Determiner sharing in German

An argument for movement-based approaches to ellipsis

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Marie-Luise Schwarzer

Gutachter: Prof. Gereon Müller
(Institut für Linguistik, Universität Leipzig)
Prof. Klaus Abels
(Division of Psychology & Language Sciences,
University College London)

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Abstract

This dissertation proposes a novel analysis of German determiner sharing. *Determiner sharing* refers to non-constituent ellipsis constructions in which omission of a determiner or quantifier is parasitic on another ellipsis, commonly verbal gapping (McCawley 1993). Omission of a determiner is impossible without gapping. On the basis of novel German data, I propose an analysis in which determiner sharing is the result of a "conspiracy" of two independent processes, (clausal) ellipsis and split topicalization.

I first provide an empirical basis by presenting a description of determiner sharing in German which, to the best of my knowledge, is the first formal observation of determiner sharing in that language. Based on previous literature and three acceptability judgment studies, I formulate empirical generalizations that characterize this construction: (i) determiner sharing is dependent on ellipsis, (ii) the noun with the missing determiner must be the initial element in its conjunct, (iii) the shared elements need not form a constituent, and (iv) elements that occupy a low position in the nominal spine cannot be shared. Crucially, determiner sharing is not only possible in gapping, but also in stripping contexts. One of the contributions of this thesis is the detection of more contexts which allow determiner sharing.

I then argue that gapping in German must be analyzed as a clausal ellipsis, and that the remnants of gapping are part of an A′-movement dependency, based on evidence from e.g., island sensitivity, P-stranding, the impossibility of cross-conjunct binding, word order of particles, and case morphology on the noun with the missing determiner. Split topicalization is a type of

movement that separates a noun phrase from other DP-internal elements, and moves it to the left periphery. I show that split topicalization and determiner sharing overlap significantly in A′-movement properties and the types of DP-elements that can be involved in both constructions.

A detailed step-by-step derivation illustrates how the simultaneous application of ellipsis and split topicalization can generate determiner sharing and account for the empirical generalizations. A move-and-delete approach to gapping can derive the parasitism of determiner sharing naturally: if a noun undergoes split topicalization and moves to a position higher than the elided phrase, its determiner will be left behind in the ellipsis site and consequently deleted. Omission of a determiner is therefore an accidental result of the joint application of split topicalization and (clausal) ellipsis. Viewing gapping as clausal ellipsis allows us to unify it with other constructions, such as stripping. This makes the theory of determiner sharing less complex: unifying gapping and stripping as clausal ellipsis allows us to apply the same analysis of sharing to seemingly distinct ellipsis phenomena. In this way, this thesis contributes to making the discussion of ellipsis phenomena less construction-specific.

The other generalizations are derived as follows. The deleted elements need not form a constituent in an analysis in which ellipsis does not apply to them directly, but to a phrase that contains them. I argue that the word order constraint is derived by the information-structural properties of split off NPs and an independently motivated requirement on the interpretation of topics and focus (Neeleman & Vermeulen 2012): split off NPs are topics and *ex situ* topics must occupy the highest position in the left periphery. I suggest a tentative explanation for the inability of certain DP-elements to participate in sharing: if an element, such as an article, occupies a position that is relatively low in the nominal spine, it cannot be split off, but must undergo topicalization with its noun, and can therefore never be found in determiner sharing constructions. Finally, I employ an alternative approach to exceptional movement in ellipsis: instead of a repair operation whose details often

remain implicit and intuitive, I suggest that heads that cause ellipsis can be assigned an additional movement inducing feature in the numeration (based on Feature Co-Occurrence Restrictions in Gazdar et al. 1985).

I argue that the success of this "conspiracy" account of determiner sharing serves as an argument for movement-based approaches to ellipsis, and against *in situ* ellipsis analyses, thereby contributing to an ongoing debate in the research of ellipsis (see e.g., Griffiths & Struckmeier 2021 and contributions in Güneş & Lipták 2022).

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Abbreviations

ACC ..... accusative

ACT ..... active voice

AUX ..... auxiliary

COMP ..... complementizer

DAT ..... dative

DECL ..... declarative

DiP ..... discourse particle

dPR ..... resumptive d-pronoun

ECM ..... exceptional case marking

EM ..... exceptional movement

EXPL ..... expletive

F ..... feminine

FOC ..... focus

GEN ..... genitive

LF ..... logical form

M . . . . . masculine

MDA . . . . . move-and-delete approach

NEG . . . . . negation

NEUTR . . . . . neuter

NMLZ . . . . . nominalizer

NOM . . . . . nominative

NPI . . . . . negative polarity item

PARTC . . . . . particle

PASS . . . . . passive voice

PF . . . . . phonological form

PL . . . . . plural

PRF . . . . . perfect

PTCP . . . . . participle

Q . . . . . question particle

REFL . . . . . reflexive

SBJV . . . . . subjunctive

SG . . . . . singular

V2 . . . . . verb-second

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1. Introduction

"Ellipses confront the syntactician with unexpected deviations from normal behavior, and thereby provide the seeds for the next generation of syntactic theory."
Johnson (2008: 2)

Ellipsis refers to a structure in which "*otherwise expected material goes missing under some conditions*" (Van Craenenbroeck & Merchant 2013: 701). Some ellipsis constructions arguably involve the deletion of entire phrases. Examples for such cases are sluicing and VP-ellipsis. In VP-ellipsis it is the eponymous VP that is omitted, as in (1.1-a). In sluicing, it has been shown that TP, and everything it contains, is deleted, (1.1-b).

(1.1) a. Mike has written a paper, and Hyunjung has ~~[$_{VP}$ written a paper]~~, too.
b. Irene has submitted something, but I don't know what ~~[$_{TP}$ Irene has submitted *t*]~~.

In other ellipses, it is not so clear that a phrase has been deleted. It seems that the elided material does not form a constituent. Gapping and fragment answers are such so-called non-constituent ellipses. In gapping in (1.2-a), what is deleted is the auxiliary, the lexical verb and an adverb, leaving behind the subject and direct object. In the fragment answer in (1.2-b), everything apart from the direct object has been deleted.

(1.2) a. Christine has already written the paper and Savio ~~has already written~~ the thesis.
b. What has Christine already written? ~~Christine has already written~~ The paper.

Ellipsis of non-constituents has received much attention in the literature since it appears to violate one of the core notions of syntactic theory, i.e., that processes apply to constituents. In general, the standard view of elliptical constructions recognizes that the non-constituency is illusory. The conjunct in which ellipsis takes place exhibits a similar (syntactic) structure as the non-elliptical conjunct (see e.g., Lobeck 1995, Merchant 2001 for evidence of syntactic structure in ellipsis sites). Within this view, there exist two families of implementations, which differ in the presence or absence of syntactic movement in the derivation of ellipsis. The first group pursues an *in-situ* deletion approach. In this approach, the grammar allows for ellipsis, i.e., non-pronunciation, "around" certain elements. Crucially, the syntactic structure of an elliptical clause like (1.3) is identical to that of the non-elliptical counterpart. The only difference lies in the pronunciation of the syntactic structure. Ellipsis is regarded as a form of extreme deaccenting, i.e., the radical removal of any phonological accent from elements, to the extent that they are not pronounced at all.[1] Prominent *in-situ* ellipsis proposals include Rooth (1992a), Tancredi (1992), Chomsky & Lasnik (1993), Wilder (1994, 1997), Hartmann (2000), Reich (2002), Yatabe (2002), Kimura (2007), Féry & Krifka (2008), Abe & Hornstein (2012), Abe & Tancredi (2013), Abe (2015, 2016), Murphy (2016), Ott & Struckmeier (2018), Broekhuis (2018), Griffiths (2019), Griffiths et al. (under revision), Stigliano (to app.) among others.

[1] Small script size indicates extreme deaccenting.

(1.3) Ich hab meiner Mutter versprochen in die Kirche zu gehen und
I have my mother promised in the church to go and
du hast meiner Mutter versprochen zum Bäcker zu gehen.
you have my mother promised to.the bakery to go
"I promised my mother to go to church and you promised her to go to the bakery."

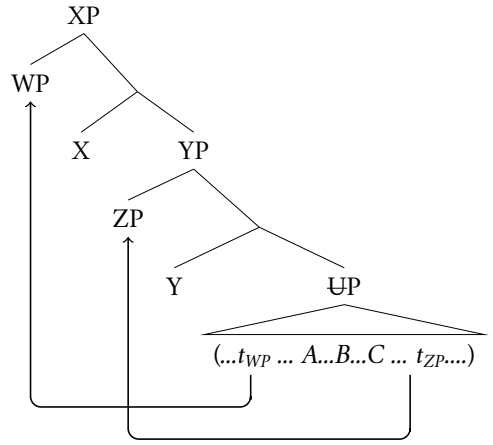
The second group proposes that movement is obligatorily involved in ellipsis constructions. It is called the move-and-delete approach (MDA). In these analyses, the remnants of ellipsis undergo movement to escape the constituent that is subsequently elided, as in (1.4), (1.5).[2]

(1.4) Ich hab meiner Mutter versprochen in die Kirche zu gehen und
I have my mother promised in the church to go and
$[_{CP}$ [du]$_1$ [zum Bäcker zu gehen]$_2$ [t_1 ~~hast~~ ~~meiner~~ ~~Mutter~~
you to.the bakery to go have my mother
~~versprochen~~ t_2]].
promised

(1.5) *Move-and-Delete*

a. XP WP ZP ~~A B C~~

b.



[2] I represent the tails of movement dependencies as traces *t*. However, I do not subscribe to a certain theory of movement. The analysis presented in this thesis is compatible with a copy theory of movement.

In (1.5), what is left unpronounced are the elements A, B, C. Under the MDA, the target of deletion are not A, B, C directly, but UP, a larger constituent containing the deleted material as well as other phrases. These other phrases, WP and ZP, move out of UP to escape ellipsis. Thus, they are pronounced and on the surface it seems that only A, B, and C have been deleted. Crucially, the elliptical structures are syntactically different from their non-elliptical counterparts: In ellipsis, there is movement (of the remnants) where there is none without ellipsis. Analyses in this tradition are e.g., Merchant (2001, 2004), Heck & Müller (2003/2007), Brunetti (2003), Van Craenenbroeck & Lipták (2008), Ince (2009), Nakao (2009), Thoms (2010), Boone (2014), Sailor & Thoms (2014), Döring (2014), Ortega-Santos et al. (2014), Shen (2018), Murphy & Müller (2022).

The focus of this thesis is a type of non-constituent ellipsis that has not received much attention in the literature: so-called *determiner sharing*, see 1.6. I argue that this ellipsis provides an argument for the MDA and against *in-situ* deletion approaches. I show that there is evidence for movement dependencies in determiner sharing in German and that a movement-based analysis makes the right predictions about the distribution and limitations of determiner sharing. To that end, the next section offers an introduction to determiner sharing and the questions it raises, and section 1.2 introduces certain notions of information structure that will play a role. Section 1.3 gives a summary of the analysis I develop, and section 1.4 presents an overview of the remainder of the thesis.

1.1. Determiner sharing and gapping

Determiner sharing is the term given by McCawley (1993) to a construction like (1.6), in which a determiner or quantifier[3] is omitted from a second conjunct in a coordination. The omission of the determiner creates the illusion that the interpretation of the overt determiner in the initial conjunct is *shared* between two nominals. Throughout this thesis, omitted material is represented with a gap ___, and occasionally for illustrative purposes with ~~strikethrough~~.

(1.6) a. %Few dogs like Whiskas and ___ cats ___ Alpo. (Johnson 2000b)

b. %Jede Schülerin spielt Geige und ___ Lehrerin ___ Klavier.
every student plays violin and teacher piano
"Every student plays the violin and every teacher plays the piano."

In English as well as German, the construction is not accepted by all speakers. It is predominantly found in spoken language and rare in written form. Since it is only productive for a subgroup of speakers, the examples in (1.6) are adequately marked with %. I will omit the % diacritic from subsequent examples.

It is not only a quantifier that is missing in (1.6), the verb has also been deleted. This is one of the core puzzles of this ellipsis: curiously, determiner sharing is completely ungrammatical without *gapping* of the verb. If the verb surfaces overtly, deletion of the quantifier becomes impossible in (1.7).

(1.7) *Jede Schülerin spielt Geige und ___ Lehrerin spielt Klavier.
every student plays violin and teacher plays piano

[3] I will use the term *determiner* throughout to refer to elements that are elided in this construction. It is intended as a descriptive term, not an analytical one, since arguably not all of the shared elements are determiners in the sense of D^0-elements.

Gapping refers to a type of ellipsis in which the finite verb or an auxiliary are omitted, possibly along with other material. As is typical for ellipses, the omission is optional, i.e., the sentence would be as grammatical if the missing elements were pronounced. This is illustrated for English in (1.8) and German in (1.9).

(1.8) I ate a muffin and you __ a cookie.

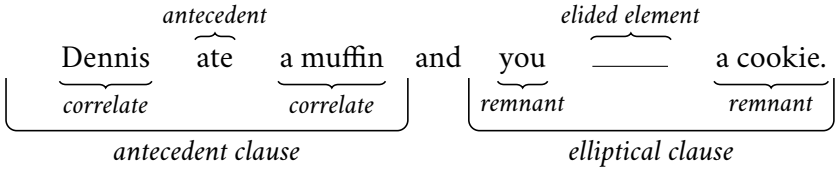
(1.9) Ich hab einen Muffin gegessen und du __ einen Keks __.
I have a muffin eaten and you a cookie
"I ate a muffin and you a cookie."

Gapping and determiner sharing seem to have a special relationship: the former creates the environment in which the latter can occur. Thus, in determiner sharing sentences like 1.6 two seemingly unrelated elements, a finite verb and a determiner, are deleted. However, these elements *are* in a certain relation, in the sense that deletion of the determiner is dependent on deletion of the verb. This is the core problem for an analysis of non-constituent ellipsis: it is unexpected that ellipsis of a determiner is parasitic on ellipsis of a verb even though they do not form a constituent, and that a determiner cannot be deleted by itself even though it is a constituent. The aim of this thesis is to investigate how exactly gapping and determiner sharing interact, how their dependence can be modeled and how certain restrictions of determiner sharing can be accounted for.

It is necessary here to define certain terms in the context of ellipsis: I will refer to the clause where ellipsis occurs as the *elliptical clause* and to the constituent that is deleted in that clause as the *ellipsis site*. The phrases that surface overtly in the elliptical clause are the *remnants* of ellipsis. The elliptical clause thus contains the remnants and the ellipsis site. Each remnant has an information-structural equivalent in the clause that does not exhibit ellipsis, called the *correlate*. The material that corresponds to elided elements in the

clause without ellipsis is called the *antecedent*. These terms are illustrated in (1.10).

(1.10)



Lastly, determiner sharing must be distinguished from the superficially similar [D [N & N]] constructions like (1.11) (e.g., Lamoure 2020, Heycock & Zamparelli 2005).

(1.11) mein Freund und Kollege
my friend and colleague

Determiner sharing differs from DP-internal conjunctions. Determiner sharing involves the coordination of two predicates, and two propositions, which is not the case for [D [N & N]] constructions. With DP-internal coordinations, German only allows singular joint readings, i.e., the nouns in (1.11) have the same reference. In determiner sharing sentences like (1.10), the nouns do not refer to the same individual(s).

1.2. Information structure and movement to the left periphery

Information structure, i.e., the discourse-contextual functions of constituents, has a close relation to the topics discussed in this thesis. The information-structural notions that play a role for determiner sharing and gapping are *focus*, *topic*, and *contrast*. These are independent grammatical notions that can interact with other modules of grammar such as syntax and prosody (e.g., Vallduví 1992, Lambrecht 1994, Choi 1996, Vallduví & Vilkuna 1998, Aboh 2004, Fanselow 2002, Steube & Sudhoff 2010, Neeleman & Vermeulen

2012). *Focused* elements are those that contribute new or informative information (Vallduví 1992). They contrast with elements with old or given information, i.e., information that has already been established in the discourse. Some researchers use the term *topic* to refer to all such old information elements (e.g., Abraham 1986, Webelhuth 1989, Moltmann 1990). In this work, topic refers to only a subset of old information, namely old information that is in some sense *salient* or *prominent*, following Vallduví (1992), Choi (1996), Büring (1997b). Topics and foci can be contrastive or non-contrastive. Chafe (1976), Dik et al. (1981), Rooth (1992b) propose that contrastive focus involves a presupposed set of alternatives. In the same way, topics can contrast with a set of alternatives, which can be either other topics in the discourse or non-prominent background information (e.g., Szabolcsi 1981, Choi 1996).

German has the well known property that one constituent needs to occupy the left periphery and precede the finite verb in verb-second clauses. The position that this constituent inhabits is called the prefield (*Vorfeld*, Höhle 1986) and corresponds to Spec,CP. The movement into the prefield is often called *topicalization* (e.g., Müller & Sternefeld 1993). However, despite its name, topicalization is not tied to information-structural topichood (see e.g., Frey 2004, 2005a,b, 2006, Fanselow 2004a, Féry 2007). It has been shown in English and German that the element undergoing topicalization does not always receive the same information-structural interpretation (e.g., Chafe 1976, Prince 1981, Frey 2005a, Fanselow & Lenertová 2011). Topic and focus can be interpreted *in situ* in German. The clause-initial position can be filled with a topic, a focus or neither (e.g., a high adverb), see (1.12)–1.14. It seems that the prefield-filling movement is completely dissociated from topic/focus interpretation and vice versa (but see Frey 2005a,b, 2006 for a different view).

(1.12) *Tell me something about Ngoc.*

a. [Ich] habe Ngoc gestern getroffen.
I have Ngoc yesterday met
"I have seen Ngoc yesterday." *in situ* topic

b. [Ngoc] hab ich gestern getroffen.
Ngoc have I yesterday met
"I have seen Ngoc yesterday." fronted topic

(1.13) Who did you see yesterday?

a. [Ich] habe Ngoc gestern gesehen.
I have Ngoc yesterday seen
"I have seen Ngoc yesterday." *in situ* focus

b. [Ngoc] hab ich gestern gesehen.
Ngoc have I yesterday seen
"I have seen Ngoc yesterday." fronted focus

(1.14) [Wahrscheinlich] hast du die ganze Packung Kekse gegessen.
probably have you the whole bag cookies eaten
"You have most likely eaten the whole bag of cookies."

Within certain constraints, prefield-filling movement in German can give rise to configurations in which elements in the prefield can be connected to material in vP, and thus be part of a discontinuous phrase. This is known as *split topicalization*, see (1.15). The parts of the discontinuous noun phrase are underlined.

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

b. Frauen haben bislang nur wenige *t* eine Sonate geschrieben.
women have so.far only few a sonata written
"As for women, only a few have written a sonata."

Fanselow and Ćavar (2002: 67, modified)

In comparison to non-split counterparts (1.16), the split sentences seem to leave part of their constituent in the middle field.[4] (1.15) and (1.16) differ only pragmatically, but are semantically identical, i.e., they are subject to the same truth conditions (Van Hoof 1997).

(1.16) a. [Einige Rosen] habe ich dir schon *t* geschenkt.
several roses have I you.DAT already given.as.present
"I have already given you a few roses."

b. [Nur wenige Frauen] haben *t* bislang eine Sonate geschrieben.
only few women have so.far a sonata written
"Only a few women have written a sonata so far."

Split topicalization can create structures in which a bare noun phrase surfaces in the left periphery, leaving a determiner associated with it behind lower in the structure. This movement will play a crucial role in the analysis of determiner sharing developed in this work. The next section gives a preview of the proposal.

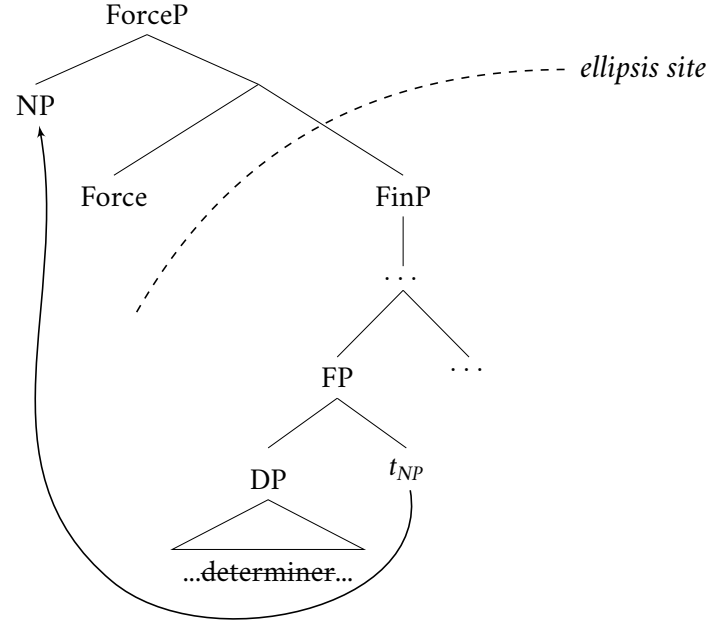
1.3. Summary of the proposal

Determiner sharing in German is the empirical core of this thesis. I propose that determiner sharing structures arise from the combination of two operations: ellipsis and split topicalization. Even though it seems as if only a verb and a determiner are deleted in sentences like 1.6, I argue that the ellipsis site is much larger, and that deletion of the determiner is a by-product of it. The ellipsis site is the constituent that contains both the (finite) verb and the determiner. I propose that this is a clausal functional projection which I call FinP. The phrases that are pronounced overtly (the remnants) move out of

[4]The middle field ("Mittelfeld") in German philology refers to the region of the clause linearly between a verbal element in verb-second position and the verbal element in verb-final position, see e.g., Reis (1980), Höhle (1986) for overviews.

this constituent, leaving behind all the elements that are deleted. If this evacuation movement is split topicalization, which is a type of movement to the prefield that can split off a determiner, the determiner will be among those deleted elements, and the result is a configuration in which a bare noun phrase is one of the remnants, i.e., a determiner sharing structure. This is illustrated in (1.17). I argue that determiner sharing should not be regarded as another construction-specific type of ellipsis, but that it can be reduced to the "conspiracy" of two processes that are already independently established.

(1.17) *The conspiracy of gapping and split topicalization*



split topicalization

With this analysis, I follow the line of research that aims to explain the core problem of non-constituent ellipsis by showing that non-constituency is illusory. I provide evidence for the crucial involvement of movement in the creation of ellipsis.

Furthermore, I show that this conspiracy approach can derive the empirical generalizations about determiner sharing regarding its distribution and limitations about word order. It makes the right predictions about the non-constituency of elided elements. In this way, the analysis of this specific construction can serve as an argument for the move-and-delete approach to ellipsis. This is the theoretical contribution that this thesis aims to make. As far as I know, no previous research has explored German determiner sharing. The empirical contribution of this thesis is the first thorough investigation and formal description of determiner sharing in German. To this end, the following section outlines the organization of the thesis.

1.4. Overview of the dissertation

The thesis consists of two parts. In the empirical part, chapter 2 provides an overview of the literature on determiner sharing to date. In the first part of that chapter, I present a detailed summary of the properties of determiner sharing that have been observed to far in different languages. I highlight differences and commonalities between determiner sharing in English, Spanish, and to some extent Dutch. In the second part of the chapter, I summarize previous analyses of determiner sharing. Most of these analyses are based on a small conjuncts approach to gapping, in which gapping involves coordinations of vPs/VPs. I show how these analyses cannot be applied to determiner sharing in German, since German gapping arguably involves clause-sized conjuncts.

The third chapter is focused on German. I present three acceptability judgment experiments. To preview the results, the experiments show the following: (i) determiner sharing is accepted by a subgroup of speakers, (ii) acceptability of sharing sentences is not influenced by the choice of a universal or an existential quantifier, (iii) determiner sharing is possible in embedded

clauses, specifically in embedded clauses with backward gapping, (iv) determiner sharing possible in stripping (bare argument ellipsis). In the second part of that chapter, 3.2, I give a systematic systematic overview of the properties of determiner sharing in German. I compare German to the languages discussed in the literature and propose five empirical generalizations that any analysis has to account for.

Chapter 4 discusses certain aspects of gapping in German that are relevant to the investigation of determiner sharing. In this chapter I give evidence for (i) the large size of conjuncts involved in German gapping, and (ii) the existence of a movement dependency. I also discuss the left periphery in German and summarize previous research on the target of deletion in gapping. Finally, in 4.4, I examine the special case of gapping in which only an auxiliary verb is deleted and the non-finite lexical verb can surface overtly.

The topic of chapter 5 are split topicalizations. I summarize the literature on split topicalization, giving on overview of its properties and restrictions. In 5.2, I compare the properties of determiner sharing to those of split topicalizations, showing that they are largely parallel.

In the analytical part, chapter 6 develops the analysis of determiner sharing I want to propose. After introducing the theoretical framework in 6.1, section 6.2 presents a step-by-step derivation of determiner sharing sentences. In 6.3, I focus on specific problems, like the identity condition and determiner sharing in object position. 6.4 shows how the analysis can account for the empirical generalizations of determiner sharing. In 6.5, I offer an alternative analysis that is based on syntactic Structure Removal. Section 6.6 concludes the chapter.

