation involved movement, such sentences should be ungrammatical, since the focus-operator cannot move across an island boundary. The focus interpretation is forced by a *wh*-question.

(78)   *Context: You said that Ada met a woman at the market. What did the woman buy?*

        a.   Ada hat eine Frau   getroffen die RÜBEN   gekauft hat.
              Ada has a   woman met   who turnips.ꜰᴏᴄ bought has

        b.   Ada hat eine Frau   getroffen bevor sie RÜBEN   gekauft hat.
              Ada has a   woman met   before she turnips.ꜰᴏᴄ bought has
              "Ada met a woman who/before she bought turnips."

Second, consider so-called Beck intervention effects, which describe configurations in which a negation or a focus-sensitive particle can induce ungrammaticality in *in situ wh*-questions (Amaechi & Georgi 2020; Beck 1996, 2006). The relevant contrast is illustrated in (79) for Korean. (79-a) shows the intervention effect: ungrammaticality arises if the focus-particle *man* intervenes between the *wh*-phrase and its potential landing site. Ungrammaticality can be avoided by moving the *wh*-element across the intervener, to a position where it is no longer c-commanded by the particle, as in (79-b).

(79)   a.   *Minsu-man nuku-lûl po-ss-ni?
              Minsu-only who-ᴀᴄᴄ see-ᴘꜱᴛ-ǫ

        b.   Nuku-lûl Minsu-man *t* po-ss-ni?
              who-ᴀᴄᴄ Minsu-only   see-ᴘꜱᴛ-ǫ
              "Who did only Minsu see?"   (*Korean*, Beck 2006:3)

Amaechi & Georgi (2020) show that *in situ wh*-phrases in Igbo behave as if they have undergone movement, i.e., they do not show a Beck intervention effect. Even though a negation c-commands an *in situ wh*-phrase in (80), the sentence is grammatical. The lack of the effect suggests that *in situ wh*-elements move covertly.

(80) Àdá á-gū-ghị̄   gínī̄?
      Ada NMLZ-read-NEG what
      "What did Ada not read?"   (*Igbo*, Amaechi & Georgi 2020:311)

This contrasts with German. German exhibits Beck effects with alternative questions, see (81). The focus particle *nur* blocks an alternative question interpretation when it c-commands the disjoint phrase (a yes/no reading is still available). Similarly, (82) cannot be a felicitous answer to the context question. The fact that German shows Beck intervention effects for focus movement suggests that no covert syntactic movement across the intervener takes place.

(81) a. ?*Hat nur Maria den Jonas oder die Ida eingeladen?
             has only Maria the Jonas or   the Ida invited

      b.   Hat den Jonas oder die Ida nur Maria eingeladen?
            has the Jonas or   the Ida only Maria invited
            "Did only Maria invite Jonas or Ida?"   (Beck & Kim 2006:169)

(82) *Context: what did only Maria buy?*
      #Nur Maria hat die RÜBEN gekauft.
       only Maria has the turnips bought

This indicates that there is no general focus movement in German that can be made visible by ellipsis. The movement involved in ellipsis is truly exceptional in that it only occurs in this context.

In a Minimalist framework, irregular movement can be regulated by the insertion of edge features. In the numeration, it is only possible to enrich heads with non-inherent features under certain conditions. One of these conditions is the Edge Feature Condition for intermediate movement (EFC, Chomsky 2000:109, Chomsky 2001:34, see also Müller 2010:42, Müller 2011:3), (83).

(83) *Edge Feature Condition*   (Chomsky 2000)
      The head X of phase XP may be assigned an edge feature after the phase XP is otherwise complete, but only if that has an effect on outcome.

To constrain edge features to ellipsis contexts, we can postulate a Feature Co-occurrence Restriction, a principle borrowed from HPSG (Gazdar et al. 1985).[11] This is a constraint on the numeration similar to the EFC. To account for the exceptional movement of the second remnant to the prefield in gapping, I propose the restriction in (84).

(84) *Feature Co-Occurrence Restriction for exceptional movement*
      The head C^0 of CP may be assigned an additional edge feature if and only if it already contains the [E]-feature.

(84) ensures that multiple instances of movement to the prefield only occur when ellipsis happens, triggered by an [E]-feature. I assume that one [EF], which triggers (split) topicalization to the prefield,

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[11] I thank Gereon Müller for suggesting this solution.

is always present on C^0, following Fanselow & Lenertová (2011), (85-a). If a rule like (84) applies to such a head, additional EFs[12] are added in the context of ellipsis. The result is a head that triggers ellipsis with two instead of one instances of movement into its specifier, (85-b).

(85)   *Feature composition of C^0*

    a. $\{[\text{EF}],[\text{E}],...\}_C$

    b. $\{[\text{EF}],[\text{EF}],[\text{E}],...\}_C$

It is clear that a feature co-occurrence condition like (84) is not a deep explanation of why movement may exceptionally happen in ellipsis contexts and nowhere else. It is rather a formal description of an observation.[13] The advantage of such a rule-based approach to exceptional movement is that it is compatible with the general architecture of the framework, does not rely on implicit intuitions, and does not over-generate. It can capture the fact that the movement is properly syntactic with effects on both PF and LF, and it adequately restricts the trigger for movement to elliptical contexts.

The Move-and-Delete approach is based on the observation that remnants exhibit symptoms of movement in the regular case and it generalizes this movement to other cases in which it is not independently motivated. This is the biggest criticism of the Move-and-Delete approach: movement has to happen where it generally cannot occur in order to remedy a structure that is doomed to crash without it (e.g., Abe 2015, 2016; Ott & Struckmeier 2016, 2018; Broekhuis 2018; Broekhuis & Bayer 2020; Griffiths 2019). Exceptional movement and other last-resort or repair operations are in principle nothing more than processes that can apply in a specific context, and cannot apply outside of that context. Such processes can be found in many areas of language (see e.g., Grimshaw 1997; Kalin 2012, 2014; Brandt & Fuß 2013). Even what is descriptively referred to as repair-driven movement is not restricted to ellipsis, but has been described e.g., in locative inversion (Salzmann 2013) and for

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[12]For simplicity, I have only discussed gapping with two remnants. However, gapping is a type of ellipsis than could also leave more remnants, see (i).

(i)   Wir haben morgens   Kombucha gemacht und [ihr]   [abends]   [Kefir].
    we have in.the.morning kombucha made   and you.PL in.the.evening kefir
    "We have made kombucha in the morning, and you have made kefir in the evening."

For each contrastive phrase in the antecedent clause, there is a corresponding remnant in the elliptical clause. And for every remnant, there must be a movement-inducing feature. Working out how exactly it can be ensured that the number of contrasting phrases match the number of attracting features on C^0 is beyond the scope of this work. One starting point for a technical implementation could be Phase Balance (Heck & Müller 2000, 2003/2007). Phase Balance can be understood as a wellformedness constraint applied to the numeration: it checks whether for every movement inducing feature [*u*F] there exists a matching feature [F] that is potentially available. However, Phase Balance is mono-directional: it can ensure that the number of goal match the number of probes. It cannot, as it stands, regulate how many probes should be assigned to C^0 in the first place. The arbitrariness of the number of remnants raises interesting questions for the identity condition of ellipsis, which I must defer to future research.

[13]The processes that can apply in the numeration or even the lexicon are poorly understood. One could argue that the notion of feature co-occurrence restrictions is just as incompatible with Minimalism as repair operations. If syntax is really the only structure building module in the grammar, it is unexpected that features can be assigned or combined to form complex structures pre-syntactically (see e.g., discussion in Adger 2010). If it is taken seriously that the lexicon cannot involve structure building operations, then the atoms of grammar should be completely independent privative features. This is a point of criticism of minimalist theories that Boeckx (2014) calls "featuritis": without a theory of what a possible feature can be, minimalism shifts some explanatory power away from syntax and to the lexicon in which all kinds of features and operations that apply to features are stipulated.

labeling purposes (Blümel 2012; Ott 2012, 2015). Still, stipulations in the implementation of EM are a valid point of criticism. However, as far as I know, the adversaries of the Move-and-Delete approach fail to provide an alternative account that does not rely on some form of stipulation.[14]

4.3 Derivation

Now that the building blocks of the analysis are in place, let us examine how split topicalization and ellipsis interact to create determiner sharing structures.

Take a sentence like (86) as an example.