In chapter 7, I address the question of exceptional movement, one of the biggest criticisms of a move-and-delete approach. Section 7.1 introduces some empirical problems for a movement-based approach to ellipsis. In section 7.2, I briefly discuss previous accounts of exceptional movement, which are mostly conceived of as repair operations. I outline the problems of a repair

approach in Minimalist syntax, and offer a non-repair account of exceptional movement in 7.3.

Finally, chapter 8 summarizes the findings of this thesis, gives an overview of the main contributions, and offers directions for future research.

2. Background on determiner sharing

This chapter reviews and classifies the literature on determiner sharing. It is divided into an empirical and an analytical part. In the empirical section 2.1, I provide a detailed review of the previously observed properties of determiner sharing in different languages. The following section 2.2 reviews existing analyses of determiner sharing.

2.1. Properties of determiner sharing structures

The purpose of this section is to thoroughly investigate the empirical properties of determiner sharing structures which will provide the benchmark for the analysis proposed in chapter 6. Based on previous research, I propose that two of the properties are the core, defining ones: the dependence on gapping, and the restriction on the position of the shared determiner. These two properties consistently occur cross-linguistically in the languages in which the phenomenon has been examined. They are discussed first, in sections 2.1.1 and 2.1.2. In 2.1.3, I describe the types of elements that can be shared, and how they vary cross-linguistically. Section 2.1.4 gives a summary of other language-specific features of sharing, that are not the focus of this thesis.

Some of the properties of sharing pertain to the general identity condition for ellipsis in coordinations. The ellipsis site requires an antecedent that is sufficiently identical to it. There is no consensus as to the exact nature of this identity. In one view, identity has to hold in certain *syntactic* properties (e.g., Sag 1976, Fiengo & May 1994, Chung et al. 1995, Lasnik 2001, Merchant 2008), while another school of thought proposes that ellipsis is subject to *semantic* identity (e.g., Dalrymple et al. 1991, Hardt 1993, Romero 1998, Merchant 2001, see also section 6.3.2). Some sort of identity is required of the shared determiner. In German, e.g., morpho-phonological mismatches in gender lead to unacceptability, (2.1).

(2.1) *Jed-es Mädchen liebt Tee und ~~jed-er~~ Junge $___V$ Kaffee.
every-NEUT girl loves tea and every-M boy coffee

Additionally, sharing is only possible between identical positions, i.e., between subject and subject or object and object. A determiner may not be shared between the subject of the first conjunct and the object of the second conjunct, (2.2).

(2.2) *Every teacher reads a book and the student $___V$ $___D$ magazine.
intended: *Every teacher reads a book and the student reads every magazine.*

These are the effects that the identity requirement has on sharing specifically. While the formulation of an identity condition is beyond the scope of this work, the correct version of it must be able to account for the observed syntactic and morpho-phonological restrictions (see also discussion in section 6.3.2).

2.1.1. Dependence on gapping

The most intriguing property of determiner sharing is its dependence on gapping. It is restricted to coordinations in which the verb is deleted. As McCawley (1993) describes, it is only possible to omit a determiner or quantifier in a conjunct while retaining its interpretation, if the verb is gapped, (2.3-a). If the verb is overt, the "shared" interpretation is not available. The only possible interpretation of the second subject in (2.3-b) is one of a bare plural.

(2.3) a. Too many Irish setters are named Kelly and $___D$ German shepherds $___V$ Fritz [...].

b. #Too many Irish setters are named Kelly and $___D$ German shepherds are named Fritz [...]. (McCawley 1993:245)

This behavior can also be observed in Spanish (Arregi & Centeno 2005, Centeno 2012), (2.4).

(2.4) a. Muchos hombres ricos llevan chaquetas con agujeros y $___D$
many men rich wear jackets with holes and
hombres povres $___V$ corbatas de seda.
men poor ties of silk

b. #Muchos hombres ricos llevan chaquetas con agujeros y $___D$
many men rich wear jackets with holes and
hombres povres llevan corbatas de seda.
men poor wear ties of silk
"Many rich men wear jackets with holes and many poor men wear silk ties." (*Spanish*, Centeno 2011:106)

Gapping does not only apply in coordinations, but also in comparative contexts, a property that is not often discussed (but see e.g., Lechner 1998, 2004). In such structures, sharing is possible, as well, (2.5).

(2.5) a. Every director has more tattoos than $___D$ actor $___V$ awards.

b. *Every director has more tattoos than ___D actor has awards.

Lin (2002) discovers that the dependence on gapping is more intricate: it is not the whole verb that must be gapped in order to allow sharing, but the tense feature associated with it. In simple gapping, tense is realized on the lexical verb. She observes that with a verbal complex, a non-finite lexical verb may be overt, as long as a tense-bearing auxiliary or modal has been gapped, (2.6-a). The subject in (2.6-b), where no verbal element is deleted, is only interpretable as a bare plural. In (2.6-c), only the infinite lexical verb has been deleted, while the finite auxiliary surfaces overtly, and sharing is impossible.

(2.6) a. The girls will drink whiskey and ___D boys ___AUX drink wine.
b. #The girls will drink whiskey and ___D boys will drink wine.
c. *The girls will drink whiskey and ___D boys will ___V wine.
(Lin 2002:88)

The contrast gets even more pronounced when the overt verbs are non-identical, (2.7).

(2.7) a. The boys will wash the dishes and ___D girls ___AUX mop the floor.
b. #The boys will wash the dishes and ___D girls will mop the floor.
(Lin 2002:89)

Centeno (2012) reports that Spanish sharing behaves similarly, (2.8).

(2.8) Muchos chicos han comido pastel de manzana y ___D chicas
many boys have eaten cake of apple and girls
___AUX degustado helado de vainilla.
tasted ice.cream of vanilla
"Many boys have eaten apple cake and many girls have tasted vanilla ice cream." (*Spanish*, Centeno 2012: 112)

Citko (2006) observes that in Polish, gapping of the verb is not necessary at all. Instead, she argues that non-identical overt verbs are sufficient to license determiner sharing. Gapping only has to apply if the verbs are identical. *"This is the well-known non-distinctness requirement holding of all gapping constructions (Jackendoff 1971)"* (Citko 2006:80). Thus, the argument goes, gapping is not a requirement of determiner sharing *per se*. While this may be true in Polish, English (and German, see 3) definitely does not allow sharing without gapping, even if the verbs are distinct, (2.9).

(2.9) #Few dogs eat Whiskas and $___{D}$ cats enjoy Alpo.

Polish seems to disobey the two core constraints on sharing. There is no dependence on gapping 2.10, and no positional restriction 2.11. For this reason, I believe that the process that Citko (2006) describes in Polish is not comparable to the process that is described in English, Spanish, and German. Polish does not exhibit determiner sharing in the relevant sense.[5]

[5]Korean is another language that has been described as exhibiting determiner sharing (Kim 2015). However, Korean does not seem to show a dependence on gapping. The shared interpretation is possible if a tensed verb is overt (i-b).

(i) a. Manhun sonyen-tul-i capci-lul $___{V}$, $___{D}$ sonye-tul-i sinmwun-ul
many boy-PL-NOM magazine-ACC girl-PL-NOM newspaper-ACC
ilk-ess-ta.
read-PST-DECL
"Many boys read magazines, and many girls read newspapers."
(*Korean*, Kim 2015: 68)

b. Manhun sonyen-tul-i capci-lul ilk-ess-ko, $___{D}$ sonye-tul-i
many boy-PL-NOM magazine-ACC read-PST-and girl-PL-NOM
sinmwun-ul ilk-ess-ta.
newspaper-ACC read-PST-DECL
"Many boys read magazines, and many girls read newspapers."
(*Korean*, Hyunjung Lee, p.c.)

A further complication of sharing in Korean is that the language only allows gapping in the initial conjunct, i.e., the verb is deleted from the first conjunct and seems to surface overtly in the second one. This construction is referred to as *backward* gapping. The quantifier is

(2.10) Mało kotów pije wodę a $___{D}$ psów je tuńczyka.
few cats drink water and dogs eat tuna
"Few cats drink water and few dogs eat tuna." (*Polish*, Citko 2006: 80)

(2.11) Fido zjadł dużo Alpo a Whiskers $___{V}$ $___{D}$ Whiskas.
Fido ate much Alpo and Whiskers Whiskas
"Fido ate much Alpo and Whiskers ate much Whiskas."
(*Polish*, Citko 2006: 81)

In sum, English and Spanish obey the gapping requirement on sharing of determiners. There are two caveats to this generalization: (i) the size of the gap depends on the locus of quantifier deletion (Lin 2002), and (ii) in embedded clauses, determiner sharing is possible without any verbal gapping (Ackema & Szendrői 2002). The following paragraphs explore these caveats.

2.1.1.1. Object determiner sharing

So far we have only talked about examples in which the determiner of a subject has been shared. Lin (2002) observes a contrast between sharing of a subject determiner and sharing of an object determiner with respect to gapping: while deletion of tense is sufficient for subject determiner sharing, the whole verbal complex must be deleted in order to allow object determiner sharing in English, see (2.12) vs. (2.13).

(2.12) Mary will eat the tofu on Monday and $___{AUX}$ $___{V}$ $___{D}$ pizza on Tuesday. (Lin 2002:100)

(2.13) a. *Mary will eat the soup and will eat $___{D}$ hotdog.
b. #Mary will give pizza to the girls and $___{AUX}$ feed tofu to $___{D}$ boys.
(Lin 2002:101)

---

missing from the non-initial conjunct, i.e., the one where the verb is overt. A thorough investigation of sharing in Korean is beyond the scope of this thesis.

(2.13-b) is not a perfect minimal pair to (2.13-a). It involves sharing in an indirect object, and this might be the factor that leads to ungrammaticality, rather than the overt verb. However, we see that Lin's generalization holds if we construct something like (2.14). In 3.2.1 we will see that this generalization does not hold for German.

(2.14) #Mary will eat the tofu on Monday and $___{AUX}$ hand out $___{D}$ pizza on Tuesday.

To sum up, determiner sharing is only available if gapping takes place in the same clause. The size of the gap can vary. At least in English, it varies with the site of sharing, such that a minimal gap, i.e., only the finite element, is sufficient to license sharing of a determiner in subject position, while the whole verbal complex must be deleted to share a determiner in object position.

2.1.1.2. Determiner sharing in embedded clauses

Ackema & Szendrői (2002) find that in embedded CP-coordinations with *wh*-movement, sharing can take place without the deletion of any verbal material. Compare the contrast between the matrix clause (2.15-a) and the embedded clause (2.15-b).

(2.15) a. How many paintings will never be seen [...] and $___{D}$ books (*will) never be read because of wars yet to come?

b. I wonder how many paintings will never be seen [...] and $___{D}$ books will never be read because of wars yet to come.

(Ackema & Szendrői 2002:29)

This is not restricted to subject determiner sharing. Object determiner sharing does not seem to require verbal gapping in embedded clauses either, (2.16).

(2.16) I wonder how many paintings Mary will never see [...] and ___D books Harry will never read [...]. (Ackema & Szendrői 2002:29)

Instead, what seems to be crucial is deletion of the complementizer. Ackema & Szendrői (2002) show this with a variety of Dutch that allows overt complementizers with *wh*-movement, i.e., that does not have an active Doubly-Filled-Comp Filter (Chomsky & Lasnik 1977, see also e.g., Koopman 2000, Baltin 2010, Van Gelderen 2013, Bacskai-Atkari 2020). (2.17) is a baseline sentence of this variety.

(2.17) Ik vroeg me af hoeveel schilderijen (of) ik ooit zou zien
I wonder REFL how.many painting if I ever would see
[...] en hoeveel boeken (of) ik ooit zou lezen.
and how.many books if I ever would read
"I wondered how many painting I would ever see and how many books I would ever read." (*colloquial Dutch*, Ackema & Szendrői 2002:30)

Ackema & Szendrői (2002) that the complementizer *of* must be deleted if the *wh*-word is shared, (2.18). Sharing without deletion of *of* is impossible.

(2.18) Ik vroeg me af hoeveel schilderijen (of) ik ooit zou zien
I wonder REFL how.many painting if I ever would see
[...] en ___D boeken (?*of) ik ooit zou lezen.
and how.many books if I ever would read
"I wondered how many painting I would ever see and how many books I would ever read." (*colloquial Dutch*, Ackema & Szendrői 2002:30)

A contrast like the one between (2.17) and (2.18) cannot be observed in a language with an active Doubly-Filled-Comp Filter like English. In such a language, the complementizer is non-overt in *wh*-movement contexts anyway. Ackema & Szendrői (2002) argue that even though it is not observable in English, the same mechanism is at play in embedded sharing in the language, i.e., the complementizer must be deleted in order to license determiner sharing,

and thus, the generalization that gapping is a necessary condition for sharing can be upheld.

2.1.1.3. Sharing and other ellipses

Lin (2002) notes that it is only gapping that licenses sharing, not any other form of ellipsis. Specifically, she tests sharing in a pseudogapping environment and finds that it is ungrammatical, (2.6-c) repeated as (2.19) (see also McAdams 2012).

(2.19) *The girls will drink whiskey and ___$_D$ boys will ___$_V$ wine.
(Lin 2002:88)

This section investigates whether sharing can be possible in the following elliptical environments: verb phrase ellipsis, null complement anaphora, right node raising, comparative deletion, and stripping/ bare argument ellipsis.

We will first look at verb phrase ellipsis (VPE). VPE involves the omission of a non-finite main predicate, often along with its internal argument(s), in the presence of a suitable antecedent (see e.g., Hankamer & Sag 1976, Zagona 1982, Hardt 1993, Lobeck 1995, Johnson 2001, Van Craenenbroeck 2017). Examples are given in (2.20). The second conjuncts are interpreted as *Kim is sleeping* and *I could see Rihanna*, respectively.

(2.20) a. Susan is sleeping, and Kim is ___, too.
b. Shorty couldn't see Rihanna, but I could ___.
(Van Craenenbroeck 2017)

In (2.21), the elided VP is *use more water*. We try to share the determiner of the subject, and the result is ungrammatical. Sharing seems to be impossible in the context of VP ellipsis.

(2.21) *The rose bush could use more water, and ___$_{D}$ apple tree could ___$_{VP}$ too.

Next, we turn to null complement anaphora. The term null complement anaphora (NCA) refers to structures in which the complete complement of certain verbs (e.g., *know, decide, refuse*) is missing. This complement can be an finite clause, an infinitival phrase, or a PP, but not a DP. According to Hankamer & Sag (1976), NCA (in English) are deep anaphora, i.e., the non-overt constituent is a null proform, and not the result of ellipsis. NCA differ from elliptical structures in that they can take pragmatic antecedents (in contrast to explicit linguistic ones), do not require strict syntactic parallelism to an antecedent, are lexically licensed by certain verbs, and show no internal syntactic structure (see e.g., Depiante 2000, 2001 for NCA in Spanish and Italian, Depiante 2018, Grimshaw 1979 a.o.). Examples for NCA are given in (2.22).

(2.22) a. I asked Bill to leave, but he refused ___.
b. They needed somebody to carry the oats down to the bin, but nobody volunteered ___. (Hankamer & Sag 1976: 411)

Given that NCA in English are not ellipses in the sense that gapping is, we potentially would not even expect sharing to be possible. Indeed, it is not, see (2.23).

(2.23) *Every teacher was going to give up their seat but then ___$_{D}$ student volunteered ___.

We turn to another case which is not unequivocally the result of ellipsis, right node raising (RNR). In RNR structures, a constituent is shared between two (or more) parallel structures and shows up to the right of them, as in (2.24).

(2.24) John bought ___ and Mary broke an expensive Chinese vase.
(Abels 2004: 45)

There are ellipsis analyses of RNR (e.g., Wexler & Culicover 1980, Levine 1985, 2001, Wilder 1997, Hartmann 2000, Abels 2004), as well as across-the-board movement approaches (e.g., Ross 1967, Bresnan 1974, Postal 1974, Sabbagh 2007), and multidominance approaches (e.g., McCawley 1982, Goodall 1987, Moltmann 1992, see also Barros & Vicente 2011). Right node raising does not seem to allow determiner sharing, (2.25).

(2.25) *The girl loves $___{VP}$ and $___{D}$ boy hates drinking iced tea in winter.

What VPE, NCA, and RNR have in common is that they all require an overt finite verbal element in the conjunct from which the determiner is missing. If it is really deletion of tense that is crucial in determiner sharing, this behavior is entirely expected.

To sum up, we have seen that there is a dependence between determiner sharing and gapping, or ellipses related to gapping. The size of the gap can vary and may have implications for the site of the shared determiner (in subject or object DP).

2.1.2. Initial position of the element with the omitted determiner

The second crucial property of determiner sharing is the restriction on the position of the shared element. The shared determiner must be part of the initial constituent in a conjunct, (2.26). I will call this the *first-element generalization* of determiner sharing.

(2.26) a. How many cathedrals are there in Hartford, or $___{D}$ opera houses $___{V}$ in Detroit?

b. *In Hartford, how many cathedrals are there, or in Detroit, $___{D}$ opera houses $___{V}$?

c. Too many films are reviewed by Ebert and $___D$ concerts $___V$ by von Rhein.

d. #Ebert reviews too many films and von Rhein $___V$ $___D$ concerts.

(McCawley 1993:247)

In (2.26-b,d), where the shared determiner position is preceded by another overt constituent, determiner sharing is not possible. In the initial constituent, the determiner must be the first element, (2.27) (McCawley 1993 *et seq.*).

(2.27) a. *In how many states is there a veterinary school or (in) $___D$ cities $___V$ a zoo?

b. ??To how many good students did he give Fs and (to) $___D$ bad students $___V$ As?

(McCawley 1993:246, modified)

According to Centeno (2012) Spanish can violate the first-element generalization under certain conditions. Generally, Spanish sharing has to obey it, (2.28). The object quantifier *demasiados* "too many" cannot be interpreted in the second conjunct because the subject intervenes.

(2.28) #Pedro come demasiados pasteles de manzana y Juan $___V$ $___D$
Pedro eats too.many cakes of apple and Juan
helados de vainilla.
ice.creams of vanilla

(*Spanish*, Centeno 2011:117)

Centeno (2012) argues that only if a verbal complex is gapped, i.e., the lexical verb as well as an auxiliary or modal, can the first-element generalization be violated (2.29).

(2.29) Pedro ha comido demasiados pasteles y Juan $___{AUX}$ $___{V}$ $___{D}$
Pedro has eaten too.many cakes and Juan
helados de vainilla.
ice.creams of vanilla
"Pedro has eaten too many cakes and Juan has eaten too much vanilla ice cream." (*Spanish*, Centeno 2011:107)

This concludes the review of what I deem to be the core, defining properties of determiner sharing. An analysis must account at least for these, i.e., the dependence on gapping, and the first-element generalization. In the following pages, I take a closer look at the shared element itself, and summarize other properties of sharing that have been mentioned in the literature.

2.1.3. Types of shared elements

Not all quantifiers or determiners can be shared. This is a notoriously complicated subject in the literature on sharing. There is no clear typological picture yet. There seems to be a lot of variation between languages, and also between speakers of the same language. As of yet, no generalization has been discovered that accounts for the distribution of determiners. In this thesis, I will not be able to give a definitive answer to the question of which determines can be shared. In 3.1 and 3.2 I will look at some quantifiers in German. As for the cross-linguistic picture, there seems to be a trend that the languages that have been investigated resist sharing of indefinite articles and bare (cardinal) numerals.

McCawley (1993) notes that the indefinite article cannot be shared in English, (2.30). Citko (2006) observes that bare numerals and demonstratives cannot be shared either, (2.31).

(2.30) a. *A soup is too salty and $___{D}$ pie $___{V}$ too sweet but otherwise the food was outstanding.

b. *An Irish setter should be called Kelly and $___D$ German Shepherd $___V$ Fritz. (McCawley 1993:245)

(2.31) a. *Five dogs like Whiskas and $___D$ cats $___V$ Alpo.
b. *That dog likes Whiskas and $___D$ cat $___V$ Alpo.
(Citko 2006:75)

Lin (2000) notices that the elements that can be shared and those the cannot do not fall along the weak/strong divide of determiners. As observed by Milsark (1974, 1977), determiners do not behave homogeneously in different syntactic contexts. For example, only some determiner can appear in a *there*-existential clause, (2.32-a). These determiners are labeled weak determiners. Those that cannot occur in such clauses are called strong determiners, (2.32-b).

(2.32) a. There are some/many/three/no Brits in the garden. *weak*
b. *There are the/every/all/most Brits in the garden. *strong*

There are other syntactic differences between the two groups (see e.g., Barwise & Cooper 1981, Diesing 1992, De Hoop 1992, Ladusaw 1994, McNally 2020). However, the ability to be shared does not belong to that group of differences. Determiners that can be shared in English include both strong ones (*the*, possessive pronouns, *each*, *every*, *most*) and weak ones (*many*, *few*). Arregi & Centeno (2005) give a similar list for Spanish. Johnson (2018) notes that the determiners that can be shared in English roughly correspond to the ones that trigger Quantifier Raising (QR). However, other shareable elements such as possessive pronouns do not.

The only cross-linguistically somewhat robust generalization I can detect is that indefinite articles and bare numerals are elements that cannot be shared in English, Spanish, or German as we will see in 3.2.

McCawley (1993) finds that the shared part needs to be in "determiner position". He shows that in English, adjectives cannot be shared, while possessors can be, (2.33). Furthermore, he shows that postnominal modifiers cannot be shared, (2.33-c).

(2.33) a. Italy's red wines are outstanding and $___{D}$ white wines $___{V}$ excellent.

b. #Italian red wines are outstanding and $___{ADJ}$ white wines $___{V}$ excellent.

c. #Red wines from Italy are outstanding and white wines $___{D}$ $___{V}$ excellent.

While the data for Spanish in Centeno (2012) are not quite conclusive, we will see in section 3.2 that German behaves similarly to English.

2.1.4. Other properties

In this section I will review two other interesting aspects of determiner sharing that have been discussed in the literature on English. First, McCawley (1993) and Lin (2002) investigate a curious reversal of the dependence on gapping. McCawley finds that in certain contexts, determiner sharing makes gapping possible, where it is ungrammatical in the absence of determiner sharing. Specifically, he discusses appositive possessive relative clauses, where sharing of the relative pronoun *whose* enables gapping, as in (2.34).

(2.34) We're looking for the child you told us about,

a. whose brother presented a slide show, and whose sister might give a linguistics talk.

b. *whose brother presented a slide show, and $___{PRO}$ sister might give a linguistics talk. *DS*

c. *whose brother might present a slide show, and whose sister ___MOD give a linguistics talk. *gapping*

d. ?whose brother might present a slide show, and ___PRO sister ___MOD (give) a linguistics talk. *DS + gapping*

(Lin 2002:106)

Gapping is generally not possible in these clauses, as can be seen in (2.34-c). Sharing without gapping is not possible either, see (2.34-b). Only when both the finite verb and the relative pronoun are deleted these sentences become acceptable, (2.34-d). This seems to be a specific property of this specific construction in English.

Second, in the previous literature the relation between the shared element and the conjunction has been discussed extensively. McCawley (1993) observes that sharing can influence the choice of coordinator. Sentences with shared determiners only allow a disjunction, while the non-elliptical counterpart allows both disjunction and conjunction, or even prefers the conjunction, (2.35).

(2.35) a. Not enough linguists study Russian [...] or/??and ___D engineers ___V Japanese.

b. Not enough linguists study Russian [...] and/#or not enough engineers ___V Japanese. (McCawley 1993:247)

In (2.35-a) the disjunction can be interpreted conjunctively under the scope of the negative operator. In propositional logic, this is known as de Morgan's law (see also Lin 2000, Vainikka 1987, Siegel 1984, 1987), see (2.36). (2.36-a), where the disjunction is under the scope of negation, can be interpreted as (2.36-b), but not as (2.36-c). Curiously, without sharing in (2.35-b), this equivalence is not possible anymore.

(2.36) a. Bob can't play chess or Mary ___V checkers.

b. Bob can't play chess and Mary can't play checkers. ($\neg A \wedge \neg B$)
c. #Bob can't play chess, or Mary can't play checkers. ($\neg A \vee \neg B$)
(Lin 2000:277)

While these observations are intriguing, they will not be the focus of this thesis.

In summary, this section has investigated the empirical properties of determiner sharing discussed in the literature. I have identified two core properties that seem to be present in two of the four languages in which sharing has been described (English, Spanish, but not Korean an Polish): (i) sharing is dependent on gapping, and (ii) the shared determiner must be the initial element in the conjunct. While some languages deviate from these restrictions in some cases, they do seem to be the general rules. The table in (2.37) gives an overview of the cross-linguistic picture.[6] The next section presents the analyses that have so far been proposed in the literature that aim to explain these observed properties.

(2.37)

[6] ✓ signifies that the language obeys the constraint, ✗ signifies that the language does not obey the constraint, and **?** signifies that the property has not been discussed in the relevant language.

	English	Spanish	Polish	Korean
General dependence on gapping	✓	✓	✗	✗
↪ gapping of inflected verb for subject-DS	✓	✓	✗	✗
↪ gapping of inflected verb for object-DS	✗	✓[7]	✗	✗
↪ no verbal gapping in embedded clauses	✓	✓	?	?
first-element generalization for subject determiner sharing	✓	?	?	?
first-element generalization for object determiner sharing	✓	✗	✗	?

2.2. Previous analyses

Determiner sharing is an under-researched type of ellipsis. Since its first description (McCawley 1993) there have only been a few investigations and most of the research has focused on English. The analyses in the literature fall into two groups, based on how the authors approach gapping: *small conjunct gapping* analyses and *large conjunct gapping* analyses.[8]

In small conjunct analyses, there is no real deletion of material. Instead, apparently elided elements are actually present in the *shared* part of the structure, above the coordinated phrases. Specifically, the subject and finite verb are not part of the first conjunct but of the higher, shared structure, (2.38). Ellipsis in the second conjunct is only apparent. In these analyses, coordination occurs relatively low in the clause structure, conjoining vPs (based on approaches to gapping by Siegel 1987, Johnson 1996/2004 *et seq*.).

(2.38) Dogs love [[$_{v\text{P}}$ —$_{\text{subj}}$ —$_{\text{v1}}$ Alpo] and [$_{v\text{P}}$ cats —$_{\text{v2}}$ Whiskas]].

The vast majority of determiner sharing analyses falls into this group, see e.g., Johnson (2000a,b), Lin (2000, 2002), Kasai (2007), Kim (2011), McAdams (2012) for English, Arregi & Centeno (2005), Centeno (2012) for Spanish, Kim (2015) for Korean, and Citko (2006) for a small typological study including data from Polish and Korean. Within the small-conjuncts approaches, analyses differ with respect to the means by which they account for the apparent gap in the second conjunct: Johnson (2000a,b), Lin (2002), Arregi & Centeno (2005), Centeno (2012), McAdams (2012) propose a movement account, while Citko (2006), Kasai (2007) argue for a Multidominance analysis.

In large conjunct analyses, there is "real" ellipsis: the conjuncts are complete sentences and material in non-initial conjuncts is elided (based on gap-

[8] I will focus on analyses in the realm of Minimalism, but see e.g., Kubota & Levine (2013) for an analysis in a different framework.

ping approaches by e.g., Neijt 1979, Wilder 1997, Hartmann 2000, Murguia 2004), (2.39). There is only really one analysis of determiner sharing that proposes large conjuncts, Ackema & Szendrői (2002).

(2.39) [$_{CP}$ Dogs love Alpo] and [$_{CP}$ cats ~~love~~ Whiskas].

In this section, I will discuss different small-conjunct approaches and the large-conjunct analysis by Ackema & Szendrői (2002).

2.2.1. Small conjunct gapping analyses

2.2.1.1. Johnson 2000a,b

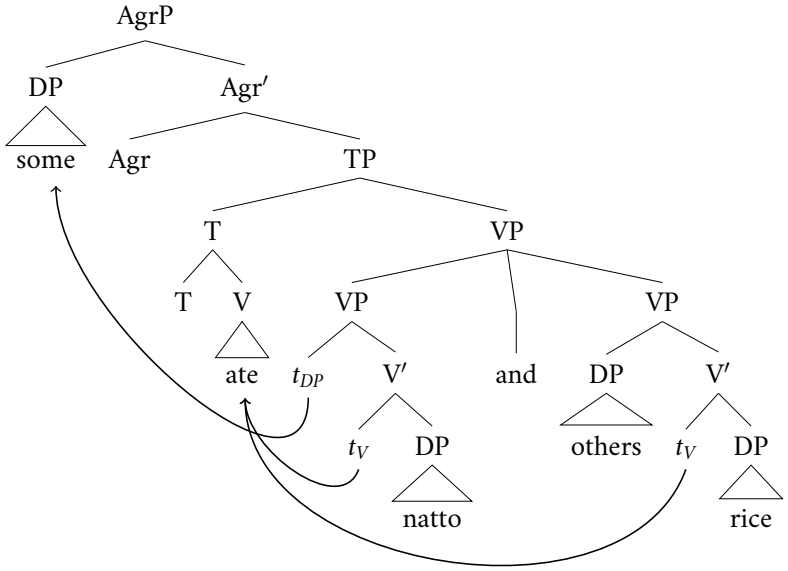
I will give a more detailed summary of the account of determiner sharing by Johnson (2000a,b), as it is the most influential and the basis of many analyses that followed, and give an overview of other analyses.

The analysis of determiner sharing sentences is based on Johnson's approach to gapping (Johnson 1996/2004). He proposes an analysis of gapping in which there is no deletion in non-initial conjuncts, but where apparently deleted elements occur in a position outside of the coordination, in the higher, shared structure of a phrase marker. Gapping, and thereby determiner sharing, involves low coordinations, i.e., vP/VP-sized conjuncts. Gapping of the finite verb is derived by moving both verbs from their respective base positions across the board to T^0, which is projected above the coordination and dominates both conjuncts. The subject of the first conjunct asymmetrically moves out of the coordination to what he calls Spec,AgrP. The subject of the second conjunct remains *in situ*, see (2.40). This derives the surface word order correctly.

(2.40) *Derivation of gapping* (Johnson 2000b)

a. Some ate natto and others rice.

b.



His analysis of determiner sharing involves two projections related to the determiner or quantifier. This assumption is motivated by a dissection of the meaning of these sentences. Johnson focuses on sharing of negative quantifiers and takes up McCawley's (1993) observation that (2.41-a) can be paraphrased as (2.41-b), where a negation takes wide scope over the quantifiers in both conjuncts (see also Gengel 2013). He relates the scope-taking behavior of negative quantifiers like *few* and *no* to quantificational adverbs like *rarely*, (2.42): both show a negation-over-coordination reading.

(2.41) a. Few dogs eat Whiskas or ~~few~~ cats ~~eat~~ Alpo.

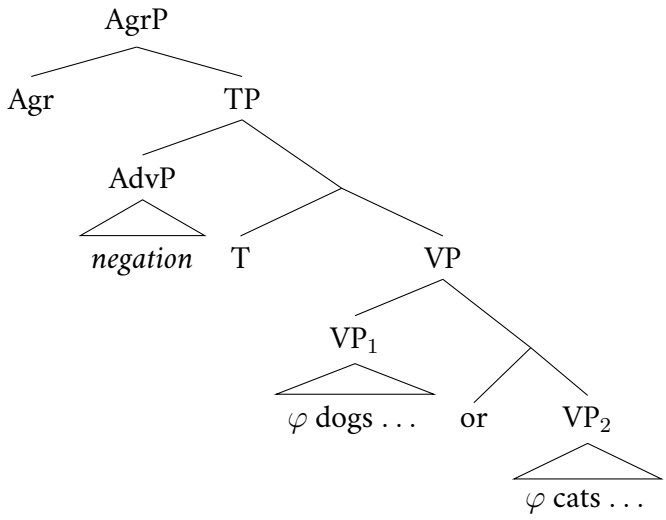
b. It is not the case that [many dogs eat Whiskas or many cats eat Alpo]. (Johnson 2000:75)

(2.42) a. A German shepherd is rarely named Kelly or an Irish setter ~~is rarely named~~ Fritz.

b. It is rarely the case that [a German shepherd is named Kelly or an Irish setter is named Fritz]. (Johnson 2000a:4)

Johnson takes this to indicate that quantifiers can be decomposed into two different parts: a negative part that is base-generated as an adjoined AdvP above the coordination, separated from the noun it will modify, and an indefinite part which forms a constituent with NP and is generated in each conjunct (2.43). These low indefinite determiners, φ ("many") and ψ ("any"), are phonologically null and have to be licensed by being c-commanded by the negative adjunct part, much like Negative Polarity Items (NPIs).

(2.43)



He proposes that negative quantifiers are subject to the restrictions in (2.44).

(2.44) *Interpretation and Spell Out of negative quantifiers*

(Johnson 2000a: 73, modified)

a. φ [and ψ] must be within the c-command domain of [a negative adverb] at LF;

b. [The negative adverb] must be adjoined to a DP headed by φ [or ψ] by Spell Out.

As per (2.44-b), the negative quantifiers can only be spelled out as "few", "no", etc., if their parts are adjacent. To achieve adjacency, the subject-DP of the first conjunct, containing the indefinite part, adjoins to the negative AdvP,[9] thus providing a context for vocabulary item insertion at Spell-Out. In order for (2.44-a) to be met, this adjunction has to be undone and the AdvP as well as the subject-DP must reconstruct into their base positions at LF.[10] This reconstruction derives the scope interpretation in 2.41.

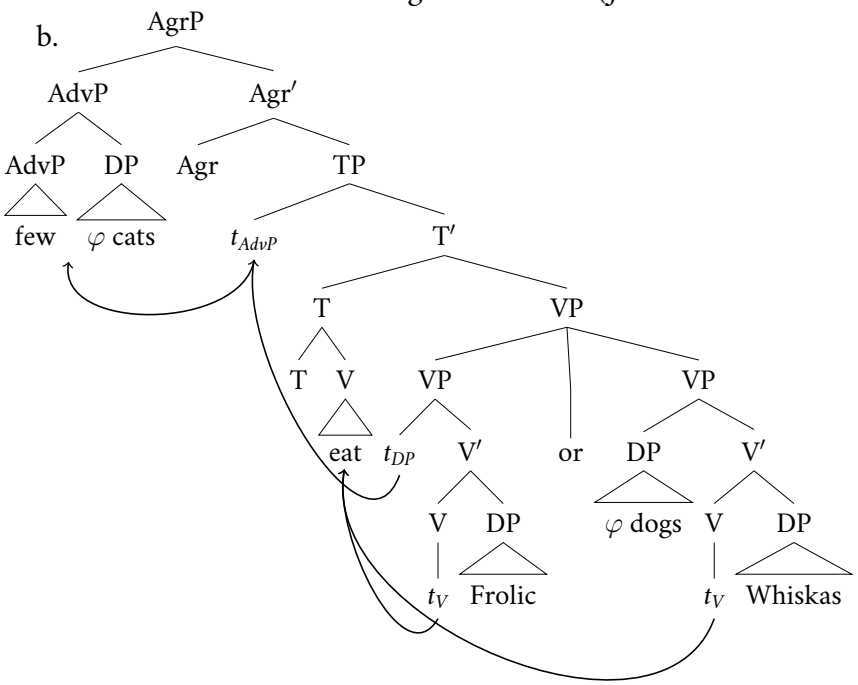
The subject of the second conjunct cannot adjoin to AdvP for reasons not made explicit, and thus can never host an overtly pronounced determiner or quantifier. This creates the illusion of ellipsis in the second conjunct. A sentence like (2.45-a) has the structure in (2.45-b).

[9] Lin (2002) argues extensively that this kind of asymmetric A-movement out of a coordination does not violate the Coordinate Structure Constraint (CSC, Ross 1969). She argues that the constraint is not derivational, but representational and refers to LF. Since A-moved elements obligatorily reconstruct into their base positions, at LF, the constraint is obeyed. Only asymmetric A′-movement, which does not reconstruct, violates the CSC. For a more detailed argumentation see Lin (2002:59–84).

[10] As Lin (2002) points out, Johnson assumes here that the negation in AdvP cannot c-command the indefinite determiner in the second conjunct from its adjoined position in the complex DP. Thus, for the LF-constraint to be obeyed, the overt movements have to be reconstructed.

(2.45) a. Few cats eat Frolic or dogs Whiskas. (Johnson 2000*b*:108f.)

b.



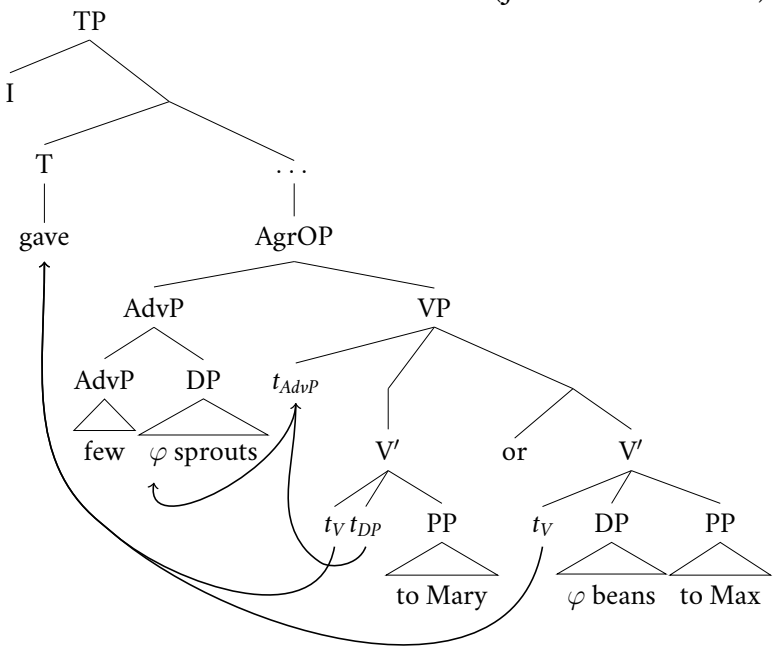
In (2.45), the verbs move across-the-board into T^0, creating the illusion of a gap in the second conjunct. The DP *[φ cats]* is merged in Spec,vP of the first conjunct. This DP moves out of its conjunct, and adjoins to the AdvP, containing the negation, that has been merged in Spec,TP. This movement creates the complex phrase $[_{AdvP}\ [_{AdvP}$ *neg*$]\ [_{DP}\ \varphi$ *cats*$]]$, allowing the two parts of the quantifier to achieve adjacency, and therefore enabling it to be spelled out at PF. The complex AdvP then moves on to Spec,AgrP.

For object determiner sharing, Johnson assumes that the conjuncts are even smaller, namely V′ projections, so that there is only one subject merged in the structure, outside of the coordination. The highest object adjoins to AdvP and moves with it to Spec,AgrOP, while the object of the second conjunct stays *in situ* and is headed by a phonologically null determiner, as in (2.46).

(2.46) a. I gave few sprouts to Mary or beans to Max.

(Johnson 2000*b*:112f.)

b.



The dependence of determiner sharing on gapping is captured by the fact that part of the quantifier is generated right above vP/VP, above the coordination. If the determiner is already situated the shared part of the structure, then T^0 must be in the shared part, too, since it is above the determiner in all cases. Hence, the tensed (part of the) verb must always be shared, giving rise to the illusion that is has been deleted from the second conjunct.

The analysis can account for the fact that the subject cannot be present in the second conjunct in object-determiner sharing sentences by positing that these structures are coordinations of V′s, with only one subject merged outside of the coordination. It can also derive the distinction between (negative) quantifiers and the indefinite article, which can never be shared. The indefinite article is non-quantificational and therefore not associated with a shared position outside of the conjuncts; it is always pronounced with the NP inside of the conjuncts. Furthermore, the analysis derives the meaning of these sen-

tences correctly. However, there are also a few problems with this approach. The shared element has to be initial in its conjunct. Johnson accounts for the fact that a shared object quantifier cannot be preceded by a subject. However, not only subject, but other elements too can block determiner sharing, as in (2.47), which is not captured in the analysis.

(2.47) *In the morning, no boy cleans the floors, and in the evening, ~~no~~ girl ~~cleans~~ the windows.

Another weakness with this account, that Johnson explicitly notes himself, is that it is not clear how it can extend to other determiners or quantifiers. For determiners without a negative or quantificational component, and especially for possessive pronouns and genitive possessors, a decomposition into two distinct projections is not motivated in the same way. It also seems difficult to extend this analysis to more complex cases of sharing, i.e., when more than one determiner is involved, as in (2.48).

(2.48) a. Every single student plays the violin and __ __ teacher $___v$ the piano.

b. Jeder einzelne Schüler spielt Geige und __ __ Lehrer __
every single student plays violin and teacher
Klavier.
piano

Citko (2006) notes that this analysis makes wrong predictions when *wh*-elements are shared: if the *wh*-element is (at least partially) base-generated above the coordination, it should be unable to reconstruct into any of the conjuncts and thus always take wide scope with respect to the coordination. However, this is not the case in Polish *wh*-questions (and their German equivalents), (2.49) and (2.50).

(2.49) a. Ile psy jedzą Alpo a koty Whiskas?
how.much dogs eat Alpo and cats Whiskas
"How much Alpo do dogs eat and how much Whiskas do cats eat?"

b. Psy jedzą dwa funty Alpo dziennie, a koty pół funta
dogs eat two pounds Alpo daily and cats half pound
Whiskas.
Whiskas
"Dogs eat two pounds of Alpo daily and cats eat half a pound of Whiskas daily."

c. #Jeden funt.
one pound

(*Polish*, Citko 2006:84)

(2.50) a. Wie viel Heu fressen Pferde und $___{WH}$ Gras $___{V}$ Kühe?
how much hay eat horses and grass cows
"How much hay do horses eat and how much grass do cows eat?"

b. Pferde fressen 2kg Heu und Kühe $___{V}$ 5kg Gras.
horses eat 2kg hay and cows 5kg grass
"Horses eat two kilograms of hay and cows eat five kilograms of grass."

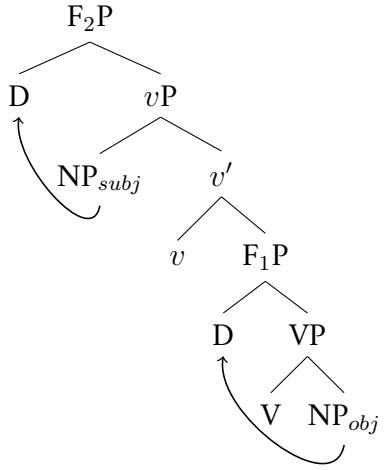
c. #Sieben Kilo.
seven kilogram

The last question concerns the plausibility of Johnson's identification of the negative part of the determiner as an adjunct AdvP. He suggests that it contributes the meaning of clausal negation (Johnson 2000a:75, ex. (28,29)). However, Pollock (1989) shows that clausal negation in English is not an adjunct and therefore not an adverb but a head in IP, see also Repp (2009).

2.2.1.2. Lin (2000), Lin (2002)

Lin adapts Johnson's analysis: she takes over his approach to gapping, with small conjuncts and asymmetric A-movement of the subject out of the first conjunct. Lin (2000) relates Johnson's approach to decomposing determiners to the "DP-Partitioning Hypothesis" proposed by Sportiche (1996) (referred to as "Split DP structure" in later work, e.g., Sportiche 2005). It suggests that determiners are generated separately from NPs, above the verbal projection, based on selectional behavior of verbal predicates: Sportiche (1996) argues that the verb does not select for properties of the DP (such as reference, quantification, number), but rather for proper NPs. This results in a structure like (2.51), where NPs are generated in argument positions and adjoin to a determiner.

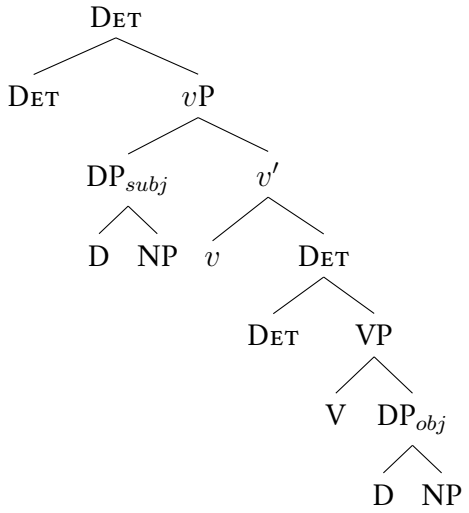
(2.51) *Split DP* (Sportiche 1996, 2005)



While Lin (2000) adopts the DP-Partitioning Hypothesis just as it is, in her dissertation, Lin (2002) refines her account of the separation of determiners, taking the DP-Partitioning Hypothesis as a reference point. She proposes that there are two positions associated with determiners: DP, the topmost phrase in the extended nominal projection (*pace* Sportiche 1996, 2005), and

DET, which is merged above the verbal projection (parallel to Sportiche's DP). The meaning of the determiner is located in the lower one of the determiner projections (DP), while the higher projection (DET) serves solely as a licensor. She proposes that DET can be merged in two positions: above vP to license the determiner of the subject, and above VP to license the determiner of the object, (2.52).

(2.52) *Determiner positions* (Lin 2002: 104f.)



D and DET are subject to the restrictions in (2.53).

(2.53) *Syntax and phonology of determiner positions*
(Lin 2002:104f., based on Johnson 2000a)

a. D must be within the c-command domain of DET at LF.
b. DET must be adjoined to a DP headed by D by Spell-Out.
c. If the DP containing the relevant D head is adjoined to a licensing DET at Spell-Out, it may be spelled out with lexical material; otherwise, it is realized as an unpronounced element.

Lin's (2002) analysis of determiner sharing sentences like (2.54-a) then proceeds as follows: in (2.54-b), a coordination of vPs is generated, in which the DP subjects both contain an unlicensed quantifier *many*. In (2.54-c), DET is merged on top of the coordination. The subject-DP of the first conjunct moves out of it and adjoins to DET. This licenses the quantifier in the subject and also enables it to be spelled out as *many*. The subject of the second conjunct stays *in situ*. In the final steps of the derivation, (2.54-d), the complex DET consisting of the empty DET head and the subject-DP moves to the surface subject position in Spec,TP, and the verbs move across-the-board to T^0. Since the quantifier in the second subject is not adjoined to a DET, it cannot be realized overtly.

(2.54) *Derivation of subject determiner sharing* (Lin 2002)

a. Many boys play checkers and ~~many~~ girls ~~play~~ chess.

b. [$_{\&P}$ [$_{vP}$ *many* boys play checkers] and [$_{vP}$ *many* girls play chess]]

c. [$_{DET}$ DET many boys] [$_{\&P}$ [$_{vP}$ t_{DP} play checkers] and [$_{vP}$ *many* girls play chess]]]

d. [$_{TP}$ [$_{DET}$ DET many boys] play t_{DET} [$_{\&P}$ [$_{vP}$ t_{DP} t_V checkers] and [$_{vP}$ — girls t_V chess]]]

The constraint in (2.53-a) is satisfied by reconstructing the overt A-movement at LF. Constraint (2.53-b) is met by adjoining DP to DET in (2.54-c).

The analysis for object-determiner sharing is parallel, *modulo* the size of conjuncts: VPs are coordinated and DET is merged on top of them, (2.55).

(2.55) *Derivation of object-determiner sharing* (Lin 2000)

a. Mary will eat the pizza on Monday and ~~the~~ tofu on Tuesday.

b. [$_{\&P}$ [$_{VP}$ eat *the* pizza on Monday] and [$_{VP}$ eat *the* tofu on Tuesday]]

VP-coordination

c. [$_{\text{DET}}$ DET [$_{\&P}$ [$_{VP}$ eat *the* pizza on Monday] and [$_{VP}$ eat *the* tofu on Tuesday]]] *Merger of DET*

d. [$_{\text{DET}}$ DET the pizza [$_{\&P}$ [$_{VP}$ eat t_{DP} on Monday] and [$_{VP}$ eat *the* tofu on Tuesday]]] *adjunction*

e. [$_{vP}$ Mary eat [$_{\text{DET}}$ DET the pizza [$_{\&P}$ [$_{VP}$ t_V t_{DP} on Monday] and [$_{VP}$ t_V ___ tofu on Tuesday]]]] *ATB-movement of V*

In this analysis, determiner sharing is analyzed as DET sharing, i.e., sharing of the licensing head between the conjuncts. The analysis accounts for the dependence on gapping and the word order restrictions in the same way as Johnson's. Lin's adjustments solve the problem of *wh*-scope but open up the problem of wide scope of negative quantifiers again. Lin's analysis has the advantage of being more easily generalizable to non-negative quantifiers than Johnson's, however.

Kasai (2007) points out that in this approach, DET is a syntactic category whose only purpose it is to license and spell-out another element. He considers this a conceptual problem. However, since such elements have recently been used in other syntactic areas, not all researchers seem to share his concerns (e.g., Nie 2019, Myler & Mali 2021, Berger in prep.).

2.2.1.3. Arregi & Centeno 2005

Arregi & Centeno (2005) extend Lin's (2002) analysis. Lin's arguments for a low coordination carry over to Spanish. The authors illustrate this with cross-conjunct binding. They keep all of her assumptions, including the Spell-Out rule, and argue on the basis of Spanish that there are even more positions where a licenser of a determiner (DET) can occur in the clausal spine. Lin suggested a position above vP (based on subject determiner sharing) and above VP (based on object determiner sharing). Arregi & Centeno argue that there should be another one above CP, based on sharing of *wh*-elements and

one above what they call AgrOP, a landing position for the object in VOS-sentences like (2.56).

(2.56) a. [$_{\text{TP}}$ Leyó [$_{\text{AgrOP}}$ demasiados libros Juan [$_{\text{VP}}$ —$_{\text{v}}$ —$_{\text{OBJ}}$]]]
read too.many books Juan
"Juan read too many books."

(*Spanish*, Arregi & Centeno 2005:9)

b. [$_{\text{TP}}$ V+v+AgrO+T [$_{\text{AgrOP}}$ object t_{AgrO} [$_{v\text{P}}$ subject t_v [$_{\text{VP}}$ t_V t_{obj}]]]]

The motivation for these two additional positions comes from the availability of determiner sharing: object-determiner sharing is possible in VOS word order in Spanish. Based on the idea that any apparently elided material is actually present in a position outside of the coordination, the shared determiner must be directly above the projection that hosts the fronted object, i.e., AgrOP, (2.57).