(86) Jede   Schülerin mag Katzen und __ Lehrerin Hunde.
      every student   like cats   and   teacher dogs
      "Every student likes cats and every teacher likes dogs."

I have tried to argue that the second conjunct has a full clausal structure. If we solve the ellipsis-Comp generalization problem with a double CP layer, the lower CP is then the ellipsis site, since it is the minimal projection that contains the verb-second position (C^0). The higher C^0 is the head that attracts a phrase into its specifier to fill the preverbal position, triggered by [EF]. Since gapping is generally optional, the ellipsis-inducing [E]-feature is optionally assigned to this C-head. If it is, the rule in (84) can apply: in the context of [E], C^0 can be assigned an additional [EF]. This C-head then has the features that trigger movement of two phrases into its specifier, and subsequent ellipsis of its complement. This is the standard gapping configuration. Determiner sharing arises when instead of regular topicalization, the movement step into Spec,CP splits up noun and modifier, stranding the modifier in the ellipsis site, as in (87).

(87)
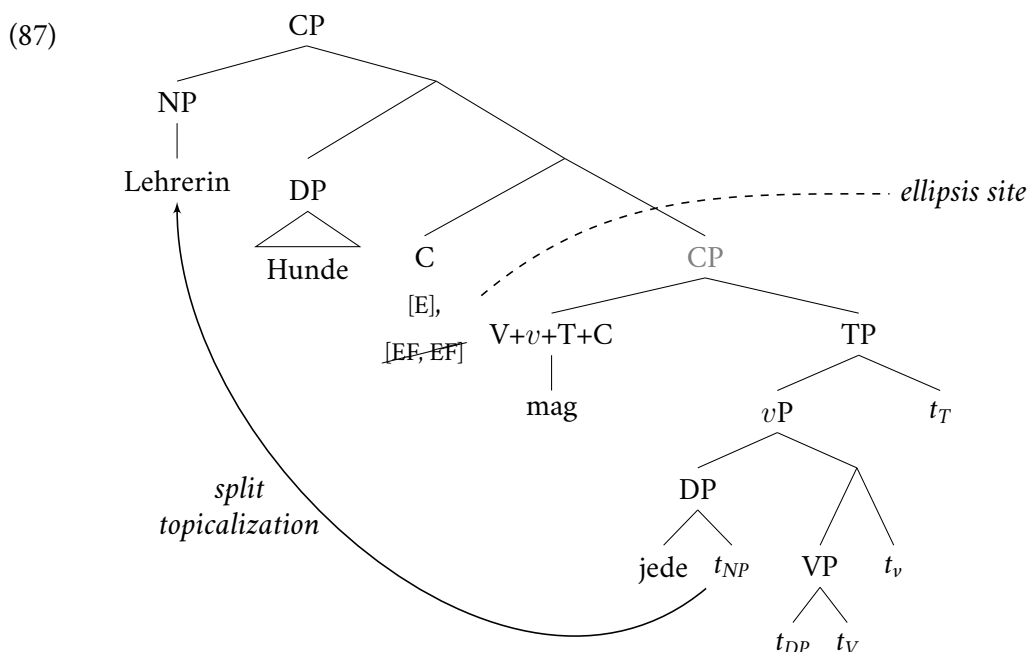
[14]For instance, in the *in situ* ellipsis analysis in Broekhuis (2018); Broekhuis & Bayer (2020) it is stipulated where the mechanism for non-pronunciation, Selective Spell-out, can apply. Abe (2015) and Kimura (2010) stipulate a PF-adjacency requirement for (*wh*)-features (following Agbayani 2006) and that it can be fulfilled by deletion of intervening material.

The ellipsis site now contains not only the finite verb but also the quantifier, while a bare noun has moved to the left periphery. The surface structure created by the interaction of split topicalization and gapping is the sequence described as determiner sharing. Crucially, split topicalization and gapping are completely independent of each other. Gapping can occur without split topicalization, as in (88-a). Split topicalization in the second conjunct can occur without gapping, (88-b). If both occur at the same time, the result is determiner sharing, (88-c), and if neither applies, we get a simple coordination of sentences, (88-d).