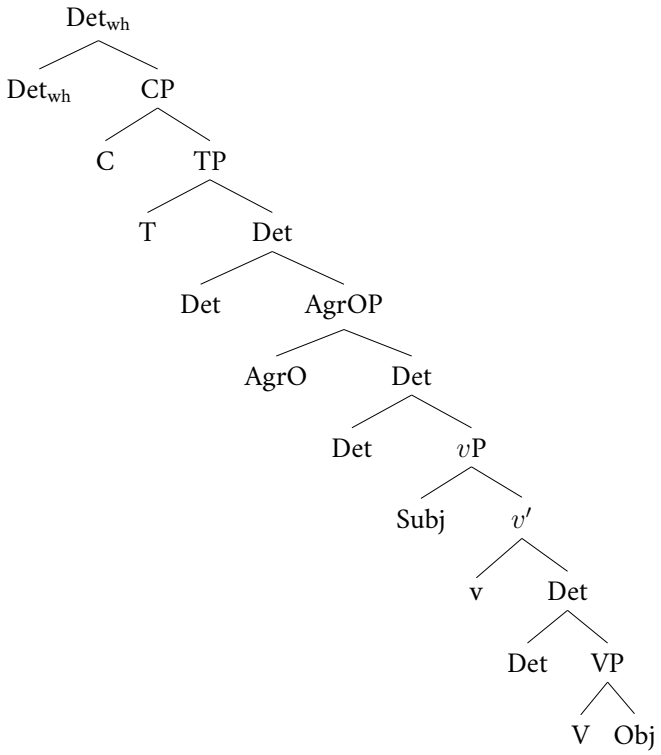
(2.57) a. Ni Juan leyó demasiados libros, ni Pedro
neither Juan read.PST too.many books nor Pedro
revistas.
magazines
"Neither Juan read too many books nor Pedro read too many magazines."

b. neither J. read [too many books + DET [$_{\text{AgrOP}}$ t_{obj} [$_{v\text{P}}$ t_{subj} t_V t_{obj}] & [$_{v\text{P}}$ nor Pedro . . .]]]

The same line of reasoning applies to sharing of *wh*-elements, which the authors argue can occur without gapping of T^0 or V^0 (Arregi & Centeno 2005:10–13). This means that the conjuncts must be at least TP-sized, since overt T^0 elements can occur in both conjuncts. The *wh*-phrase moves to Spec,CP, which makes a projection above CP the position of the licensor for the *wh*-element.

The possible DET positions in Spanish are shown in (2.58). Since this account is an extension of Lin's, it shares the advantages and disadvantages of Lin's.

(2.58)



2.2.1.4. Multidominance accounts (Citko 2006, Kasai 2007)

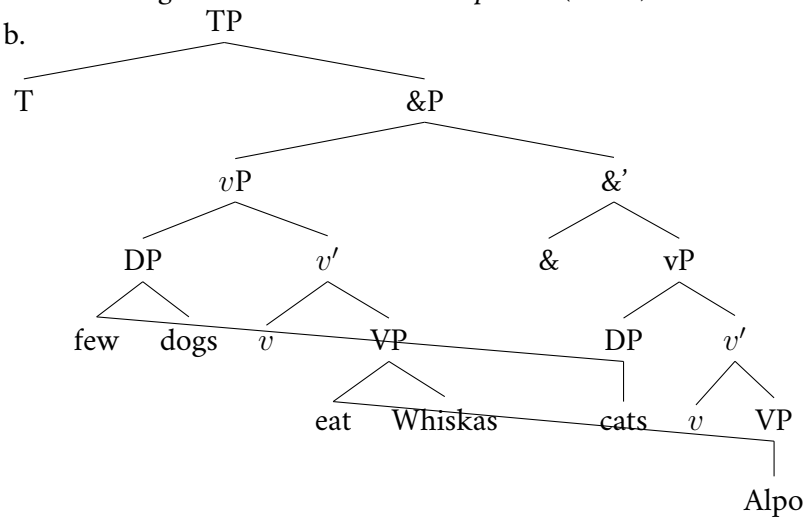
The last variety of small conjunct approaches that I want to discuss here are multidominance accounts. McCawley (1993) already sketched an analysis in which the determiner is literally shared by two DPs, and Citko (2006) and Kasai (2007) develop this idea further.

Citko (2006) bases her analysis on Johnson's (1996/2004*b*) account of gapping. She only departs from Johnson and Lin in abandoning the split DP approach. In her analysis, determiners and quantifiers are base-generated in a

DP which takes NP as its complement. Determiner sharing structures are instances of gapping structures in which only one determiner is parallel merged into all conjuncts. The "elided" verb is multidominated as well. As in Johnson's and Lin's analysis, this approach does not make use of deletion, but creates the illusion of ellipsis by associating one vocabulary item to multiple terminal nodes in the tree. Her analysis also employs asymmetric extraction of the first subject and verb-movement to T^0. She proposes that the DP moves to Spec,TP to satisfy the EPP feature of English, pied-piping the NP. These movements ensure that multidominated structures can be linearized, by creating a c-command relation to the lower copies of moved elements (see Citko 2005). The same logic applies to object determiner sharing structures. The derivation of determiner sharing structures is illustrated in (2.59).

(2.59) a. Mało psów je Whiskas a kotów Alpo.
few dogs eat Whiskas and cats Alpo
"Few dogs eat Whiskas and cats Alpo." (*Polish*, Citko 2006:90)

b.



One advantage of this account over Johnson/Lin-style approaches is that it captures the fact that shared determiners have to match in features, see (2.60).

(2.60) *Fido zobaczył tą/tego kotkę, a Whiskers psa.
Fido saw this.FEM/this.MASC cat.FEM and Whiskers dog.MASC
intended: *"Fido saw this cat and Whiskers saw this dog."*
(*Polish*, Citko 2006:86)

If the determiners are actually a single element, this follows naturally. In Johnson/Lin's approach, nothing ensures that the elements match, though this may follow from a version of a general identity requirement for coordinate ellipsis. However, at least in German determiner sharing, shared elements do not have to match completely. If elements are phonologically syncretic, a feature mismatch is allowed, as in (2.61).

(2.61) a. Kein Hund frisst Heu und ~~kein~~ Pferd —v
no.M dog.M eats hay and no.NEUTR horse.NEUTR
Schinken.
ham
"No dog eats hay and horse ham."

b. *Jed-er Hund frisst Heu und ~~jed-es~~ Pferd —v
every-M dog.M eats hay and every-NEUTR horse.NEUTR
Schinken.
ham

This is not necessarily a problem for Citko's approach. She proposes that a shared constituent can receive conflicting features as long as there exists a syncretic, underspecified form that is compatible with both feature values (Citko 2005), such as in (2.61-a), but not in (2.61-b). A multidominance analysis can also more easily account for sharing of multiple elements than a split DP analysis à la Johnson (2000) and Lin (2000,2002).

A major problem of a multidominance analysis is that it does not explain the dependence between gapping and determiner sharing. Citko develops the analysis with Polish in mind, where admittedly the dependence does not exist, see section 2.1.1, but claims it can extend to English. As far as I can

assess, this account would allow parallel merge of a determiner in subject and object position in a non-coordinated sentences, for instance, which is clearly impossible in English as well as Polish, (2.62).

(2.62) a. #The girls drank $___D$ wine.
b. Dużo psów lubi $___D$ kotów.
many dogs.GEN likes cats.GEN
*"Many dogs like cats in general/*many cats."* (J. Zaleska, p.c.)

This problem is related to another limitation of this account regarding the word order restrictions of determiner sharing. Similarly to the Johnson/Lin approach, Citko's analysis cannot capture the fact that the shared determiner must be the initial element in its conjunct. In this sense, the multidominance account overgeneralizes. A final argument against multidominance approaches comes from the fact that a shared quantifier can bind a pronoun in its conjunct.[11] Consider examples such as (2.63).

(2.63) Jeder$_1$ Lehrer mag seinen$_1$ Schüler und $__$ Schüler, seinen$_2$
every teacher likes their student and student their
Lehrer [~~mag~~ ... ~~jeder$_2$ *t* *t*~~ ...]
teacher likes every
"Every teacher likes their student and every student likes their teacher."

The availability of the bound reading in the second conjunct suggests that a second quantifier must be present but unpronounced.

2.2.2. Large conjunct gapping analyses

The only large-conjunct gapping analysis of determiner sharing I am aware of is the one by Ackema & Szendrői (2002). As the name suggests, the conjuncts in this type of analysis are larger, clause-sized, as in (2.64).

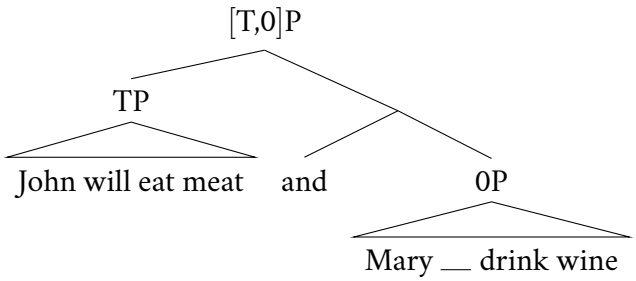
[11] I am grateful to Omer Preminger for suggesting this argument.

(2.64) I think that [$_{IP}$ John will eat meat] and [$_{IP}$ Mary will drink wine].
(Ackema & Szendrői 2002:6)

While the technical details of this analysis remain somewhat implicit, the general idea is this: coordinate ellipsis is regarded as a projection of a doubly-headed structure in which one head is phonologically null. This null head can license ellipsis of its "dependents", i.e., the specifier or complement.

Following the approach to ellipsis in Williams (1997), gapping is analyzed as a non-overt head in a doubly-headed structure. Since gapping obligatorily involves deletion of finiteness, it is the counterpart of T^0 in the second conjunct that is null, (2.65).

(2.65)



In examples like (2.66-b), Williams argues that the presumably base-generated null T-head can license ellipsis of *Mary*.

(2.66) a. John gave Mary a book today and 0_{gave} Sue a record yesterday.
b. John gave Mary a book today and 0_{gave} 0_{Mary} a record yesterday.
c. *John gave Mary a book today and bought 0_{Mary} a record yesterday.

Ackema & Szendrői propose that determiner sharing uses the same mechanism: they call the operation *Dependent Ellipsis*, (2.67).

(2.67) *Dependent Ellipsis* (Ackema & Szendrői 2002: 9)
The Ø head in coordinate ellipsis licenses the heads of its dependents to be Ø.

A sentence like (2.68-a) is derived as follows: the second conjunct is generated with a null (T-)head, (2.68-b). The subject moves into Spec,0P. Here, dependent ellipsis can apply: the subject DP is now a "dependent" of 0 and this null head can turn the head of its dependents null, (2.68-c).

(2.68) *Derivation of subject determiner sharing* (Ackema & Szendrői 2002)

a. The girls will drink whiskey, and ~~the~~ boys ~~will~~ drink wine.

b. [$_{0P}$ 0_{will} [$_{vP}$ the boys [$_{VP}$ drink wine]]]

c. [$_{0P}$ [$_{DP}$ 0_{the} boys] 0_{will} [$_{vP}$ t_{DP} [$_{VP}$ drink wine]]]

As for object determiner sharing, they assume that it involves a coordination headed by [V,0]P, meaning the verbal head of the second conjunct is null and can in turn license ellipsis of the head of one of its dependents, i.e., the object DP.

Dependent ellipsis captures the parasitism of determiner sharing on gapping straightforwardly. D-heads can only be elided when this is licensed by a null T^0 or V^0. It is a very powerful mechanism that is not explicitly restricted in Ackema & Szendrői (2002). There is an implicit assumption that only heads in the extended verbal projection (V, T, C) can enter the derivation as 0^0. The authors do not explicitly discuss what would rule out a sentence like (2.69).

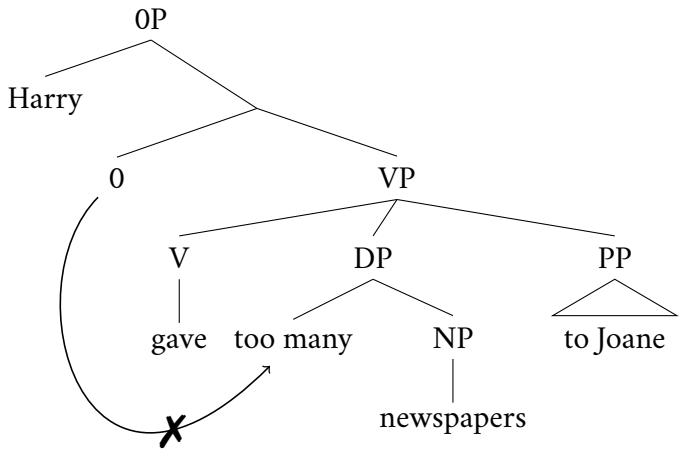
(2.69) *The girls will drink whiskey and 0_{the} boys will drink wine.

With respect to the restriction of conjunct-initial position of the shared determiner, Ackema & Szendrői explicitly discuss the constraint against an overt subject, as in (2.70).

(2.70) a. *Bob gave too many magazines to Jessica and Harry ~~gave too many~~ newspapers to Joanne.
b. *Bob gave too many magazines to Jessica and Harry 0_T 0_V 0_D newspapers to Joanne. (Ackema & Szendrői 2002:18)

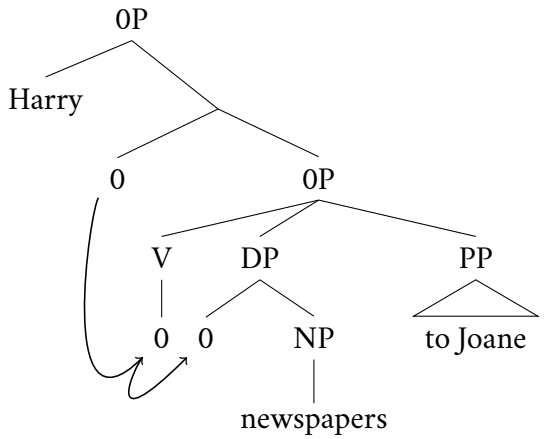
In their analysis, if there is an overt subject (*Harry*) in the second conjunct, the coordinated phrases must be TPs, or rather a [T,0]P. To delete the determiner of the object in (2.70), D^0 would have to be turned null by a null head it is dependent on. On the assumption that the object is a dependent on V, not on T, a [T,0]P coordination could never license deletion of a determiner in the object DP, (2.71).

(2.71) *Illicit Dependent Ellipsis*



Note however, that the verb is also null in (2.70). If 0_T can license 0_V, this in turn could license 0_D in object position, as in (2.72).

(2.72) *Potential transitive application of Dependent Ellipsis*



The authors are aware of that and stipulate that dependent ellipsis cannot apply transitively, and derivation like (2.72) are ruled out by assumption. In other words, Dependent Ellipsis should be defined such that 0 may only license one other head to be null.

Kasai (2007) notes that the analysis makes wrong predictions for determiner sharing in double object constructions. It would predict sentences like (2.73) to be grammatical. The direct object should be a dependent of V and ellipsis of its D^0 should be licensed by 0_V.

(2.73) a. *John gave Mary many apples and ~~gave~~ Susan ~~many~~ oranges.
b. John gave Mary many apples and 0_V Susan 0_D oranges.

The dependent ellipsis analysis cannot account for these sentences, and for cases where the first element in the conjunct is not an argument, but an adjunct. In short, it cannot derive the generalization that the shared determiner must be conjunct-initial.

There are also problems with the stipulation about the non-transitivity of dependent ellipsis: this constraint on the recursivity of dependent ellipsis is at odds with their original motivation for the operation. They quote examples

like (2.74), where there seems to be a snowball effect of ellipsis: one ellipsis can license another dependent element to be elided.

(2.74) a. John wants to decapitate Fred and Bill wants to hamstring Pierre.
b. John wants to decapitate Fred and Bill 0 to hamstring Pierre.
c. John wants to decapitate Fred and Bill 0 0 hamstring Pierre.
d. John wants to decapitate Fred and Bill 0 0 0 Pierre. (Ackema & Szendrői 2002:8)

It cannot be the case that one head licenses all ellipses here. If one head in the chain remains overt, ellipsis of its dependent is ungrammatical, (2.75).

(2.75) a. *John wants to decapitate Fred and Bill wants 0 hamstring Pierre.
b. *John wants to decapitate Fred and Bill 0 to 0 Pierre. (Ackema & Szendrői 2002:8)

Furthermore, in this analysis determiner sharing is not specifically restricted to gapping constructions, but to constructions with a phonologically null head. Since not all null heads, and not even all (potential) ellipsis constructions can license determiner sharing, this analysis overgenerates greatly.[12] In Williams' system, one would have to argue that gapping-null-heads are different from lexically null heads and from other elliptical null heads. Since the authors claim these heads *"lack any inherent features"* (Ackema & Szendrői 2002: 15) it is not clear to me how that could be accomplished.[13]

A further shortcoming of the dependent ellipsis analysis is its wrong prediction regarding SOV languages, as noted by Citko (2006). SOV languages allow so-called backward gapping (Ross 1970, Maling 1972), (2.76).

[12] As shown in section 2.1.1, only certain ellipses can license determiner sharing.

[13] This definition of null heads has more problems. For one, these heads do seem to carry categorial information. This leads to the question of whether they are allomorphs of non-null heads, or if there is a process that turns them into null heads, similar to Dependent Ellipsis, and how that process (and Dependent Ellipsis for that matter) should work in detail.

(2.76) a. SVO & SO *forward gapping*
b. SO & SOV *backward gapping*

In a clausal coordination, a null T/V head in the first conjunct, should only be able to license determiner sharing in the first conjunct. However, as will be explored more in chapter 3, German allows determiner sharing (only) in the non-initial conjunct, even in backward gapping coordinations, (2.77), and thus directly contradicts the predictions by Ackema & Szendrői (2002).

(2.77) Es ist so [dass jede Schülerin Geige $___V$] und [$___D$ Lehrein
it is such that every student violin and teacher
Klavier spielt]
piano plays
"It is the case that every student plays the violin and every teacher plays the piano."

To sum up previous approaches to sharing, we have seen that there exist two groups of analyses, small conjunct and large conjunct approaches. The small conjunct approaches can capture the dependence on gapping very straightforwardly, as well as the different requirements of the size of the gap (T or T+V) depending on the type of argument the determiner is shared in. While the large conjunct analysis can also offer an account for these two points, I believe there are more problems inherent to that approach. Additionally, the small conjunct approaches have the advantage of being more explicit, and therefore appear to be solving more problems, which cannot be easily evaluated in the large conjunct approach. Neither analysis has treated the restrictions for word order (2.1.2) in much detail. For example, the blocking of determiner sharing by adjuncts or topicalized arguments (as in (2.26) above) could not trivially be derived in any analysis.

2.3. Chapter summary

In this chapter, I reviewed the existing literature on determiner sharing. I gave an overview of the properties of these structures and how they are distributed typologically in the admittedly small sample of languages in which determiner sharing has been described. The parasitism on gapping and the word order restriction are properties that are most robustly attested across the language sample. In the second half of this chapter, I reviewed previous analyses. They fall into two categories, small conjunct approaches, in which ellipsis is illusory, and large conjunct approaches which employ an *in situ* mechanism of "real" ellipsis. All in all, it seems that for English and Spanish sharing, the small conjunct approaches are well motivated. However, small conjunct approaches are not applicable to sharing in German. As will be argued in section 4.1, German gapping (and therefore sharing, too) requires a large conjunct approach. Before we turn to the discussion of gapping and the development of an analysis for German, the next chapter presents an in depth exploration of the properties of determiner sharing in German.

3. Determiner sharing in German

As far as I am aware, determiner sharing has never been investigated in German. In this chapter, I aim to lay the descriptive groundwork. In section 3.1, I present three formal acceptability judgment experiments with German speakers. Section 3.2 discusses the properties of determiner sharing in German and systematizes the observations into four empirical generalizations.

3.1. Experiments

In this section I present three acceptability judgment studies on German determiner sharing in different contexts. This is the first experimental investigation of determiner sharing in German. Experiment 1 investigates the general acceptability of determiner sharing, experiment 2 surveys the role of the type of quantifier and the direction of gapping (forward vs. backward), and experiment 3 explores the possibility of determiner sharing in stripping. The main results are the following: the experiments show that there is indeed a group of German speakers that accept determiner sharing, and that it is a robust and productive construction for these speakers (experiment 1). Determiner sharing is possible with both a universal and an existential quantifier (experiment

I am extremely grateful to Michael Frazier for helping me navigate R and for helpful discussions about data analysis.

2, to some extent also 1 and 3). Determiner sharing is possible in forward and backward gapping (experiment 2), as well as stripping (experiment 3).

3.1.1. Experiment 1: Acceptability of determiner sharing

The first experiment was designed to find out if determiner sharing is possible in German. This construction has never been formally investigated in German, and informal introspective judgments suggest that there is a lot of variation between speakers. Additionally, while there are numerous examples of determiner sharing from newspapers in English (e.g., in McCawley 1993), none could be found for German in the DeReKo corpus (Institut für Deutsche Sprache 2018). It is thus not clear if German grammar allows for this kind of ellipsis, and if it is a robust, productive pattern. The experiment was designed to find an answer to this question.

Additionally, this experiment tested two hypotheses about the restrictions of determiner sharing. First, the influence of the direction of gapping was investigated. Languages differ in the location of the verbal gap in a coordination. So called *forward* gapping describes sentences in which the verbal gap is situated in the non-initial conjunct (3.1-a). In *backward* gapping, the gap is in the initial conjunct (3.1-b).

(3.1) a. Es ist so, dass Albert Thunfisch mag und Jette Lachs ___.
it is such that Albert tuna likes and Jette salmon

b. Es ist so, dass Albert Thunfisch ___ und Jette Lachs mag.
it is such that Albert tuna and Jette salmon likes
"It is the case that Albert likes tuna and Jette likes salmon."

In the previous literature determiner sharing in backward gapping contexts was only once briefly discussed by Citko (2006) in Korean, comparing it to the English type. Since German allows both forward and backward gapping in embedded clauses, the (im-)possibility of determiner sharing in these

two conditions can tell us something significant about the dependency between the verbal gap and the determiner gap in the same language. Do the verbal gap and the determiner gap have to co-occur in the same conjunct? If so, this could indicate that verbal gap licenses the determiner gap directly, as proposed by Ackema & Szendrői (2002). Recall that these authors propose that a verbal gap can license additional gaps in the same conjunct by the syntactic operation of Dependent Ellipsis.[14] If the verbal gap and the determiner gap can occur in different conjuncts, the dependence on gapping must be more indirect; verbal deletion does not license determiner deletion (within the same constituent) straightforwardly.

Secondly, previous approaches to determiner sharing could not determine a natural class of quantifiers that uniformly undergoes sharing (see e.g., Arregi & Centeno 2005: fn. 8). The experiment tested whether universal quantifiers behave differently from existential ones in German. If the factor that determines whether a quantifier can be part of a shared structure is the universal/existential divide, we would expect one of these quantifiers to be more acceptable than the other.

3.1.1.1. Participants, material, and design

189 German native speakers from Germany, Austria, and German-speaking Switzerland were recruited for this experiment via Twitter and Facebook. 16 of these 189 participants were excluded because *t*-tests showed that they did not reliably rate the high acceptability fillers differently from the low acceptability fillers. Two more were excluded because they described themselves as

[14] Do note, however, that Ackema & Szendrői (2002) have a special provision for embedded clauses: in embedded contexts, the deletion of the complementizer licenses determiner sharing, and thus in these contexts determiner sharing is somewhat independent of the position of the verbal gap in their system.

not linguistically naive.[15] Thus, the judgments of 171 participants were analyzed. The participants were between 18 and 70 years of age and indicated no history of aphasia. Four of the 171 participants were bilingual. Participants received no payment or course credit for participation.

The critical items were eight sets of sentences arranged in a 2x2 factorial design with the Direction of Gapping (forward vs. backward) and the Type of Quantifier (*jeder* 'every' vs. *irgendein* 'some') as independent factors. The Direction of Gapping factor manipulated the location of the verbal gap in the coordination: in the non-initial conjunct as in (3.2-a,b) (forward), or in the initial conjunct as in (3.2-c,d) (backward). The Type of Quantifier factor manipulated whether a universal (*jeder* (3.2-a,c)) or an existential quantifier (*irgendein* (3.2-b,d)) was deleted. An example of an item is shown in (3.2). Some items were modeled after the items in Anderson (2004).

(3.2) a. [**Jede** Vorspeise] hat die Braut ausgewählt und [__ Nachspeise] __ der Bräutigam.
every starter.ACC has the bride.NOM chosen and dessert.ACC the groom.NOM
"The bride has chosen every starter dish and the groom has chosen every dessert."

b. [**Irgendeine** Vorspeise] hat die Braut ausgewählt und [__ Nachspeise] __ der Bräutigam.
some starter.ACC has the bride.NOM chosen and dessert.ACC the groom.NOM
"The bride has chosen some starter dish and the groom has chosen some dessert."

[15] However, there is tentative evidence that there is no significant difference in the judgments of linguistically trained vs. naive participants, see e.g., Schütze (1996/2016) for an overview, as well as Gervain (2003).

c. Es ist so, dass **jede** Vorspeise Kaviar __ und __ Nachspeise
it is so that every starter.NOM caviar and dessert.NOM
Blattgold enthalten soll.
gold.foil contain should
"It is the case that every starter should contain caviar and every dessert should contain gold foil."

d. Es ist so, dass **irgendeine** Vorspeise Kaviar __ und __
it is so that some starter.NOM caviar and
Nachspeise Blattgold enthalten soll.
dessert gold.foil contain should
"It is the case that every starter should contain caviar and every dessert should contain gold foil."