(88)   a.   Jede   Schülerin mag Katzen und jede   Lehrerin Hunde.
             every student   likes cats   and every teacher   dogs

       b.   Jede   Schülerin mag Katzen und <u>Lehrerin</u> mag <u>jede</u>   *t* Hunde.
             every student   likes cats   and teacher   likes every   dogs

       c.   Jede   Schülerin mag Katzen und Lehrerin Hunde.
             every student   likes cats   and teacher   dogs

       d.   Jede   Schülerin mag Katzen und jede   Lehrerin mag Hunde.
             every student   likes cats   and every teacher   likes dogs
             "Every student likes cats and every teacher likes dogs."

4.4   Deriving the empirical observations

This section explores how the present analysis can account for the empirical observations we have made about determiner sharing. The properties of German determiner sharing are repeated in (89).

(89)   *Determiner sharing generalizations*

       a.   The ellipsis generalization: determiner sharing is only possible in gapping contexts.
       b.   The first-element generalization: the element with the omitted determiner must be the first constituent of the conjunct.
       c.   The non-constituent generalization: if more than a single determiner is shared, the deleted elements need not form a constituent.

4.4.1   Deriving the ellipsis generalization

Ellipsis of a determiner is analyzed as a by-product of gapping here. Gapping, as well as other instances of clausal ellipsis (e.g., stripping or fragments, recall (8-b) and (10) above), can be combined with split topicalization to create the environment in which a determiner sharing structure is generated: determiners can be deleted to the exclusion of their NP when they can be stranded in an ellipsis site.[15] Therefore, sharing is always observed in ellipsis environments. Since the independent require-

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[15]The analysis predicts that any ellipsis of a certain size can create the suitable environment for determiner sharing. Since German does not show VP-ellipsis or pseudo-gapping, (i), the availability of determiner sharing cannot be tested in these ellipses in German, but a language that allows both VP-ellipsis/pseudogapping and split topicalization is predicted to also allow determiner sharing in these environments.

(i)   a.   *Kerstin hat eine ganze Tüte Gummibärchen gegessen und Mario hat auch.
             Kerstin has a   whole bag jelly.babies   easten   and Mario has too

ment of recoverability (see e.g., the overview in Lipták 2015 and references therein) ensures that the material inside an ellipsis site must have a matching correlate in the antecedent clause, a determiner can only be deleted if it is (in some relevant sense) identical to an overt determiner in the antecedent conjunct. This creates the illusion that a single determiner is shared between two NPs: the deleted determiner must have the same interpretation as the overt one, because otherwise it could not have been deleted.

The present account does not rely on the postulation of a parasitic determiner-ellipsis that is otherwise unattested in the language (as Ackema & Szendrői 2002). Instead, the Move-and-Delete approach allows us to subsume the superficial parasitism of determiner-ellipsis on verbal ellipsis under a single, well-motivated ellipsis operation.

4.4.2 Deriving the first-element generalization

I argue that this generalization falls out from independent constraints on the information structure of split topicalization. The noun that undergoes split topicalization and that ends up without a determiner, is a topic (e.g., Kniffka 1996; Nolda 2007:107; Ott 2012, see also Büring 1997; Jacobs 1997; Krifka 1998; Winkler 2005). Neeleman & Vermeulen (2012) show that cross-linguistically, dislocated topics must be higher than dislocated foci. Whatever derives this observation can also derive the first-element generalization of determiner sharing. Neeleman & Vermeulen (2012) propose essentially a filter: syntax is free to derive all word orders, but only such structures in which topic > focus can be interpreted. Split topicalization as the basis for determiner sharing makes exactly the right prediction: splits create topics, and topics must independently surface left-peripherally.

4.4.3 Deriving the non-constituent generalization

An especially strong prediction of this analysis is that it should be possible to share pre- and post-nominal modifiers that do not form a constituent to the exclusion of their NP, (90).

(90) a. Jede einzelne braun-äugige Schülerin mag Katzen und Lehrerin Hunde.
  every single brown-eyed student likes cats and teacher dogs
  "Every single brown-eyed student likes cats and every single brown-eyed teacher likes dogs."

 b. Jede Schülerin [CP die etwas auf sich hält] mag Katzen und Lehrerin Hunde.
  every student who something PARTC REFL respects likes cats and teacher dogs
  "Every self-respecting student likes cats and every self-respecting teacher likes dogs."