The test sentences also differed in other respects: in the backward gapping condition, the test clause is introduced by a matrix clause *es ist so*"it is the case". Additionally, the backward condition tested determiner sharing in the subject, while the forward gapping condition tested sharing in the object. Refer to the discussion in 3.1.1.3.

Items were presented in randomized order, and with a short introductory sentence to facilitate object fronting and to accustom the reader to the situation. The experimental items arranged in a Latin square, i.e., they were counterbalanced such that each participant saw every condition, but judged only one lexical version of a sentence type. Experimental items were combined with eight fillers, of which two were predicted to be highly acceptable, three were predicted to be unacceptable (they contained violations of a complex NP island, a *wh*-island, and a violation of morphological rules), and another three were predicted to be of intermediate acceptability. The online platform SoSciSurvey (Leiner 2019) was used to present the stimuli.

Every participant was presented with one instance of an item and all eight fillers, 16 stimuli in total. Participants were asked to judge the naturalness of a sentence on a scale of 1 (unnatural) to 7 (natural). The task description

included examples of a highly acceptable sentence and of a highly unacceptable sentence. It was also recommended that participants read the sentences aloud. The rating scale and the sentences appeared on the same screen.

3.1.1.2. Analysis and results

Responses have been z-score transformed (standardized) to eliminate biases such as scale compression or scale skew. Thus, Likert scale data points can be treated as normally distributed, even though a Likert scale is ordinal. Velleman & Wilkinson (1993) and Stevens (1951) have argued that ordinal scale data analyzed with parametric tests do yield meaningful results.

To answer the question of the acceptability of determiner sharing, the judgments of the determiner sharing sentences were compared with those of the filler sentences. Welch's *t*-test revealed that there is a highly significant difference between determiner sharing sentences and predicted unacceptable filler sentences ($t(1429)=30.1$, $p<0.001$), with determiner sharing sentences receiving higher ratings than these filler sentences. Even the lowest rating for a determiner sharing-sentence is significantly different from unacceptable sentences. Determiner sharing sentences also are not judged as completely acceptable. There is a highly significant difference between completely acceptable filler sentences and determiner sharing sentences (DS, $t(436)=26.6$, $p < 0.001$). Thus, all three types of sentences (predicted acceptable fillers, predicted unacceptable fillers, and determiner sharing sentences) belong to different populations, see figure 1.

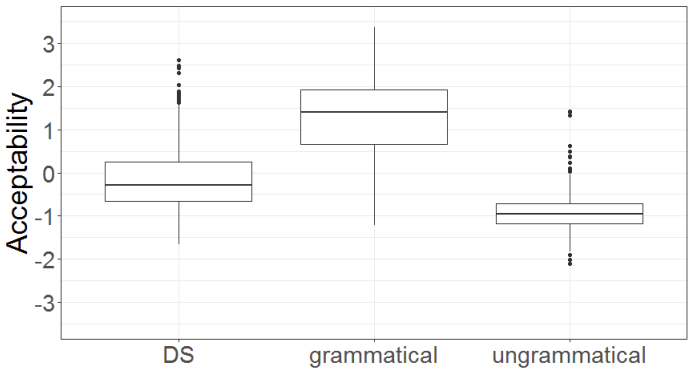


Figure 1.: Acceptability of determiner sharing- and baseline sentences

On this standardized scale, -3 marks complete unacceptability and 3 marks complete acceptability. 69,4% (118 speakers) gave an average rating of <0 for determiner sharing-sentences (lowest average rating: -0.65). 30,6% (52 speakers) gave a rating of 0 or better (highest average rating: 0.57). The mean rating for determiner sharing sentences is -0.15 (median = -0.28, *SD*=0.68). The mean of the sentences with expected high acceptability is 1.28 (median = 1.41, *SD*=0.93), of the expected unacceptable sentences -0.95 (median = -0.96, *SD*=0.43).

The data was then analyzed with linear mixed-effects regression models as is standard for Likert scale data (LMER; Baayen 2008, Baayen et al. 2008, Sprouse et al. 2013) in R version 4.0.2 (R Core Team 2017), using the *lme4* package (Bates et al. 2015). The fixed effects were the type of quantifier and the direction of gapping, as well as their interaction. All models contained random intercepts for participants and items and random slopes for fixed effects where they converged. Model comparisons (ANOVA) were performed to determine whether the inclusion of each of these fixed effects and their interactions made a significant contribution to the model. An alpha level of 0.05 was used for all statistical tests.

The results in table 2 revealed no effect of the type of quantifier. Acceptability ratings for sentences with the universal quantifier *jeder* "every" and sentences with the existential quantifier *irgendein* "some" did not show a significant difference (p=0.23). There was a significant effect of the direction of gapping such that backward gapping sentences were significantly more acceptable than forward gapping ones ($p < 0.001$).

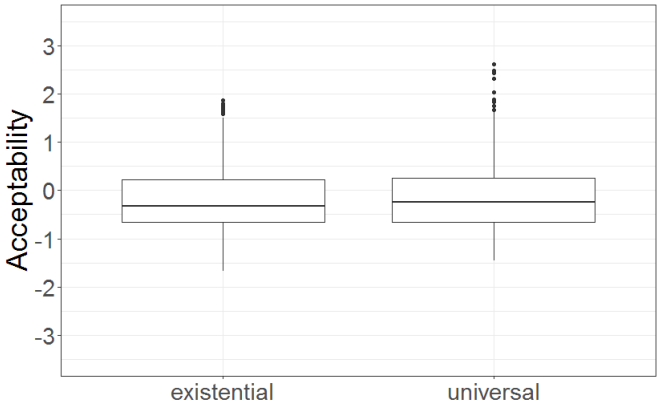


Figure 2.: Influence of quantifier type

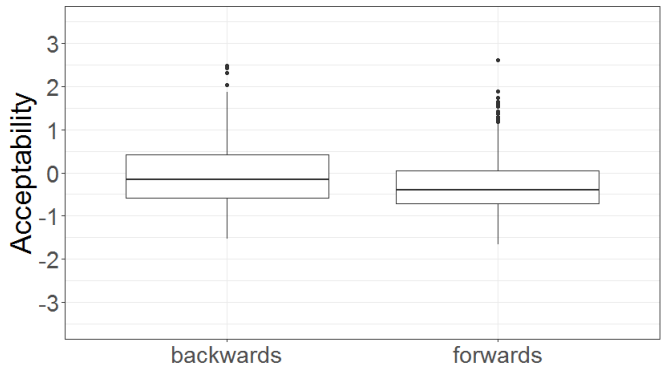


Figure 3.: Influence of direction of gapping

Participants were also asked to place themselves in one of the following dialectal areas (depending on the region in which they grew up, following

Ammon et al. 2004): North-Western German (Bremen, Hamburg, Niedersachsen, Schleswig-Holstein), North-Eastern German (Berlin, Brandenburg, Mecklenburg-Vorp.), West Middle German (Hessen, Rheinland-Pfalz, NRW), East Middle German (Thüringen, Sachsen, Sachsen-Anhalt), Franconian, Bavarian/South East, South West/Alemannic (Baden-Württemberg), Austrian, Swiss. A linear mixed-effects regression model with the dialect as a fixed effect revealed no significant contribution of any dialect.

To investigate variation between speakers, a cluster analysis was performed (see e.g., Gervain 2003 for cluster analyses to detect syntactic microvariation). This method groups together the two most similar objects or previously formed clusters in a stepwise, reiterative fashion. It is important to note that cluster analysis cannot detect *if* there is a certain regularity in the data, rather it operates on the assumption that regularity exists and tells us what that regularity looks like. Therefor the interpretation of a cluster analysis is highly influenced by the decisions that were made in the initial stages (regarding e.g., different measures of similarity, and different mathematical methods of cluster formation). The cluster analysis here was performed on the average judgments of determiner sharing sentences by every speaker (Wardian method). The results show two clear groups: group one consists of 62 speakers (36%) with the highest ratings for determiner sharing on average. The other group contains the speakers who give these sentences lower ratings. There are two subgroups in this group, one of which with the lowest ratings for determiner sharing, the other in an intermediate position. 4 illustrates.

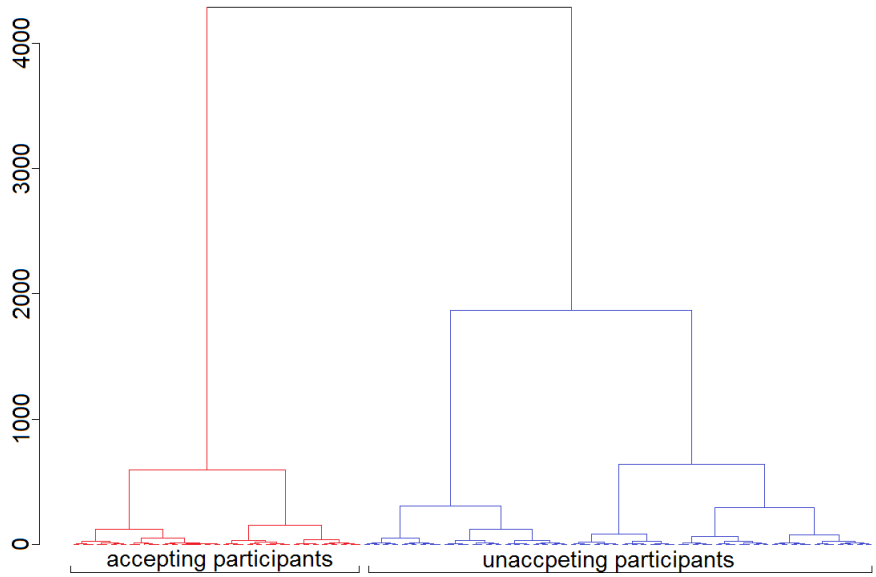


Figure 4.: Clusters of speakers

3.1.1.3. Discussion

The main goal of this experiment was to investigate whether determiner sharing sentences are possible in German. The results show that they are not as unacceptable as the ungrammatical filler sentences, but also not as acceptable and unmarked as the grammatical filler sentences, which can be expected. I take these findings to suggest that determiner sharing is indeed possible, albeit marked. In informal judgment studies, it is sometimes tacitly assumed that relatively low acceptability entails the violation of a grammatical constraint. Low acceptability is interpreted as correlating directly with ungrammaticality. However, quantitative analysis allows us to ask whether the results show an acceptability *effect*, i.e., a significant difference in acceptability between two conditions, regardless of the absolute values on the scale. This kind of approach has been pioneered by Featherston (2005) to demonstrate that German does exhibit Superiority effects, disputing previous claims to the

contrary (e.g., Grewendorf 1988, Müller 1992, Haider 1993, see also Sprouse 2007, Sprouse et al. 2012, 2016, Kush et al. 2018 for similar approaches. The results of this experiment show a similar pattern: there is a significant effect of determiner sharing, such that this class of sentences must be distinguished from the class of sentences that show a violation of a grammatical constraint (and also from the class of grammatical sentences), despite the relatively low absolute values.

The question remains why the overall acceptability is relatively low. First, it is important to note that acceptability does not represent pure grammaticality, i.e., it is not only linguistic competence that influences the rating. Psycholinguistic research has shown that extra-linguistic factors like world knowledge, pragmatic context, word length, word frequency, length of utterance, as well as differences in style or register can influence acceptability (see Schütze 1996/2016 for an overview).[16] For instance, determiner sharing is a colloquial phenomenon and very rare in written language. The experiment was conducted with written prompts, which might influence the participants' ratings. Another extra-linguistic confounding factor is processing. It has been shown that processing difficulty due to increased complexity, e.g., as a result of ellipsis, can lead to decreased acceptability (e.g., Fanselow & Frisch 2006, Sprouse 2008, Kim et al. 2011, Hofmeister et al. 2013). Since the tested sentences contained long coordinations in which the speakers had to keep track of the correlates, and multiple ellipsis sites, the complexity might have crossed the threshold of what some speakers would consider acceptable. Additionally, the grammatical filler sentences contrasted with the test items in that they did not show the same level of complexity, which can be considered a weakness of this experiment. However, it is noteworthy that the violation

[16] It should also be noted that not all of these factors have been controlled for in this experiment. The scene setting sentences should provide a suitable pragmatic context for the target sentence, and items have been designed to be coherent with speakers' world knowledge and similar in register and length. However, word length and frequency have not been controlled for and could introduce noise.

of grammatical rules leads to an even higher decrease in acceptability, as can be seen if we compare determiner sharing sentences with the ungrammatical fillers. Taking all of these points in consideration, I take the results to indicate that determiner sharing is a possible, but marked output of the grammar of German.

A secondary goal was to investigate if the type of quantifier or the direction of gapping have an effect on acceptability. Both tested quantifiers seem to be acceptable. However, one should be cautious to generalize from these results, since prior work on English and Spanish determiner sharing suggests that quantifiers behave highly idiosyncratically (e.g., Arregi & Centeno 2005, Lin 2002), and it is not the case that all universal or all existential quantifiers uniformly allow or disallow sharing. There is reason to believe that this can also be the case in German determiner sharing. One surprising result was the high acceptability of determiner sharing in backward gapping. In this case, the gap of the verb and the gap of the determiner or quantifier are not in the same conjunct; the verbal gap is in the first conjunct, while the determiner is shared in the second conjunct. Previous analyses cannot always trivially derive gaps that are distributed across different conjuncts (see Citko 2006 for discussion). This result strongly suggests that thee can be no direct licensing relation between a deleted verb and a deleted determiner.

However, there was a confounding factor in the design of this experiment: the location of determiner sharing (subject vs. object position). All forward gapping sentences were root clauses in which the object was fronted (for reasons that are relevant to experiment 5 and will be explained below). The determiner of this fronted object was shared in these cases (3.3-a). Backward gapping is only possible in embedded sentences in German (e.g., Maling 1972, Koster 1975), and in embedded contexts, fronting is impossible. Thus, all backward gapping examples involve sharing of a subject determiner (3.3-b).

(3.3) a. Irgendeinen Elefanten hat der Zirkusdirektor reingeführt und
some elephant has the circus.director led.in and
Löwen der Clown.
lion the clown
"The circus director has led in some elephant and the clown has led in some lion."

b. Wir haben gesehen, wie irgendein Elefanten einen Handstand
we have seen how some elephant a handstand
und Löwe ein Salto gemacht hat.
and lion a somersault done has
"We saw how some elephant did a handstand and how some lion did a somersault."

This factor could also influence the increased acceptability of the backward gapping sentences: these examples involve the more natural word order of subject preceding object, whereas in the forward gapping examples, the object is fronted and precedes the subject. Thus, the higher acceptability of backward vs. forward gapping may be due to the more canonical order of arguments, rather than the location of the gap.

In sum, the tested items in (3.3) were not real minimal pairs. To truly test the influence of the direction of gapping, the location of the shared determiner and the type of clause (root vs. embedded) should be kept constant. For this reason, the influence of direction of gapping on the possibility of determiner sharing was again examined in the improved experiment 2.

3.1.2. Experiment 2: Determiner sharing in embedded clauses

The aim of this experiment was primarily to test the influence of the direction of gapping on determiner sharing. Improving on aspects of experiment 1, only the direction of gapping was modified, with the embedding and location of determiner sharing being kept constant throughout all conditions.

A secondary goal of the experiment was to test the hypothesis proposed by Ackema & Szendrői (2002) that it is the deletion of the complementizer in embedded clauses, not deletion of the verb, that licenses determiner sharing. Hartmann (2000) already suggested that gapping in embedded clauses obligatorily involves deletion of the complementizer. The minimal size of a gap thus differs depending on the type of clause: in root clauses, gapping obligatorily minimally involves the finite verb (Hartmann's *Finite First* Condition, see also 4.2), while in embedded clauses, it minimally involves the complementizer.

The prediction is this: if Hartmann and Ackema & Szendrői are right, speakers should reject determiner sharing-sentences in which the complementizer in the second conjunct is overt, and only accept determiner sharing-sentences in which it is deleted, regardless of the position of the verbal gap. If these authors are wrong, and it is really the verbal gap that has to co-occur with the determiner gap in the same conjunct, speakers will reject determiner sharing-sentences with backward gapping, and only accept those with forward gapping.

3.1.2.1. Participants, materials, design

The participants for the experiments 2–5 were 74 German native speakers from Germany, Austria, or Switzerland, aged 18–70. 24 participants were excluded because they have completed less than 50% of the interview. Thus the data from 50 participants were analyzed, most of which completed 100% of the survey. All participants provided informed consent. No participant reported a history of aphasia or language disorders. Participants received no payment or course credit for participation.

The critical items for experiment 2 were four sets of sentences in a 2x2 Latin square design where deletion of the complementizer and direction of gapping (forward, i.e., gap in the non-initial conjunct vs. backward, i.e., gap in the initial conjunct) were manipulated as independent factors. The deletion of

the complementizer factor manipulated whether the target phrase contained an overt complementizer in the second conjunct as in ((3.4-a,c)), or not as in (3.4-b,d). The direction of gapping factor manipulated whether the gap if the verb is contained in the initial conjunct (backward), as in ((3.4-a,b)), or in the non-initial conjunct (forward), as in (3.4-c,d). All sentences included sharing of a universal quantifier (*jeder*, "every") in the subject position of the second conjunct.

(3.4) a. Der Plan ist, dass jeder Elektriker eine Sicherung und dass
the plan is that every electrician a fuse and that
Hausmeister einen Lichtanschluss prüft.
janitor a lighting.outlet checks

b. Der Plan ist, dass jeder Elektriker eine Sicherung und
the plan is that every electrician a fuse and
Hausmeister einen Lichtanschluss prüft.
janitor a lighting.outlet checks

c. Der Plan ist, dass jeder Elektriker eine Sicherung prüft und
the plan is that every electrician a fuse checks and
dass Hausmeister einen Lichtanschluss.
that janitor a lighting.outlet

d. Der Plan ist, dass jeder Elektriker eine Sicherung prüft und
the plan is that every electrician a fuse checks and
Hausmeister einen Lichtanschluss.
janitor a lighting.outlet
"The plan is that every electrician should check a fuse and every janitor should check a lighting outlet."

The items were presented with 12 filler sentences without any ellipsis, and the test items from experiments 3 and 4. Four of the filler items were expected to be unacceptable, four of them were expected to be of high acceptability, and another four were expected to be of intermediate acceptability. The unacceptable sentences contained island and morphological violations.

The online platform SoSciSurvey was used to present the stimuli (Leiner 2019). Four lists were constructed using a Latin square design, each containing one lexicalization of each of the four conditions, for a total of four test items per participant. In combination with 12 filler items, four test items from experiment 3, and four test items from experiment 4, each survey included 24 items. The stimuli were presented in pseudo-randomized order. Each list began with the same filler sentence (one that was expected to be rated high). All stimuli were introduced with a short description of the situation described in the target sentence. Participants were instructed to read the presented scene setting and to rate the naturalness of the target phrase (presented in bold) on a scale of 1 (unnatural) to 7 (natural, *"This is how I would say it"*). Participants also had the possibility not to rate a sentence ("I don't know"). The rating scale and the sentences appeared on the same screen.

3.1.2.2. Analysis and results

The judgments were z-score transformed. The data was then analyzed with a linear mixed-effects regression model (LMER; Baayen et al. 2008) in R version 4.0.2 (R Core Team 2017), using the *lme4* package (Bates et al. 2015). The model contained the presence of the complementizer and the direction of gapping as fixed effects. Random intercepts for participants and items were added. Model comparisons (ANOVA) were used to detect any significant contribution of the fixed effects.

A main effect of the presence of the complementizer was observed such that items *without* an overt complementizer in the second conjunct were rated higher than sentences with an overt complementizer ($p < 0.05$). The direction of gapping had no significant effect on the acceptability of determiner sharing in embedded clauses (p=0.9). The interaction of both fixed effects showed no significant contribution to the model.

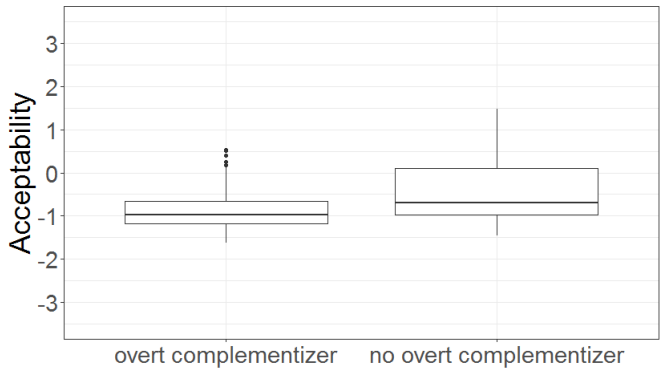


Figure 5.: Influence of the overt complementizer in the second conjunct

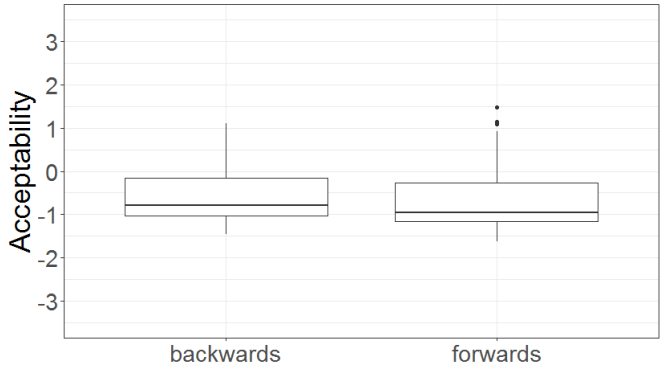


Figure 6.: Influence of the direction of gapping

3.1.2.3. Discussion

The results confirmed that determiner sharing is acceptable in backward gapping contexts, i.e., the gap of the verb and of the determiner need not be in the same conjunct. The direction of gapping has no influence on the acceptability of determiner sharing. Instead, what is crucial is the deletion of the complementizer. Only if the complementizer is deleted in the same conjunct in which the determiner or quantifier is shared, is sharing possible. If it is

really deletion of the complementizer that makes determiner sharing possible, then it is expected that the direction of verbal gapping should not play a role. These results strongly suggest that Hartmann's (2000) observation that gapping in embedded clauses is "larger" than in root clauses, i.e., that gapping in root clauses only obligatorily involves the finite verb, while in embedded clauses it obligatorily involves the complementizer, is on the right track.

3.1.3. Experiment 3: Stripping and determiner sharing

This experiment was designed to find out if determiner sharing can be licensed not only by gapping, but also by stripping in German. Stripping or Bare Argument Ellipsis is characterized as a kind of clausal ellipsis in which a full antecedent clause is coordinated with only one DP or PP remnant and a focus particle (e.g., only, also, even, too, etc.), modal adverb (e.g., always, possibly, etc.), or polarity marker (e.g., not), (3.5) (see e.g., Hankamer & Sag 1976, Bosque 1984, Reinhart 1991, Fukaya & Hoji 1999, Depiante 2000, Merchant 2004, Nakao 2009, Ortega-Santos et al. 2014, Yoshida et al. 2015).[17]

(3.5) Jan hat einen Burger gegessen, und Maria auch.
Jan has a burger eaten and Maria too
"Jan has eaten a burger and Maria has eaten a burger, too."

As first observed by Michael Frazier (p.c.), in English stripping might also be a possible environment for determiner sharing, (3.6).

(3.6) I know how many boys were there, but not __ girls.

[17] Note however that stripping can also occur as an independent utterance in a dialogue as in (i).

(i) a. Mary sent a text to Bill.
b. Right, not to David. (Yoshida et al. 2019)

This experiment aims to investigate whether this is also possible in German.

Many analyses of stripping are similar to the analysis of gapping that is presented here: in the elliptical conjunct, the remnant moves to a position in the left periphery, and the clausal structure that follows that position is elided (e.g., Depiante 2000, Merchant 2004, Kolokonte 2008, Nakao 2009, Algryani 2012, Ortega-Santos et al. 2014, Yoshida et al. 2015 among many others). If stripping and gapping are so similar, it would be interesting to see if they behave alike in their relationship with determiner sharing, as well.

If stripping is in fact a variety of gapping, I predict that determiner sharing should be as acceptable in stripping sentences as it is in gapping sentences. Similarly to experiment 1, it will be investigated whether the type of quantifier has an influence on the acceptability of determiner sharing, if it is possible.

3.1.3.1. Participants, materials, design

The participants are identical to the ones in experiment 2. The critical items were 4 sets of sentences in which the type of quantifier and the presence of determiner sharing were manipulated as independent factors. All sentences showed stripping, and could additionally exhibit determiner sharing (3.7-a,c), or no determiner sharing (3.7-b,d). The quantifier was either universal (*jeder*, "every") (3.7-a,b), or existential (*mindestens ein*, "at least one") (3.7-c,d).

(3.7) a. Sie kennt jede Orchideenart, und Rosenart auch.
she knows every orchid.species and rose.species too

b. Sie kennt jede Orchideenart, und jede Rosenart auch.
she knows every orchid.species and every rose.species too

c. Sie kennt mindestens eine Orchideenart, und Rosenart auch.
she knows at.least one orchid.species and rose.species too

d. Sie kennt mindestens eine Orchideenart, und mindestens
she knows at.least one orchid.species and at.least
eine Rosenart auch.
one rose.species too
"She knows every/at least one species of orchid, and every/at least one species of rose too."

The procedure was similar to experiment 2. As described above in 3.1.2, the stimuli were presented along with 12 filler sentences, and the critical items from experiments 2 and 3 in pseudo-randomized order. Participants were asked to rate the naturalness of all sentences on a scale of 1 – 7. The stimuli were introduced by a short scene-setting sentence. This sentence, the target sentence, and the scale all appeared on the same screen.

3.1.3.2. Analysis and results

The method of analysis is similar to experiment 2. The z-score transformed judgments were analyzed with a linear mixed-effect regression model which included the type of quantifier and the presence of determiner sharing as fixed effects. The *lmerTest* package (Kuznetsova et al. 2017) was used to obtain *p*-values. These were then confirmed by model comparison, as in the experiments above.

There was a main effect of the presence of the determiner such that the sentences without determiner sharing were rated higher than those with determiner sharing (p=0.03). Similarly to the results above, the type of quantifier had no significant effect (p=0.5).

The stripping sentences with determiner sharing were compared to the gapping sentences with determiner sharing (test items from experiment 2, only those in which the complementizer in the second conjunct is deleted). This is to determine whether determiner sharing in stripping is equally acceptable as determiner sharing in gapping. Welch's *t*-test revealed that these

two sets of sentences do not belong to the same population ($t(199)$=-1.79, p = 0.075). The stripping sentences were rated more acceptable (M_{gap} = -0.41, SD =0.73, M_{strip}=-0.22, SD= 0.71). This suggests that determiner sharing in stripping is possible.

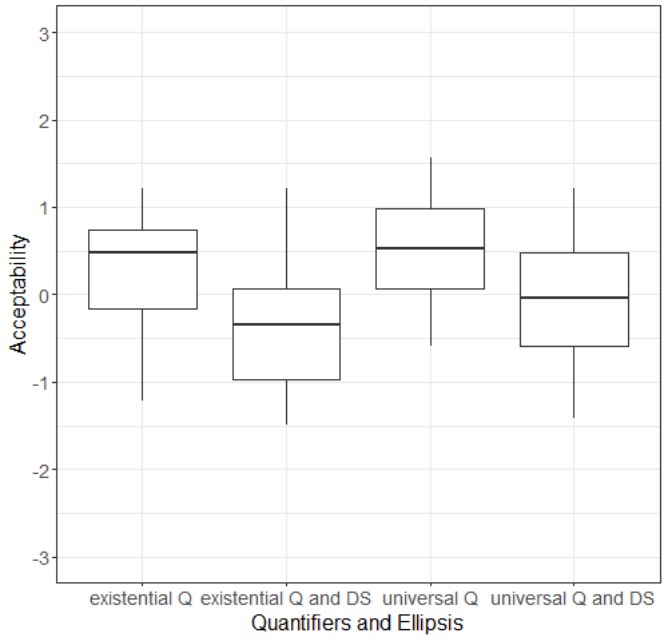


Figure 7.: Acceptability of determiner sharing in stripping

3.1.3.3. Discussion

These results strongly suggest that determiner sharing is possible with stripping, as well as with gapping. Determiner sharing-stripping sentences even seem to be more acceptable than the tested gapping sentences. This is somewhat expected, since the stripping sentences were significantly shorter and less complex with fewer remnants. The type of shared quantifier does not influence acceptability. Both the tested universal and the tested existential

quantifier are equally acceptable. This is coherent with the observations made about determiner sharing in experiments 1 and 2.

3.1.4. General discussion and conclusion

This section was concerned with three experimental investigations of German determiner sharing. The most significant finding of these is the general acceptability of determiner sharing. The results support the view that determiner sharing structures are a possible and productive output of the grammar of German, and that the investigation into which specific rules generate that output, i.e., the remaining part of this dissertation, is warranted. The two other major findings concern the type of quantifier in determiner sharing and the relevance of gapping. First, the tested universal quantifier *jeder* "every" and the tested existential quantifier *irgendein* "some" showed no influence on acceptability judgments. Both quantifiers were similarly acceptable. This result implies that the type of quantifier (existential vs. universal) does not determine whether a quantifier can be part of a shared structure. Second, two new environments in which determiner sharing is possible have been discovered. The experiments suggest that determiner sharing is not only possible in forward gapping in German, but also in backward gapping, as well as stripping. Determiner sharing in backward gapping contexts poses problems for many previous analyses. It seems that in embedded contexts the deletion of the determiner or quantifier is independent of the deletion of the verb in the same conjunct. Rather, this results supports the view by Ackema & Szendrői (2002) that the projection that hosts the complementizer (and in Germanic V2 languages also the finite verb) has to be deleted to make determiner sharing possible. This will give support to the analysis of gapping I propose in chapter 4. The fact that stripping can license determiner sharing suggests that approaches that analyze stripping as a variant of gapping are on the right track.

These studies have gone some way towards extending our knowledge of determiner sharing. We have discovered a new environment in which determiner sharing can occur, stripping. We explored the relation between determiner sharing and the direction of gapping in some more detail. We found confirmation that the universal vs. existential property of quantifiers does not play a role in the acceptability of determiner sharing.

Finally, a number of limitations of these experiments need to be considered. As mentioned in the discussion above, the fillers and the test items were not always perfect minimal pairs, which lead to questions about the interpretation of the results. The experiments only tested two quantifiers since the investigation of the natural class of quantifiers that can undergo sharing was not the central question of the experiments. Using only two determiners allowed the experiments to be more comparable and reduced their duration, preventing fatigue in the participants. Further studies on the types of quantifiers that can be shared are desirable. Lastly, Likert scales have been criticized for not being able to detect fine-grained distinctions, which e.g., magnitude estimation tests can detect (see e.g., Bard et al. 1996, Keller 2000, Featherston 2005). However, other researchers argue that the two methods are equally sensitive (Weskott & Fanselow 2009, 2011, see also Marty et al. 2020).

3.2. Properties of German determiner sharing

Based on the general observations about determiner sharing in 3.1, this section aims to give a thorough systematic overview of the properties of determiner sharing in German that any analysis needs to account for. We will see that determiner sharing in German is subject to the generalizations in (3.8). In addition to the properties that have been discussed in the previous literature, I propose two new generalizations, (3.8-d) and (3.8-e). The ellipsis generalization (3.8-a) will be revised in 6.4.

(3.8) *Determiner sharing generalizations* (to be revised)

a. The ellipsis generalization: determiner sharing is only possible in gapping contexts.

b. The complementizer generalization: in embedded clauses, determiner sharing does not require deletion of the verb, but instead of the complementizer.

c. The first-element generalization: the element with the omitted determiner must be the first constituent of the conjunct.

d. The no-constituents generalization: if more than a single determiner is shared, the deleted elements need not form a constituent.

e. The no-low-elements generalization: elements that occupy a low position in the nominal spine cannot be shared.

In the following, each generalization will be discussed in detail.

3.2.1. The ellipsis generalization

German determiner sharing is subject to the familiar gapping requirement. Sharing is only licit if the verb is gapped, as in (3.9-a). Sentences without gapping like (3.9-b) can only receive a bare plural interpretation.

(3.9) a. Zu viele Setter heißen Kelly und $___D$ Schäferhunde
too many setters are.called Kelly and German.shepherds
$___V$ Fritz.
Fritz

b. #Zu viele Setter heißen Kelly und $___D$ Schäferhunde
too many setters are.called Kelly and German.shepherds
heißen Fritz.
are.called Fritz

For the moment, the characterization of determiner sharing being dependent on gapping suffices for our purposes. After the discussion of gapping in chapter 4, I will rephrase the ellipsis generalization in 6.4.

German also behaves like English rather than Polish in that gapping is a necessary requirement of determiner sharing, and non-identical verbs alone cannot license sharing (3.10).

(3.10) *Jede Lehrerin spielt Klavier und $__{}_{D}$ Schülerin übt Geige.
every teacher plays piano and student practices violin

We have seen that English has different requirements on subject and object determiner sharing: subject sharing only requires the minimal gap, i.e., deletion of the part with finiteness information, while object sharing requires deletion of the whole verbal complex. German differs from English in this respect. In German object determiner sharing, the non-finite verb may surface overtly (3.11).

(3.11) Er hat jedem Schüler ein Buch gegeben und $__{}_{AUX}$ $__{}_{D}$
he has every student.DAT a book.ACC given and
Lehrer ein Heft (ausgehändigt).
teacher.DAT a folder.ACC handed.out
"He has given a book to every student and handed out a folder to every teacher."

Thus, the requirements on determiner sharing are exactly the same for subject and object determiners in German. Only gapping of the finite verb is a necessary condition for sharing.

3.2.2. The complementizer generalization

On first glance, determiner sharing does not seem to be dependent on gapping in embedded clauses. With respect to sharing in an embedded environ-

ment, German shows the same contrast as Dutch and English: no verbal material needs to be deleted in embedded clauses to license determiner sharing in them, as in (3.12). For reasons orthogonal to sharing, acceptability increases when the verbs in both conjuncts contrast.

(3.12) a. Wie viele Mädchen spielen Volleyball und $___D$ Jungs
how many girls play volleyball and boys
(*spielen) Basketball?
play basketball
"How many girls play volleyball and how many boys play basketball?"

b. Ich weiß nicht, wie viele Mädchen Volleyball spielen und
I know not how many girls volleyball play and
$___D$ Jungs Basketball üben.
boys basketball practice
"I don't know how many girls play volleyball and how many boys practice basketball."

However, we will see that sharing *is* dependent on ellipsis in embedded clauses, and that that ellipsis can argued to be gapping. Ackema & Szendrői (2002) propose that no verbal material, but rather a (null) complementizer needs to be deleted to license sharing. For verb-second languages like Dutch and German, this makes a lot of sense. Gapping in general cannot apply in embedded clauses across an overt complementizer (e.g., Hendriks 1995, Hartmann 2000, Lechner 2018), 3.13.

(3.13) a. *Ich glaube, [$_{CP}$ dass Peter mit seiner Frau nach Indien reist]
I believe that Peter with his wife to India travels
und [$_{CP}$ dass Martin mit seinen Kollegen in die
and that Martin with his colleagues in the
Schweiz $___V$]
Switzerland

b. Ich glaube, [$_{CP}$ dass Peter mit seiner Frau nach Indien reist]
I believe that Peter with his wife to India travels
und [$_{CP}$ —$_{c}$ Martin mit seinen Kollegen in die
and that Martin with his colleagues in the
Schweiz (fährt)]
Switzerland goes
"I believe that Peter will travel with his wife to India and that Martin will travel with his colleagues to Switzerland." (Hartmann 2000:158)

Note that (3.13) really involves gapping between two embedded CPs. Gapping can generally not apply across clause boundaries, as in (3.14).

(3.14) *[Herr Meyer glaubt [dass Peter mit seiner Frau nach Indien
Mr Meyer believes that Peter with his wife to India
reist]] und [Herr Pin ~~glaubt~~ [~~dass~~ Martin mit seinen Kollegen
travels and Mr Pin believes that Martin with his colleagues
in die Schweiz ~~reist~~]].
to the Switzerland travels
(Repp 2009:209)

The verb cannot be deleted if there is an overt complementizer. This observation has been formalized as the Head Condition by Wilder (1994, 1996), see (3.16).[18]

(3.15) *Head Condition* (Wilder 1994:314, 1996:165)
Forward-deleted material may not be c-commanded by an overt (non-deleted) head.

[18]Forward deletion can be understood as gapping in 3.15. The term refers to a directionality constraint by Ross (1970), which states that so-called left-branch elements, which are verbs, but also preverbal adverbs and subjects, delete *forward*, i.e., they leave a gap in a non-initial conjunct, and right-branch elements like objects and adverbs delete *backward*, i.e., they leave a gap in the initial conjunct.

Put another way, gapping in embedded clauses must minimally target the complementizer. Just as the minimal gap in root clauses consists of the finite verb or auxiliary (what has been dubbed the Finite First Condition by Hartmann 2000), in embedded clauses the minimal gap is the complementizer. Section 4.2 will elaborate how these two elements can be unified in an articulate left periphery, in the head of FinP, and how we can thus maintain the generalization that determiner sharing is always dependent on gapping, without exceptions.

3.2.3. The first-element generalization

German determiner sharing is subject to the same positional restriction as English (McCawley 1993): the nominal in which the determiner is shared must be the first constituent in the second conjunct, as in (3.16-a). In (3.16-b), where the direct object is fronted and occupies the initial position, sharing of the determiner *viele* "many" in the subject of the second conjunct becomes impossible.

(3.16) a. Viele Kollegen haben Petra Pralinen geschenkt, und [$___D$ many colleagues have Petra chocolates given and Freunde] [Blumen].
friends bouquet
"Many colleagues gave Petra a box of chocolates as a present, and many friends have given her a bouquet of flowers."

b. #Pralinen haben viele Kollegen Petra geschenkt und chocolates have many colleagues Petra given and [Blumen] [$___D$ Freunde].
flowers friends

It seems that as soon as another element occupies the initial position in the elliptical conjunct, determiner sharing is blocked. This element need not be

an argument. (3.17) illustrates the first-element generalization with an adjunct.

(3.17) #Morgens treibt jede Lehrerin Sport und [abends]
in.the.morning does every teacher exercise and in.the.evening
[$__{}_{D}$ Schülerin].
student

(3.18) shows the generalization in object determiner sharing.

(3.18) a. Die Lehrerin liest kein Buch am Dienstag und/oder $__{}_{D}$
the teacher reads no book on Tuesday and/or
Magazin am Mittwoch.
magazine on Wednesday
"The teacher doesn't read any book on Tuesday or magazine on Wednesday."

b. *Die Lehrerin liest kein Buch am Dienstag und/oder am
the teacher reads no book on Tuesday and/or on
Mittwoch $__{}_{D}$ Magazin.
Wednesday magazine

3.2.4. The no-constituents generalization

It is not only single quantifiers or determiners that can be shared, but also complex prenominal modifiers or other material, e.g., adjectival attributes, in addition to the determiner, see (3.19). The elements that can be shared need not form a constituent.

(3.19) Mindestens ein grüner Ball liegt im Haus und $__{}_{D}$ $__{}_{A}$ Eimer
at.least one green ball lies in.the house and bucket
im Garten.
in.the garden
"At least one green ball is in the house and at least one green bucket is in the garden."

However, the phrase that is the remnant of deletion does need to form a constituent. In a sequence of potentially shared determiners, sharing cannot skip elements. In (3.20), there are two pre-nominal elements, *jeder* "every" and *zweite* "second". The possible patterns of sharing are the following: deletion of both of them (3.20-a), or deletion of the first one (3.20-b). It is impossible for sharing to skip *jeder* and only apply to *zweite*, (3.20-c).

(3.20) a. Jeder zweite Schüler leidet unter Stress und $___D$ $___D$
every second student suffers under stress and
Lehrer $___V$ unter Lärm.
teacher under noise

b. ?Jeder zweite Schüler leidet unter Stress und $___D$ zweite
every second student suffers under stress and second
Lehrer $___V$ unter Lärm.
teacher under noise

c. #Jeder zweite Schüler leidet unter Stress und jeder $___D$
every second student suffers under stress and every
Lehrer $___V$ unter Lärm.
teacher under noise
"Every other student suffers from stress and every other teacher suffers from noise."

The initial quantifier and the noun phrase do not form a constituent under exclusion of the second one. Thus, the hypothesis is that remnants do form constituents, but shared or deleted material does not.

3.2.5. The no-low-elements generalization

One complicated aspect of the study of determiner sharing is that not all determiners can be shared. It is not at all clear what types of determiners and quantifiers are accepted in sharing constructions by a majority of speakers,

and what natural class they form. There seems to be considerable variation between speakers.

The experiments in 3.1 showed that *jeder* "every", *irgendein* "some" and *mindestens ein* "at least one" are all acceptable in sharing constructions. Apart from these, I believe that *alle* "all" and *(zu) viele* "(too) many" are allowed as well, based on introspection and the judgments of a small sample of native speakers. The indefinite and definite articles, as well as bare numerals cannot be shared (3.21). (3.21-a,b) are ungrammatical because bare singular nouns are impossible in German. (3.21-c) is impossible under the desired shared reading, and can only receive a bare plural interpretation.

(3.21) a. *Ein Schüler spielt Geige und $___D$ Lehrer $___V$ Klavier.
a student plays violin and teacher piano

b. *Der Schüler spielt Geige und $___D$ Lehrer $___V$ Klavier.
the student plays violin and teacher piano

c. #Vier Schüler spielen Geige und Lehrer Klavier.
four students play violin and teachers piano

A common property of cardinal numbers and indefinite article is that they occupy relatively low positions in the extended nominal projection (e.g., Julien 2002). Much of the literature on the DP agrees that articles form a natural class separate from quantifiers, demonstratives, possessives, etc. (e.g., Szabolcsi 1994, Giusti 1997, Matthewson 2001, Roehrs 2006). Giusti (1995, 2002) a.o. argues that articles occupy a low position in the nominal spine compared to quantifiers and other determiners. On this basis, I propose the hypothesis that elements that cannot be shared are in a certain sense too *low* or too *nominal*. However, let me stress that much more research needs to go into this issue. Since the empirical basis of this question is so incomplete, in the analytical part of this dissertation, I will focus on the other generalizations.

The aim of this thesis is to show that determiner sharing structures arise from the combination of split topicalization and ellipsis. As a consequence, all the elements that can be shared in determiner sharing mentioned above should be able to occur in split topicalization structures independently, and potentially *vice versa*. In 5.2 below I show that this is generally true, and also discuss two exceptions.

The rest of this section presents some more empirical points from German.

Possessive pronouns can be shared in English, but not in German (3.23).

(3.22) a. His son is 15 and $___D$ daughter $___V$ 16. (McCawley 1993:246)

b. *Seine Tochter ist 16 und $___D$ Frau $___V$ 26.
his daughter is 16 and wife 26

Adjectives generally cannot be shared in German (3.23-a). In this respect, the language behaves just like English. However, while English allows sharing of a possessor and prohibits sharing of postnominal modifiers (McCawley 1993), in German it is the other way around. Postnominal modifiers seem to be able to participate in sharing, while the acceptability status of possessors is questionable (3.23-b,c).[19]

(3.23) a. #Weiße Rosen sind wunderschön aber $___A$ Lilien $___V$ immer traurig.
white roses are beautiful but lilies always sad

[19] Note that the number mismatch on the verbs in (3.23-c) is not the reason for its reduced acceptability. Number mismatches between antecedent and gap are generally tolerated (i).

(i) Sachsens Natur ist ein Schatz, aber seine Bauwerke $___V$ eine Schande.
Saxony.GEN nature is a treasure but its buildings a disgrace
"Saxony's nature is a treasure but its buildings are a disgrace."

b. Schüler aus Berlin lieben Fußball und Lehrer $__{PP}$ $__{V}$
students from Berlin love football and teachers
Badminton.
badminton
"Students from Berlin love football and teachers from Berlin love badminton."

c. *?Sachsens Natur ist ein Schatz aber
Saxony.GEN nature is a treasure but
$__{POSS}$ Bauwerke $__{V}$ eine Schande.
buildings a disgrace

3.3. Chapter summary

This chapter has presented the empirical properties of determiner sharing in German. It began by describing three experiments I carried out. In my view, the results of these experiments show that determiner sharing is a possible output of the grammar of German, at least for some speakers. Additionally, they support the generalizations of determiner sharing in 3.2. We have seen that (i) determiner sharing is generally dependent on ellipsis (in the form of gapping and stripping), (ii) in embedded clauses it is the complementizer that must undergo ellipsis to license sharing, (iii) the shared determiner must be connected to the initial element in the conjunct, (iv) the shared material need not form a constituent, and (v) certain low nominal elements cannot be shared. Any analysis of determiner sharing must account for these properties. Before I develop such an analysis in chapter 6, I first address the general mechanism of gapping in German in the next chapter.

4. Aspects of gapping in German

Gapping is the necessary condition for the sharing of determiners. Therefore we should take a closer look at the properties of and conditions on gapping in German. In this chapter, I will discuss three aspects of gapping that are immediately relevant for an analysis of determiner sharing: the size of conjuncts, the exact target of gapping, and the existence of a movement dependency in the derivation of gapping. I propose that gapping in German involves large, clause-sized conjuncts, that it consists of deletion of a lower clausal projection, and that the remnants move out of the ellipsis site.

Many aspects that are relevant for a complete analysis of gapping cannot be addressed here. For instance, it has been shown that gapping needs syntactic licensing (Lobeck 1995, Aelbrecht 2010). It is restricted to coordinations and comparatives,[20] and is subject to certain locality constraints and identity requirements (see e.g., Sag 1976, Rooth 1992a, Johnson 1996/2004, 2018, Williams 1997, Fox 1999, Lechner 2001, Lang 2004, Takahashi & Fox 2005, Hernández 2007, Toosarvandani 2013, Boone 2014, Rudin 2019, Anand et al.

[20]In this thesis, I will limit the discussion mostly to gapping in coordinations. However, note that there may be even more environments which allow gapping. Reeve (2014) notices that gapping seems to be possible in *wenn-dann*-clauses, despite the absence of coordination, as in (i).

(i) Wenn überhaupt irgendjemand irgendwas gekauft hat, dann Dirk einen Apfel.
if at.all anyone anything bought has then Dirk an apple
"If anyone bought anything at all, then Dirk (bought) an apple."
(Dirk Bury p.c. to Reeve 2014:160)

2021). Furthermore, intonation and information structure play an important role in the formation of gapping structures (see e.g., Carlson 2001a,b, Féry & Hartmann 2005, Winkler 2005, Konietzko & Winkler 2010, Ágel & Kehrein 2013), as well as pragmatic considerations (such as that the gapped constituents must be contextually given, and that remnants must contrast, see e.g., Kuno 1976, Sag 1976, Kuno 1981, Pesetsky 1982, Johnson 1996/2004, Winkler 1997). These topics will not be discussed in detail here.

Instead, this chapter addresses the following issues: the first section discusses the height of coordination and the size of conjuncts in gapping. I provide arguments that suggest that in contrast to English, gapping in German involves clause-sized conjuncts. Section 4.2 examines the nature of the ellipsis involved in gapping. I propose, based on previous literature, that gapping can be understood as deletion of a clausal projection that encodes finiteness, which I call FinP. In section 4.3, I provide evidence for the existence of an A′-movement dependency in gapping. Lastly, section 4.4 is specifically dedicated to the gapping of auxiliaries and modals, also known as subgappping.

4.1. Gapping with large conjuncts

As we have seen in section 2.2, most analyses of determiner sharing have been designed for languages like English and Spanish. German differs from these languages 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).[21] German gapping seems to involve bigger, clause-sized conjuncts. For instance, Hartmann (2000), Reich (2007), Konietzko & Winkler (2010) propose that in gapping,

[21] However, there is also a view that English gapping involves larger conjuncts. For instance, Frazier 2015, Potter et al. 2017 argue that gapping is structurally ambiguous between the coordination of vPs and clausal coordination.

CPs are coordinated, Gengel (2013) assumes a coordination of TPs. Repp (2009) argues that there are two sources for gapping in German, coordination of ForcePs, and coordination of TopPs, both high left peripheral projections.[22] I will follow in this tradition. If this view of gapping is on the right track, the small-conjunct analyses for determiner sharing based on ATB-movement are immediately ruled out. This section shows evidence for large conjuncts in German gapping from word order of particles and fronted objects, cross-conjunct binding, and restrictions on the interpretation of negation.

4.1.1. Evidence from word order of particles

The first 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 (2004b) 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, (4.1). In V2 structures, they are split from their verbal host and occur in the verb's base position.

(4.1) 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."

[22] There are also analyses which posit smaller-than-clause-size conjuncts, e.g., Winkler (2005).

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 (4.2). The particle cannot be split off.

(4.2) 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 verb cannot have been deleted in its base position, compare (4.3).

(4.3) *dass er jeden Radfahrer um-fährt und jeden
that he every.ACC biker.ACC PARTC-runs.over and every.ACC
Baum an-~~fährt~~
tree.ACC PARTC-drives
intended: *"that he runs over every biker and drives against every tree"*

Since we can observe in sentences like (4.4) that there is an overt particle in the V^0 base position to the right of the direct object, we can deduce that the verb must have moved away from the particle to C^0.

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

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.

4.1.2. Evidence from cross-conjunct binding

The second piece of evidence comes from cross-conjunct binding. In English, in coordinations in which the verb is gapped in non-initial conjuncts, the subject in the first-conjunct can bind the subject in the second conjunct, as in (4.5-a) (see e.g., McCawley 1993, Johnson 1996/2004, Kennedy 2001, Johnson 2009). This binding is not possible in non-gapping coordinations, (4.5-b). German does not show this contrast in the minimal pairs in (4.6).

(4.5) 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.

(4.6) a. #Keine Studentin$_1$ wählt die CDU und ihr$_1$ Professor ~~wählt~~ die SPD.
no student votes the CDU and her professor votes the SPD

b. #Keine Studentin$_1$ wählt die CDU und ihr$_1$ Professor wählt die SPD.
no student votes the CDU and her professor votes the SPD
intended: *"No student votes for the CDU and her professor for the SPD."*

In English, cross-conjunct binding is an argument for small conjuncts: 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 first subject moves out of its

base-position in Spec,vP into Spec,TP while the second subject stays *in situ*. This entails that gapping contains a coordination of vPs. This argument is not valid for German gapping. The subject in (4.6-a) arguably moves to the prefield, i.e., to Spec,CP. Still, it is not high enough to c-command the second subject. This can be accounted for if one assumes that the conjuncts are so large that it is not possible for the subject to move out of its conjunct. This suggests that both subjects move only inside of their own conjunct, and consequently both conjuncts must be CPs.