A Move-and-Delete analysis derives this generalization without difficulty. On the surface, the omitted modifiers in (90) do not form a constituent. In a Move-and-Delete approach, the ellipsis of apparent non-constituents is re-analyzed as deletion of a constituent that contains all of these elements and a NP-trace. The only elements that syntactic processes like ellipis and movement make reference

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 b. *Kerstin hat eine ganze Tüte Gummibärchen gegessen und Mario hat eine Packung Kekse.
  Kerstin has a whole bag jelly.babies easten and Mario has a bag cookies

to are the deleted phrase, CP, and the remnant XPs. The modifiers embedded more deeply inside the ellipsis site need not form a constituent in order for the analysis to go through, since they are not directly affected by a process in any way. Only the NP is topicalized, leaving other DP-internal material behind, (91). If that material is contained in an ellipsis site, the result is a determiner sharing structure.

(91) <u>Lehrerin</u> mag <u>jede</u> *t* <u>die</u> <u>etwas</u>   <u>auf</u> <u>sich</u> <u>hält</u>   Hunde.
     teacher likes every   who something PARTC REFL respects dogs
     "As for teacher, every self-respecting one likes dogs."

5   Cross-linguistic consequences and conclusion

I have argued for a novel analysis of determiner sharing based on new data from German. Despite the superficial appearance of parasitism between ellipsis of the determiner and ellipsis of the verb, I have aimed to show that the syntactic architecture need not be extended to cover parasitic operations. The parasitism of determiner sharing can be fully derived by the combination of independently available processes, namely ellipsis and split topicalization. The resulting configuration is predicted to arise by a consequent application of the Move-and-Delete approach. In this sense, I argue that determiner sharing in languages like German supports this type of approach.

The analysis for determiner sharing developed here predicts that a language that allows split topicalization and can exhibit it in VP- or clausal ellipsis sites, should show determiner sharing. It is clear that this analysis cannot be easily applied to determiner sharing in English or Spanish, since these languages lack a movement type like split topicalization. I do not see this as a weakness of the approach. Rather, it suggests that in different languages, there are different combinations of processes that can generate similar surface structures. German seems to lack vP/VP-ellipsis, whereas English and Spanish allow it. Therefore it may be expected that in VP-ellipsis languages, there are other processes available that derive a structure that is similar to the one discussed for clausal ellipsis in German, such as small ellipsis combined with across-the-board-movement (Johnson 2000a,b; Lin 2002). Another, more radical analytical possibility would be to assume that English determiner sharing is derived exactly in the same way as proposed for German. If one can sufficiently argue for a large-conjunct approach to gapping in English (as in Potter 2014; Frazier 2015; Potter et al. 2017), then one could assume that split topicalization is in principle possible in English, but it only becomes visible under ellipsis, i.e., in determiner sharing structures. Why should this be the case? Surface-morphology clearly plays a crucial role in the derivation of split topicalization, as suggested by the discussion of regeneration effects (Van Riemsdijk 1989; Ott 2012). Consider also examples like (92).

(92) a. *<u>Pferd</u>   habe ich <u>kein</u>   *t* gesehen.
        horse.N.ACC have I   no.N.ACC seen

     b. <u>Pferd</u>   habe ich <u>kein-es</u> *t* gesehen
        horse.N.ACC have I   no-N.ACC   seen

    c.   Ich habe kein/   *kein-es Pferd gesehen.
         I   have no.N.ACC no-N.ACC horse seen
         "I haven't seen a horse."

The material stranded by split topicalization must have overt morphological exponents. Whatever accounts for the ungrammaticality of (92-a) in German might also prohibit split topicalization in English in general: English lacks the overt morphology to license splits, (93).

(93)   *Horse I have no seen.

This morphological licensing requirement is lifted in the context of ellipsis: the non-pronunciation of the stranded element permits splits, (94) (see also Privizentseva to app. for a similar argument in nominal ellipsis).

(94)   No dog likes Whiskas or cat$_i$ Pedigree$_j$ ... [$_{vP}$ ~~no t_i likes t_j~~]

Further typological research is required here. With more case studies and the discovery of (more) cross-linguistically robust generalizations, we can test whether the similarity between determiner sharing in German and English/Spanish is truly accidental, or whether there is evidence to suggest that all instances of determiner sharing should receive the same analysis.

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