4.1.3. Evidence from the scope of negation

A third argument may come from the possible scope of negation. As a basis for the argument, we will again look at English gapping first. In English, the scope of negation can have three different interpretations in gapping (see e.g., Siegel 1984, 1987, Oehrle 1987, Johnson 1996/2004, Winkler 2005, Repp 2009). In (4.7-a), the negation is not overt in the second conjunct, but it is interpreted as if it was present. The negation takes *distributed scope*. (4.7-b) shows *wide scope* of the negation: it takes scope over both conjuncts. Finally (4.7-c) shows *narrow scope*: the negation can only be interpreted in the first conjunct, where it is present overtly.

(4.7) a. Pete hasn't got a video and John ___ a DVD.
= [It is not the case that Pete has a video] and [it is not the case that John has a DVD]. $(\neg A) \wedge (\neg B)$

b. Pete didn't clean the whole flat and John ___ laze around all afternoon.
= It is not the case that [Pete cleaned the whole flat and John lazed around all afternoon]. $\neg(A \wedge B)$

c. Pete wasn't called by Vanessa, but John ___ by Jessie.
= [It is not the case that Pete was called by Vanessa] and [it is the case that John was called by Jessie]. $(\neg A) \wedge B$
(Repp 2009:2)

In German, gapping of the negation does not result in ambiguous readings (Winkler 2005, Repp 2009, Erschler 2018). In fact, Winkler (2005) and Repp (2009) note that omitting a negation in the non-initial conjunct leads to unacceptability or extreme markedness, see (4.8).

(4.8) ??Max hat den Kuchenteller nicht abgewaschen und Paul ___ die
Max has the cake.dish not washed and Paul the
Salatschüssel.
salad.bowl
(Repp 2009:107)

Winkler observes that speakers can only obtain a distributive reading if the negation is repeated in the second conjunct, as in (4.9).

(4.9) Ich glaube, dass Leon nicht Klavier spielen kann und Peter *(nicht)
I think that Leon NEG piano play can and Peter NEG
Gitarre.
guitar
"I think that Leon can't play the piano and Peter (can't play) the guitar."
(Winkler 2005:215)

Similarly, Winkler notes wide scope readings are generally impossible for speakers of German. They are accepted only with an "*anchor for the cumulative reading*" (Winkler 2005:215), such as an adverb like *gleichzeitig* "at the same time" that explicitly links the two conjuncts together as one complex event, (4.10).

(4.10) a. A: Das gibt es doch nicht! ("I don't believe this!")

b. B: Leon kann nicht Kaviar essen und Anna ___
Leon can NEG caviar eat and Anna
*(gleichzeitig) Bohnen!
at.the.same.time beans
"Leon can't eat caviar and Anna beans!" (Winkler 2005:215)

It seems that it is impossible to delete the negation in gapping while retaining its interpretation. That suggests that conjuncts must be large enough to host a negation or polarity in general. These observations lead Winkler (2005) to propose that gapping conjoins ΣPs, the functional projection that encodes negative or affirmative features of a clause (based on Laka 1990). Whether we follow Winkler's exact analysis or not, these facts suggest that in German gapping applies to bigger conjuncts than in English.[23] In German, the conjuncts must be large enough to host a projection that encodes sentence negation.

4.1.4. Evidence from object fronting

Lastly, Hartmann (2000:158) introduces an argument from gapping in complement clauses. With gapping in embedded clauses, the complementizer must be obligatorily non-overt (Hendriks 1995, Lechner 2018). Gapping of

[23] However, other scope taking elements seem to suggest the contrary. Höhle (1983), Höhle (2018) observes that sentential adverbs such as *hoffentlich* "hopefully" are obligatorily interpreted with wide scope in gapping sentences, (i).

(i) Karl füttert hoffentlich den Hund und Heinz ___ den Kater.
Karl feeds hopefully the dog and Heinz the cat
"Hopefully it will be the case that [Karl feeds the dog and Heinz feeds the cat]."
(Höhle 2018: 214)

This scope taking behavior could be explained by covert quantifier raising (QR) of the adverb (see e.g., Sauerland 2001, Sauerland & Bott 2002, Wurmbrand 2008) to a position high enough such that it can c-command into both conjuncts. I will not investigate the this issue further in this work.

the verb with an overt complementizer is ungrammatical, recall 3.13, repeated as (4.11).

(4.11) a. *Ich glaube, [$_{CP}$ dass Peter mit seiner Frau nach Indien reist]
I believe that Peter with his wife to India travels
und [$_{CP}$ dass Martin mit seinen Kollegen in die
and that Martin with his colleagues in the
Schweiz —].
Switzerland

b. Ich glaube, [$_{CP}$ dass Peter mit seiner Frau nach Indien reist]
I believe that Peter with his wife to India travels
und [$_{CP}$ — Martin mit seinen Kollegen in die Schweiz
and Martin with 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, (4.11-a) could receive an analysis like (4.12), in which TPs are coordinated under a single complementizer, i.e., there is no complementizer that must be obligatorily deleted in the second conjunct.

(4.12) [I think [$_{CP}$ that [$_{TP}$ ...] and [$_{TP}$ ...]]]

However, Hartmann points out that such an analysis is not possible for embedded *wh*-clauses. In (4.13), the conjuncts are object clauses with a *wh*-element. Crucially, in the second conjunct in (4.13), it is impossible to omit the *wh*-word, i.e., an analogous analysis to (4.12) in which a *wh*-word moved across-the-board from two embedded TPs is ruled out. She concluded that examples like (4.13) suggest that the conjuncts must be CPs.

(4.13) Ich verwechsle immer [was Peter Ute zum Geburtstag
I confuse always what.ACC P.NOM U.DAT to birthday
schenkt] und [*(was) sie ihm ~~zum Geburtstag~~
give and what.ACC she.NOM him.DAT to birthday
~~schenkt~~]
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)

(4.14) *I confuse [$_{CP}$ what [$_{TP}$ ... *t* ...] and [$_{TP}$ ... *t* ...]]

In summary, I have presented four arguments in favor of the large size of gapping conjuncts in German. Note that these arguments do not imply anything about the size of the *ellipsis site*. They simply serve as arguments for the large size of the constituent that hosts the ellipsis site. The evidence in this section suggests that gapping involves clausal coordination, and that smaller, vP-sized conjuncts are unavailable in German gapping. If this is correct, small conjunct analyses of determiner sharing cannot be applied to German, and we must look for a different analysis based on gapping with large conjuncts. I interpret the observations of this section to indicate that coordination in gapping applies to entire clauses, and that gapping in German is a type of clausal ellipsis. In the next section, I investigate the left periphery in more detail, and argue that gapping deletes not a verb, but low projection of the left periphery.

4.2. Gapping as clausal ellipsis

Determiner sharing is restricted to ellipsis contexts, seemingly with one exception: sharing in the coordination of embedded clauses. Recall that in embedded clauses, determiner sharing was possible in the presence of the fully overt verbal structure, (4.15) (repeated from (3.12-b) above).

(4.15) a. Wie viele Mädchen spielen Volleyball und $___D$ Jungs
how many girls play volleyball and boys
(*spielen) Basketball?
play basketball
"How many girls play volleyball and how many boys play basketball?"

b. Ich weiß nicht, wie viele Mädchen Volleyball spielen und
I know not how many girls volleyball play and
$___D$ Jungs Basketball üben.
boys basketball practice
"I don't know how many girls play volleyball and how many boys practice basketball."

One of the goals of this section is to show that embedded clauses do not in fact form an exception to the rule. I show that they obey the generalization that sharing is dependent on ellipsis if we conceive of gapping not as the deletion of a (finite) verb, but as deletion of a clausal projection, as proposed by Hartmann (2000).

Gapping is traditionally conceived of as the deletion of (at least) a finite verb in a coordination (under identity to a proper antecedent). While other constituents, such as objects or adjuncts, *may* be deleted in gapping, the finite verb generally *must* be among the elided constituents. This is what Hartmann (2000) calls the Finite First Condition (4.16).[24]

(4.16) *Finite First Condition* (Hartmann 2000:156)
In a gapping construction, the finite (part of the) verb is obligatorily left out in a non-first conjunct.

However, we have already seen in section 3.2.2 that deletion of the finite verb in an embedded clause in turn depends on deletion of the complementizer.

[24]For deletion of only the finite verb, so called subgapping, see section 4.4.

Moreover, in non-finite embedded sentences, we find the same pattern. The complementizer must be deleted if any verbal material is to be gapped. Repp (2009) shows that in (4.17), the complementizer *um* which introduces a *to*-infinitive may not be left overt if the non-finite verb is deleted.

(4.17) Hans ging, [[um dem Schwiegervater das Haus zu zeigen] und
Hans went COMP the father.in.law the house to show and
[(*um) dem Kollegen die Wohnung ~~zu zeigen~~]]
COMP the colleague the flat to show
"Hans left to show his father-in-law the house and his colleague the flat."
(Repp 2009:213)

She argues that this ellipsis should still be considered an instance of gapping, even if there is no finite element that is elided, seemingly contra 4.16. However, as Hartmann and others have argued, there is a connection between the finite verb and the complementizer, and the Finite First Condition can be reconciled with facts like (4.17).

For one, complementizers and finite verbs occupy the same syntactic position in German (e.g., Haider 1984, Grewendorf 1988, Holmberg & Platzack 1995). The main argument for this analysis is the complementary distribution of finite verbs and complementizers.[25]

[25] However, Von Stechow & Sternefeld (1988: 402–405) point out a flaw in the conclusion that complementary distribution implies identification with respect to these two elements. The structuralist reasoning usually follows the logic in (i).

(i) The elements A and B are in complementary distribution with respect to a context C iff C can be decomposed into two disjoint contexts C1 and C2, and A only occurs in C1 and B only occurs in C2.
(Von Stechow & Sternefeld 1988:403, translation by the author)

For instance, if A and B are two sounds in complementary distribution, with A exclusively in C1 and B exclusively in C2, then it is licit to conclude that they are instances of the same phoneme that takes different shapes in different environments. Crucially, on the phoneme level, there is no complementary distribution. The *sounds* A and B contrast, but as *phonemes*, A and B are identical. The authors argue that in syntax, there is no abstract level on which

Based on proposals by Jacobs (1984), Klein (1998), who demonstrate that certain components of a finite verb can be dissociated from it, Hartmann (2000) argues 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, 2002b, Bayer 2004, Brandner 2004, Meinunger 2004 for linking C/V2 with assertion). As evidence, Hartman (2000:158ff.) proposes 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 falls either on the finite part of a verbal complex, (4.18), or on the complementizer, (4.19) (pitch accent is indicated by uppercase letters).

(4.18) 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)

(4.19) 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 (4.19-b) is only felicitous

elements like the complementizer and the finite verb are complementarily distributed. Complementizer and finite verb should be identical on the level of syntactic category, such that they can both occur in the same position (C^0). It is not clear on what level they could *contrast*. Von Stechow and Sternefeld (1988) argue that one would have to differentiate between syntactic category and e.g., word class, an undesirable and implausible assumption. If these elements are complementarily distributed on the word level, arguments about the embedding of only verb-final clauses are invalid, since the clause level must be much higher. In sum, they reject the reasoning of complementary distribution in syntax altogether.

in context in which the temporal part of the meaning is contrasted. 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 (4.18), and (ii) minimally omitted in gapping, see 4.16. In embedded clauses, the complementizer becomes that element. Hartmann (2000) concludes that gapping is a type of ellipsis that deletes the clausal projection associated with assertion.[26] Descriptively, gapping deletes either a finite verb or a complementizer, and on a certain level of abstraction we can see that

[26] 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
I know never whether the Indians more nuclear.tests done have or
(*ob) die Pakistani $__{}_{VP}$.
whether the Pakistani
"I never know whether the Indians did more nuclear tests or the Pakistani." (Hartmann 2000:161)

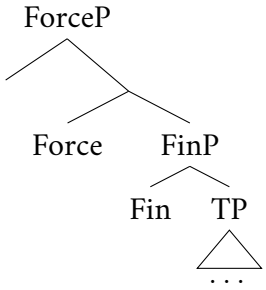
b. Helga wollte kommen wenn Frau Meyer den Kindergeburtstag
Helga wanted come if Mrs Meyer the children's.birthday.party
organisiert und (*wenn) Herr Schulz die Dinnerparty $__{}_{V}$.
organizes and if Mr Schulz the dinner.party
"Helga wanted to come if Mrs Meyer organizes the children's birthday party 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.

these are in fact identical. They are possible realizations of the same syntactic projection.

I assume that the German clausal layer contains two relevant functional projections, which I will call ForceP and FinP (but note that they are not completely equivalent to Force and Fin projections in the cartographic tradition e.g., Rizzi 1997). FinP is the lower projection, and the host of the complementizer or verb in V2. ForceP is the higher projection and host of A′ landing sites, see (4.20).

(4.20) *Clausal projections in German*



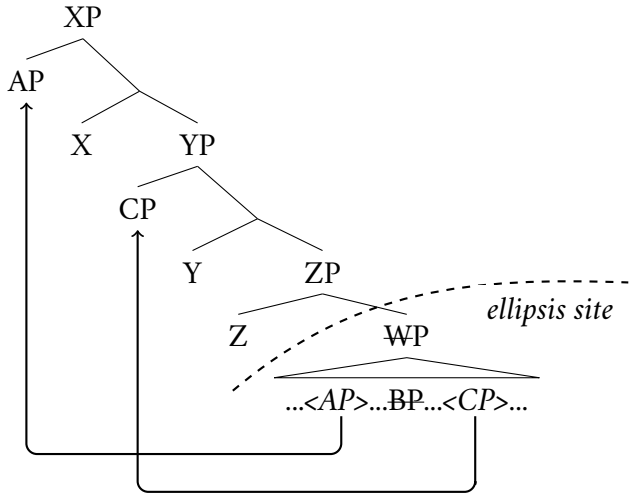
In the tradition of Hartmann (2000) and Repp (2009), I propose that gapping in German can be conceived of as deletion of the clausal projection that can be filled by a finite verb or a complementizer (see also Broekhuis 2018, Broekhuis & Corver 2019 for a similar assumption in Dutch). This projection, FinP, is the minimal target of gapping, i.e., it is the element that gapping deletes obligatorily. The gap can be bigger and contain e.g., non-finite verbal elements optionally. The crucial gap, however, only involves the head of FinP. Since Fin^0 can be lexicalized by two different elements, depending on the word order, it seems that in verb-second clauses, the finite verb is the minimal gap (the Finite First Condition 4.16), and in verb-final clauses, the minimal gap is the complementizer (the Head Condition 3.15). Conceiving of gapping as FinP-deletion shows us that the core of these two conditions is identical. I propose that the apparent non-constituent deletion of the element

in Fin^0 (and potentially other elements) can be reanalyzed as constituent deletion of the entire FinP. This approach entails that the remnants must move out of FinP. Otherwise, there would be no overt elements in the second conjunct. In the next section, I provide evidence for the existence of that movement.

4.3. Movement in gapping

This section aims to demonstrate that an A′-movement dependency exists in German gapping, thus supporting a move-and-delete view of ellipsis. The idea in a move-and-delete approach is that superficial non-constituent ellipsis can be reanalyzed as constituent deletion if the remnants of ellipsis move out of the ellipsis site. The ellipsis site is so big that it initially not only contains the deleted elements but also remnants, which have to evacuate this constituent in the syntax, in order to be later filled with vocabulary items and thus pronounced. This is schematized in (4.21).

(4.21)



This section provides arguments for the obligatory movement of remnants. Evidence comes from island and freezing effects, the X^0/XP-status of rem-

nants, P-stranding, particle movement, the types of embedding predicates, and syntactically motivated case omission.

4.3.1. Evidence from island constraints

The first piece of evidence comes from island constraints. Hankamer (1971) was the first to notice the island sensitivity of gapping remnants. Neijt (1979) and Coppock (2001) also have extensive lists of island constraints that gapping cannot violate. As far as I can see, all the observations about island constraints in gapping in English carry over to German. For this reason, I keep this point short and refer the reader to the original literature. (4.22) and (4.23) illustrate the sensitivity for a complex NP island and an adjunct island. Gapping is impossible if one of the remnants is contained in an island.

(4.22) *Complex NP constraint* (Coppock 2001)

a. *Some complained about the person who ate the seafood and others, bread.

b. *Manche haben sich über die Person die Meeresfrüchte
some have REFL about the person who seafood
gegessen hat beschwert und andere, Brot.
eaten has complained and others bread

(4.23) *Adjunct island constraint* (Coppock 2001)

a. *Some danced after they ate seafood and others, bread.

b. *Manche haben getanzt nachdem sie Meeresfrüchte
some have danced after they seafood
gegessen haben und andere, Brot.
eaten have and others bread

The sensitivity of gapping to island constraints suggests that a movement dependency is involved in the derivation of this ellipsis.

4.3.2. Evidence from freezing

The second argument concerns a special type of island effect: freezing. Freezing refers to the phenomenon that a phrase becomes an island for extraction after the phrase itself has undergone movement. Put differently, the phrase becomes opaque for extraction in a derived position, while it would allow extraction in its base position (see e.g., Wexler & Culicover 1977, 1980, Fanselow 1987, Browning 1987, Grewendorf 1989, Müller 1998, 2010, Corver 2017). This is illustrated in (4.24). (4.24-a) shows the object DP *reviews of his books* in its base position. From there, extraction out of the DP is possible, as in (4.24-b). In (4.24-c), the object DP has been topicalized inside the embedded clause. (4.24-d) shows the freezing effect: from the derived topicalized position of the DP, extraction of the *wh*-phrase out of the DP becomes impossible.

(4.24) a. I think that John never reads [reviews of his books].
b. Whose books$_i$ do you think that John never reads [reviews of t_i]?
c. I think that [reviews of his books]$_i$ John never reads t_i.
d. *Whose books$_i$ do you think that [reviews of t_i]$_j$ John never reads t_j. (Corver 2017)

Yoshida (2005) investigates freezing effects on the remnants of gapping. He argues that if remnants move to escape ellipsis, it is expected that the remnants should subsequently be frozen and become islands. This is borne out, see (4.25). In the context without gapping (4.25-a), across-the-board movement of the *wh*-phrase out of a PP is possible. When the verb is gapped in (4.25-b), this movement is impossible. He argues that if the PP already moved out of an ellipsis site to escape deletion, a subsequent subextraction is ruled out.

(4.25) a. I wonder which topic$_i$ John talked [about $__{}_i$] and Mary talked [about $__{}_i$] too.

b. *I wonder which topic$_i$ John talked [about $__{}_i$] and Mary ~~talked~~ [about $__{}_i$] too.

The same argument can be made for gapping in German. (4.26) illustrates this. In (4.26-a), the *wh*-word *wer* "who" moves out of a coordination across-the-board. When the verbal complex in the main clause is gapped, and the *wh*-word is supposed to move out of a CP-remnant, the movement is not possible anymore, (4.26-b).

(4.26) a. Wer$_i$ hat Stefan gesagt, [$_{\text{CP}}$ $_{}_i$ jage Bären] und hat
who.NOM has Stefan said hunts bears and has
Maria gesagt, [$_{\text{CP}}$ $_{}_i$ jage Schafe]?
Maria said hunts sheep
"Who did Stefan say hunts bears and who did Maria say hunts sheep?"

b. *Wer$_i$ hat Stefan gesagt, [$_{\text{CP}}$ $_{}_i$ jage Bären] und $__{}_{\text{v}}$
who.NOM has Stefan said hunts bears and
Maria [$_{\text{CP}}$ $_{}_i$ jage Schafe]?
Maria hunts sheep

Note that gapping is possible without ATB-movement, see (4.27).

(4.27) Stefan hat gesagt, er jage Bären und Maria $__{}_{\text{v}}$, er jage Schafe.
Stefan has said he hunts bears and Maria he hunts sheep
"Stefan said he would hunt bears and Maria said he would hunt sheep."

The only difference between (4.26-a) and (4.26-b) is the deletion of the matrix verb. The freezing effect in (4.26-b) can be explained if remnants have to move to escape ellipsis, blocking further extraction from them.

4.3.3. Evidence from the shape of remnants

Only full phrases can be remnants in gapping, not heads (Hankamer 1979, Lasnik 1999, Merchant 2004, Boone 2014). A theory of ellipsis that involves movement of the remnants to a specifier position in the left periphery makes exactly that prediction. Hartmann (2000) argues explicitly for German that X^0-elements cannot be remnants of gapping. (4.28) exemplifies this for prepositions. A preposition without its DP complement cannot be a remnant. If movement to escape ellipsis can only be phrasal movement, and we exclude a derivation of remnant movement of $[_{\text{PP}}$ unter t_{DP}], Hartmann's observation can serve as an argument for a move-and-delete derivation of gapping (see also the following argument from P-stranding).

(4.28) *Karl verlegt die Rohre über den Putz und Peter $___{\text{V}}$ die Kabel
Karl installs the pipes under the plaster and Peter the cables
unter $___{\text{DP}}$.
under (Hartmann 2000:149)

This is not restricted to prepositions. Hartmann also provides examples for articles, given here as (4.29), prefix verbs, and compounds (see Hartmann 2000: 149ff).

(4.29) *Peter traf den Schrader und Martin $___{\text{V}}$ die $___{\text{NP}}$.
Peter met the.M Schrader and Martin the.F
intended: *"Peter met a male member of the Schrader family and Martin met a female member of the Schrader family."*
(Hartmann 2000:149)

4.3.4. Evidence from 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, (4.30).

(4.30) a. Vem$_i$ har Peter talat med $_i$?
who has Peter talked with

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

German does not allow stranding of the preposition under *wh*-movement in (4.31-a), and instead has to obligatorily pied-pipe the preposition. It also does not allow P-stranding in sluicing (4.31-b), suggesting that sluicing involves the same type of movement.

(4.31) a. *Wem$_i$ hast du gesprochen mit t_i?
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

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[27]. P-stranding

[27] 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)

is impossible (4.32), as expected if the remnants undergo movement prior to ellipsis.

(4.32) Britta hat mit Abed geredet und Shirley $___{v}$ *(mit) Jeff.
Britta has with Abed talked and Shirley with Jeff
"Britta has talked to Abed and Shirley has talked to Jeff."

Interestingly, postpositions show different behaviors than prepositions. In (4.33), the postposition *hinauf* "up" can be stranded, and fittingly, it also allows its DP complement to be a remnant in gapping, (4.34).

(4.33) Wo geht Peter $__{i}$ hinauf?
where goes Peter up
"What does Peter go up?"

(4.34) Martha geht die Treppe hinauf und Peter $___{v}$ die Rampe $___{p}$.
Martha goes the stairs up and Peter the slope
"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.

4.3.5. Evidence from particles

The fifth argument comes from the behavior of certain particles in German. There are two types of particle verbs: transparent ones, whose meaning can be directly composed from the meaning of the verb and the meaning of the particle, and idiomatic ones that do not show such a semantic compositionality. Wurmbrand (2000) shows that transparent particles such as *auf* in *auf-machen* "to open" can front in German, (4.35-a). Particles in idiomatic particle verbs,

like the *auf* in *auf-führen* "to perform", cannot be fronted, (4.35-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.

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

b. *Auf$_i$ haben sie das Stück $__i$ geführt.
PARTC have they the play performed
intended: *"They staged the play."*

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 2014 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 (4.36-a). As for idiomatic particle verbs such as *auf-hören* "to stop", the particle cannot be a remnant of gapping (4.36-b).

(4.36) a. Er hat die Tür zu gemacht und sie $___V$ $___{DP}$ auf.
he has the door close made and she open
"He closed the door and she opened it."

b. *Er hat ihr zu gehört und mit dem Quatsch auf $___V$.
he has her PARTC listened and with the nonsense PARTC
intended: *"He listened to her and stopped with the nonsense."*

4.3.6. Evidence from types of embedding predicates

Sixth, 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* 'be-

lieve', 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). 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, (4.38). 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, (4.37).

(4.37) $[_{vP}$ think $[_{CP}$ remnant $[_{TP}$ ... *t* ...]]]

(4.38) $[_{vP}$ know $[_{CP}$ Op $[_{TP}$ ... remnant ...]]]

The same line of reasoning can be applied to gapping in German. The relevant examples are in (4.39). The remnants of gapping can occur in an embedded clause only under propositional attitude verbs (4.39-a), and not under factive verbs (4.39-b).

(4.39) a. Die Grünen haben in Baden-Württemberg gewonnen
the green.party have in Baden-Württemberg won
und ich glaube/ fürchte/ denke die CDU in Sachsen-Anhalt.
and I believe fear think the CDU in Saxony-Anhalt

b. *Die Grünen haben in Baden-Württemberg gewonnen und
the green.party have in Baden-Württemberg won and
ich weiß/ bezweifle/ stimme zu die CDU in Sachsen-Anhalt.
I know doubt 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."*

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.

4.3.7. Evidence from syntactically motivated case omission

Lastly, I would like to present a new argument for movement in gapping, and specifically in determiner sharing structures. It concerns morphological case marking on nouns. German can show inflection markers on determiners, adjectives, and nouns, see (4.40-a). In some cases, nouns can occur without overt case markers, (4.40-b).

(4.40) 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. He observes that 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* from the weak declension paradigm (see section 5.1.3.2, and Bierwisch 1967, Zwicky 1986, Blevins 1986, Wunderlich 1997b,a, Müller 2002 for more on inflectional paradigms in German) in (4.40), and for dative *-e* in (4.41). 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 the adjective *hartem* in (4.41-c).

(4.41) 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)

In Gallmann's analysis (1996,1998) the noun can only bear a case suffix if it is in concord with another overtly case-marked element and to establish concord it has to be in spec-head agreement with the marked element.[28] 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 (4.42-a).

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

b. Jedem Jagdrevier fehlt ein Jäger und __ Wald-e
every-DAT shoot.DAT lacks a hunter.NOM and forest-DAT
$___V$ ein Förster.
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 a sufficiently local configuration with a determiner that can carry overt case marking to make concord possible. We can account for this if we propose that the noun was base-generated in a DP with a case-marked determiner, which has

[28] Gallmann (1996,1998) assumes that attributive adjectives are not adjoined to NP, but rather base generated as specifiers of an intermediate nominal projection, AgrNP.

subsequently been deleted, 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.

To sum up, this section presented a collection of arguments for a movement dependency in gapping. Evidence came from island constraints, freezing effects, the X^0/XP-status of remnants, P-stranding, particle movement, the types of embedding predicates, and syntactically motivated case omission. All of these tests suggest that the remnants of gapping must move. Note that *both* remnants show the symptoms of movement, not just the initial one. This will become relevant in the analysis of movement in elliptical contexts in chapter 7.

4.4. Subgapping

Subgapping, or auxiliary gapping, refers to sentences in which only an auxiliary or modal is omitted from the non-initial conjunct, while non-finite verbal material surfaces overtly, as in (4.43).

(4.43) a. Gestern haben viele Leute Kerstin eingeladen, und
yesterday have many people Kerstin invited and
wenige $__{}_{\text{AUX}}$ Gesine besucht.
few Gesine visited
"Yesterday many people have invited Kerstin and few people have visited Gesine."

b. Gestern wollten viele Leute Kerstin einladen, aber nur
yesterday wanted many people Kerstin invite but only
wenige $__{}_{\text{MOD}}$ Gesine besuchen.
few Gesine visit
"Yesterday many people wanted to invite Kerstin but only few people wanted to visit Gesine."

So far, I have treated constructions like (4.43) as regular gapping structures. However, it has been noted in the previous literature that subgapping shows some different properties than gapping, and it has been argued that it is not a product of ellipsis, but rather across-the-board movement of the auxiliary or modal (e.g., Lechner 2001 for German, Frazier 2015 for English). In this section I will show that subgapping in German should indeed be analyzed as ellipsis.

Let us first compare the characteristics of gapping to subgapping in German. Johnson (2009) identified three core properties of gapping (see also e.g., Ross 1970, Neijt 1979, Van Oirsouw 1987, Steedman 1990, 1996, Wesche 1995, Johnson 1996/2004, Lechner 2001, Johnson 2018 for constraints on gapping). First, gapping is restricted to coordinations (Jackendoff 1971, Hankamer 1979) and comparatives (Moltmann 1992, Lechner 2004).[29] Gapping cannot target material in an adjunct clause, as in (4.44).

(4.44) *Manche haben Muscheln gegessen weil andere Fisch ~~gegessen~~ ~~haben~~.
some have mussels eaten because others fish eaten have

(4.45) shows that subgapping has the same restriction.

(4.45) *Manche haben Muscheln gegessen weil andere Fisch bestellt ~~haben~~.
some have mussels eaten because others fish ordered have

[29] Gapping is also possible in question/answer pairs (Reich 2007, Boone 2014, Weir 2014) (i). I will not discuss question/answer pairs further. See also fn. 20.

(i) A: Who ate what?
B: Jones seafood.

Secondly, the gap may not be embedded (Hankamer 1979). Hankamer calls this the downward bounding constraint. In a coordinate structure as in (4.46), gapping is impossible if the deleted material is inside the complement clause of *behaupten* "claim". The same is true for subgapping, (4.47).

(4.46) *Manche haben Muscheln gegessen und sie behauptet, dass andere
some have mussels eaten and she claims that others
Fisch ~~gegessen~~ ~~haben~~.
fish eaten have

(4.47) *Manche haben Muscheln gegessen und sie behauptet, dass andere
some have mussels eaten and she claims that others
Fisch bestellt ~~haben~~.
fish ordered have

Similarly, the antecedent of the gap may not be embedded (Hankamer's 1979 upward bounding constraint). Johnson (2009) provides the English counterpart of (4.48). If the antecedent of the elided material is in an embedded clause, gapping becomes ungrammatical. Note that a reading of (4.48) in which the second conjunct is interpreted as an embedded clause is grammatical.

(4.48) a. *Sie hat gesagt dass Peter die Erbsen gegessen hat und Sally
she has said that Peter the peas eaten has and Sally
~~hat~~ die Bohnen ~~gegessen~~.
has the beans eaten
intended: [She has said that Peter has eaten the peas] and [Sally has eaten the beans].

(4.48) can only be grammatical in an interpretation where gap and antecedent are at the same height of embedding: She has said that [[Peter has eaten the peas] and [Sally has eaten the beans]]. Again, subgapping shows the same behavior, (4.49).

(4.49) *Sie hat gesagt dass Peter die Erbsen gegessen hat und Sally ~~hat~~ die
she has said that Peter the peas eaten has and Sally has the
Bohnen verspeist.
beans eaten
intended: *[She has said that Peter has eaten the peas] and [Sally has eaten the beans].*

A property of V2 languages already mentioned above is that gapping cannot operate across overt complementizers (Hendriks 1995), (4.50). Subgapping behaves in the same way, (4.51).

(4.50) Ich glaube dass Hans das Buch liest und (*dass) Maria den
I believe that Hans the book reads and that Maria the
Artikel ~~liest~~.
article reads
(Lechner 2018)

(4.51) Ich glaube dass Hans das Buch geschrieben hat und (*dass) Maria
I believe that Hans the book written has and that Maria
den Artikel gelesen ~~hat~~.
the article read has

So far it seems that gapping and subgapping are subject to exactly the same restrictions. The next section looks at their differences.

4.4.1. Differences between subgapping and gapping

What has motivated researchers to differentiate between them are the following two observations. Maling (1972) has observed an asymmetry with respect to the direction of gapping for auxiliaries. While lexical verbs in embedded clauses can be elided either in the first conjunct or the second one (backward vs. forward gapping), (4.52), forward gapping of auxiliaries in verb-final embedded clauses is marginal for most speakers, (4.53).

(4.52) a. weil Kübra das Buch schreibt und Julia den Artikel ___V
because Kübra the book writes and Julia the article
forward

b. weil Kübra das Buch ___V und Julia den Artikel schreibt
because Kübra the book and Julia the article writes
backward

(4.53) a. *?weil Kübra das Buch geschrieben hat und Julia den
because Kübra the book written has and Julia the
Artikel gelesen ___AUX
article read
forward

b. weil Kübra das Buch geschrieben ___AUX und Julia den
because Kübra the book written and Julia the article
Artikel gelesen hat
read has
backward

Lechner 2004 reports a difference between auxiliaries and modal verbs here. Forward gapping of modals in V-final clauses is marked, but still acceptable (see also Den Besten & Broekhuis 1989, Vanden Wyngaerd 1993, but contra Evers 1975: 13 who does not find a contrast), (4.54).

(4.54) ?weil einige ein Lied singen wollten und andere ein Gedicht
because some a song sing wanted and others a poem
vortragen ___MOD
recite
"because some wanted to sing a song and others to recite a poem"
(Lechner 2004:107)

He notes in fn. 101 (Lechner 2004: 250) that the more acceptable examples of subgapping have in common that they occur in bare infinitival complements, as in (4.54), as opposed to control infinitives with *zu* "to" or participles. In a control construction with *zu*-infinitive, Lechner judges subgapping (dele-

tion of only the embedding control verb in this case) to only be marginally acceptable if the verb allows for optional restructuring, see (4.55). Judgments are reported to increase even more when the infinitival complement is extraposed, as in (4.55-b).

(4.55) a. ??weil Maria das Lied zu singen versuchte und Fritz das
since Maria the song to sing tried and Fritz the
Gedicht vorzutragen $___v$
poem to recite

b. ?weil Maria *t* versuchte [das Lied zu singen] und Fritz *t*
since Maria tried the song to sing and Fritz
$___v$ [das Gedicht vorzutragen]
the poem to recite
"because Maria tried to sing the song and Fritz tried to recite the poem" (Lechner 2004:250)

In strict non-restructuring contexts, Lechner judges forward subgapping to be ruled out (4.56). Lechner (2004) concludes that subgapping must be ATB-movement rather than ellipsis.

(4.56) *weil Maria vorgab das Lied zu singen und Fritz $___v$ das
since Maria pretended the song to sing and Fritz the
Gedicht vorzutragen
poem to.recite
(Lechner 2004:250)

Additionally, Frazier (2015) observes that subgapping in English can tolerate voice mismatches, while lexical verb gapping cannot, (4.57). The same pattern can be observed in German, (4.58).

(4.57) a. *Some brought roses and lilies by others.
b. No one$_i$ should receive punishment and his$_i$ accomplice be forgiven. (Frazier 2015:51)

(4.58) a. *Manche haben Rosen mitgebracht und Lilien von anderen.
some have roses brought and lilies by others

b. Alma ist einen Marathon gelaufen und Max
Alma AUX.PRF a marathon.ACC run.PTCP and Max
~~ist~~ ins Ziel getragen worden.
AUX.PRF into.the finish.line carried be.PASS
"Alma has run a marathon and Max has been carried to the finish line."

In sum, the differences between lexical verb gapping and subgapping concern gapping in embedded clauses, the shape of the infinitives involved, and the argument structure of the predicate. Speaker intuitions vary considerably. For instance, Den Besten & Broekhuis (1989), Geilfuß (1988), Kroch & Santorini (1991) find subgapping of auxiliaries in German completely acceptable, as do I and many speakers I consulted. Den Besten & Broekhuis (1989) argue that Evers (1975) judges subgapping as unacceptable because of the increased markedness due to processing constraints: the overt lexical verbs form another contrasting set (they receive contrasting intonation as well, see e.g., Dirksen & Kerstens 1987), in addition to other remnants, and the increased amount of contrasts and therefore work load for the parser leads to decreased acceptability judgments (see also e.g., Gibson 1998, 2000). Den Besten & Broekhuis (1989) doubt that the markedness of subgapping is due to a grammaticality constraint. But even if it was, let us look at the differences again.

4.4.2. Explaining the differences

4.4.2.1. Embedded subgapping and cluster formation

In this section, I will argue that the impossibility of forward subgapping in embedded clauses is due to an unrelated property of infinitives in German, namely cluster formation. We have seen that, in contrast to gapping of lexical

verbs, subgapping is only possible backwards in embedded clauses, i.e., the auxiliary can only be omitted from the first conjunct, and not from the second one, see (4.59), repeated from above.

(4.59) a. *?weil Kübra das Buch geschrieben hat und Julia den
because Kübra the book written has and Julia the
Artikel gelesen $__{}_{\text{AUX}}$
article read

forward

b. weil Kübra das Buch geschrieben $__{}_{\text{AUX}}$ und Julia den
because Kübra the book written and Julia the article
Artikel gelesen hat
read has

backward

If we understand gapping as deletion of FinP, deletion of verbal material is a by-product. First and foremost, gapping targets FinP, which happens to be filled with a complementizer in embedded clauses, while the lexical verb and the auxiliary are *in situ*. In so-called backward gapping sentences like (4.59-b), where an auxiliary is missing from the first conjunct, but the complementizer in that conjunct is overt, gapping, i.e., deletion of FinP, cannot be responsible for the deletion. I will follow the line of research that identifies backward gapping as Right Node Raising (RNR), a construction in which two conjuncts "share" an element that appears at the right periphery as in (4.60), e.g., Hankamer (1979), Wesche (1995), Kornfilt (2000), Hernández (2007).[30]

[30] Contra Schwarzer (2020), where I used determiner sharing to argue that backward gapping cannot be RNR, since RNR in general cannot license omission of the determiner, but backward gapping can. What Schwarzer (2020) failed to consider was that determiner sharing is not dependent on the deletion of the verb, but of the deletion of the complementizer. The location of the verbal gap is orthogonal to the licensing of determiner sharing.

(4.60) *Right node raising*

a. Jette liebt ___ und Albert verabscheut Thunfisch.
Jette loves and Albert loathes tuna
"Jette loves tuna and Albert loathes tuna."

b. Jette verspricht ihrer ___ und Albert verspricht seiner Mutter,
Jette promises her and Albert promises his mother
von nun an die Wände nicht mehr zu bemalen.
from now on the walls not anymore to paint.on
"Jette promised her mother and Albert promises his mother not to paint on the walls anymore."

(based on an example from Hartmann 2000:57)

As evidence that gapping is not involved in the creation of the gap in the initial conjunct, consider again the data from 4.50 above, repeated as (4.61). Hendriks (1995) and Lechner (2018) show that a verb cannot be gapped in an embedded clause, if the complementizer of that clause is overt.

(4.61) Ich glaube dass Hans das Buch liest und (*dass) Maria den
I believe that Hans the book reads and that Maria the
Artikel ~~liest~~.
article reads

(Lechner 2018)

If gapping, i.e. FinP deletion, can operate backwards, we would expect that the complementizer of the initial conjunct must be deleted, if verb is deleted, or indeed that this complementizer can be deleted at all. This is not possible, (4.62).

(4.62) *Ich glaube, ___ Hans das Buch (liest) und dass Maria den Artikel
I believe Hans the book reads and that Maria the article
liest.
reads

Similarly, it is possible to have overt complementizers in each conjunct, and an auxiliary missing from the first one, (4.63). In such a configuration, no FinP could have been deleted, yet we still observe an auxiliary gap.

(4.63) Ich glaube, dass Kübra das Buch gelesen __ und dass Julia den
I believe that Kübra the book read and that Julia the
Artikel geschrieben hat.
article written has
"I think that Kübra has read the book and that Julia has written the article."

I conclude that gapping can only operate forwards, i.e., it creates gaps in non-initial conjuncts, see also e.g., Ackema (2010), and that missing material in initial conjuncts is due to a different process, e.g., RNR. This is what subgapping and lexical verb gapping have in common. Thus, so called backward gapping configurations seem to be irrelevant for our purposes here.

As for proper, forward gapping, why can auxiliaries not be in the ellipsis site in verb-final embedded clauses, but only in verb-second root clauses, see again (4.64)?

(4.64) a. *dass Kübra das Buch gelesen hat und Julia den Artikel
that Kübra the book read has and Julia the article
geschrieben __
written

b. Kübra hat das Buch gelesen und Julia __ den Artikel
Kübra has the book read and Julia the article
geschrieben.
written
"Kübra has read the book and Julia has written the article."

The crucial difference is the position of the auxiliary. While the auxiliary moves to V2-position in root clauses, such movement does not happen in embedded clauses. I propose that what leads to ungrammaticality in verb-

final clauses like (4.64-a) is cluster formation and the resulting impossibility of the infinitive to move out of the ellipsis site and leave the auxiliary behind. First, note that vPs/VPs can generally undergo topicalization, see (4.65).

(4.65) a. [$_{vP}$ Ein Aussenseiter gewonnen] hat hier noch nie.
a outsider won has here never
"No outsider has won here yet." (Grewendorf 1988)

b. [$_{VP}$ Das Radio repariert] hat gestern der Fritz.
the radio repaired has yesterday the Fritz
"Fritz has repaired the radio yesterday."

However, the situation is different in verb-final clauses. Clause-final verbal elements are known to form *clusters* in (West-)Germanic languages. They show certain cohesiveness effects. For instance, the verbal elements are not easily separated. Haider (2003) shows that it is impossible to place an adverbial inside the verb cluster, (4.66).

(4.66) dass die Theorie {schlecht} formuliert {*schlecht} worden
that the theory badly phrased badly be.PASS
{*schlecht} sein {*schlecht} mag
badly be badly may
"that the theory may have been badly phrased" (Haider 2003)

Similarly, relative clauses may not be extraposed to one of the elements in a cluster (Haider 2003). (4.67-a) shows the relative clause *in situ*, (4.67-b) shows a possible extraposition, and (4.67-c) shows the impossible landing site for an extraposed relative clause. Note that adjoining to VP is possible in general, when the VP is topicalized, for instance, as in (4.67-d). It is the clause-final clustering that makes adjunction to the verbal complex impossible. See Haider (2003) for an explanation why cluster formation may correlate with the clause-final position.

(4.67) a. dass er jenen [die ihn darum gebeten haben] etwas
that he those who him for.it asked have something
gegeben hat
given has

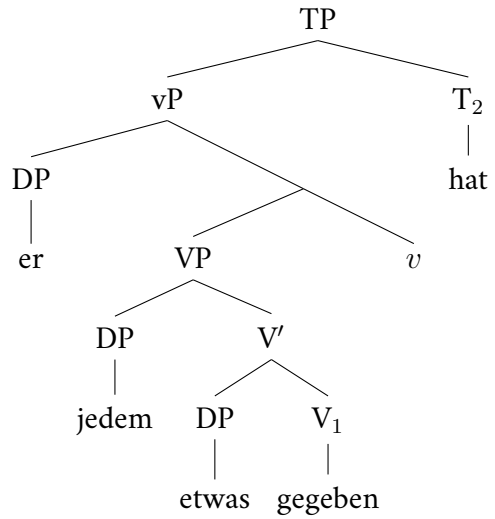
b. dass er jenen ___ etwas gegeben hat [die ihn darum
that he those something given has who him for.it
gebeten haben]
asked have

c. *dass er [$_{VP}$ jenen ___ etwas gegeben [die ihn darum
that he those something given who him for.it
gebeten haben] hat]
asked have has
"(that) he gave something to those who asked him for it"

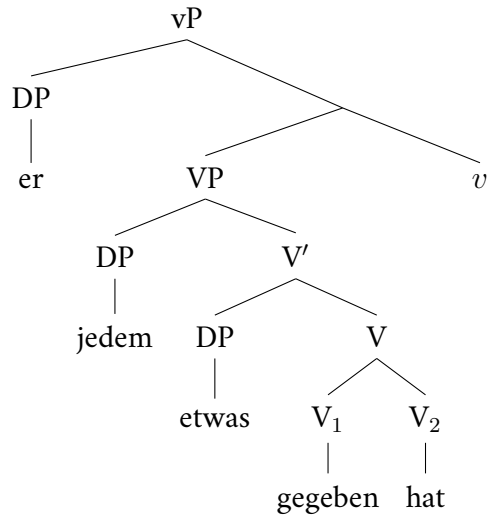
d. [$_{VP}$ Jenen ___ etwas gegeben [die ihn darum gebeten
those something given who him for.it asked
haben]] hat er noch nie.
have has he yet never
"What he has never done is give something to those who asked him for it." (Haider 2003)

For these and other operations, the clause-finally occurring verbs behave as one unit, as in (4.69).

(4.68) *Non-clustering structure*



(4.69) *Clustering structure*



If a cluster is formed, there is no way the infinitive and its arguments in (4.69) can evacuate the ellipsis site while leaving the auxiliary behind. This can account for the impossibility of forward subgapping in verb-final clauses. There are different approaches to an analysis of cluster formation. Evers (1975),

Haegeman & Van Riemsdijk (1986) offer a derivational account: the cluster is derived from the non-clustered structure via movement (reanalysis). Haider (1993, 2003), Williams (2003) and Bader & Schmid (2009) propose that there is no universal underlying structure for verb clusters and all clusters (with different head inversions) are base-generated.

If the inability to sub-gap an auxiliary is due to the cluster in the verb-final position in (4.59-a), we would expect that subgapping is possible if the auxiliary occurs in second position in an embedded V2-clause. Indeed, this is what we find, (4.70).

(4.70) Watson behauptet, Sherlock hätte die Wachen abgelenkt und
Watson claims Sherlock had the guards distracted and
Mycroft __ die Juwelen gestohlen.
Mycroft the jewels stolen
"Watson claims that Sherlock distracted the guards and Mycroft stole the jewels."

In sum, I tentatively propose that the impossibility of gapping an auxiliary in embedded clauses stems from an unrelated property of German verbs: cluster formation in verb-final position. In root clauses, the auxiliary can undergo movement to V2-position and thereby preempt being contained in a cluster. If this movement is impossible, as it is in embedded verb-final clauses, the auxiliary will become part of the cluster. As a result, auxiliary and lexical verb behave as one complex. In order for subgapping to succeed, the lexical verb would have to move out of the ellipsis site, leaving the auxiliary behind. Cluster formation makes this movement impossible.[31]

[31] Since restructuring infinitives form clusters and non-restructuring infinitives do not, we should expect that only non-restructuring infinitives allow subgapping. However, restructuring infinitives are the ones that allow gapping, non-restructuring ones disallow it, see (4.55-b) above. I leave this as an open question for now.

4.4.2.2. Argument structure

Turning to the argument structure differences, we have seen in (4.58-b) above that subgapping allows voice mismatches while gapping does not. I argue that this difference falls out from the general identity requirement of coordinate ellipsis. In subgapping, a VP is a remnant and can, if not must, contrast with an antecedent VP, in lexical material as well as in argument structure. In gapping, the whole VP cannot be a remnant, since the verb is deleted. The argument structure of the involved VP must match the antecedent one. Specifically, we could adopt the identity requirement proposed in Rudin (2019), where each syntactic head in the ellipsis site is checked against an antecedent head. In subgapping, the voice-encoding head is outside of the ellipsis site and does not have to match any antecedent. In gapping, the voice-encoding head is deleted and any mismatch with an antecedent head would incur a parallelism violation, leading to ungrammaticality.

4.4.3. Subgapping is ellipsis

Lastly, let me employ tests for ellipsis constructions proposed by Merchant (2013). Subgapping passes them, suggesting that ellipsis is indeed involved. Merchant's first test examines extraction out of the ellipsis site. In an ellipsis construction, elements can move out of the constituent that is deleted, since the ellipsis site can be shown to contain parallel, regular, although unpronounced syntax (see also e.g., Baltin 2007, Van Craenenbroeck & Lipták 2013, Winkler 2013). Merchant illustrates this with a minimal pair of VP-ellipsis and null complement anaphora (NCA), (4.71).

(4.71) a. Which films did he refuse to see, and which films did he agree to?

b. *Which films did he refuse to see, and which films did he agree?

(Merchant 2013)

Extraction in (4.71-a) is possible if the missing VP is structurally present and contains the external Merge position of *which films*. This is in contrast to the non-ellipsis construction (4.71-b), where the relevant syntactic structure is not present.

Turning to subgapping, if we take seriously the arguments from the sections above and assume that in gapping, and in subgapping, much more than only the verb is deleted, we can see that movement out of the ellipsis site is indeed possible. Consider the baseline subgapping example in (4.72).

(4.72) Ich habe dem Mann ein Buch geschenkt und du ~~hast~~
I have the.DAT man a book given.as.present and you have
~~dem~~ ~~Mann~~ eine CD gegeben.
the.DAT man a CD given
"I gave the man a book as a present and you gave a CD to the man."

As (4.73) shows, *wh*-movement out of the ellipsis site is possible.

(4.73) a. Wem habe ich ein Buch geschenkt und du eine CD
who.DAT have I a book given.as.present and you a CD
gegeben?
given
"To who did I give a book (as a present) and you a CD?"

b. ... and [$_{\text{ForceP}}$ [$_{\text{DP}}$ you] [$_{\text{VP}}$ a CD given] [$_{\text{FinP}}$ *have ... to who ...*]]

If subgapping is ellipsis and behaves just like regular verb gapping, this extraction is entirely expected.

Second, Merchant shows that in ellipsis constructions, reflexes of agreement triggered by deleted elements can be visible on non-deleted elements. As an example, plural agreement on the verb in (4.74) suggests the presence of a non-pronounced (i.e., elided) plural nominal.

(4.74) First, there were bananas available, and then there weren't.
(Merchant 2013)

Such agreement effects are absent from the "understood" elements in anaphoric constructions like NCA.

In subgapping (4.75) we find that a remnant can show agreement triggered by a deleted element. In (4.75), only a part of the complex DP *[dem Kaiser [als großen Feldherrn]]* survives ellipsis. Crucially, accusative case on *Feldherrn* is assigned by the deleted head nominal *Kaiser*.

(4.75) ?Er hat dem Kaiser als Liebhaber der Künste eine
he has the.DAT emperor.DAT as admirer.ACC of.the arts a
Oper geschrieben und sie —$_{AUX}$ —$_{DP}$ als großen
opera written and she as great.ACC
Feldherrn eine Statue errichtet.
commander.ACC a statue built
"He has written an opera for the emperor since he is an admirer of the arts and she has built him a statue as he is a great commander."

The example is quite complex and somewhat marked. Note however that it becomes completely ungrammatical if there is no subgapping, (4.76).

(4.76) *Er hat dem Kaiser als Liebhaber der Künste eine
he has the.DAT emperor.DAT as admirer.ACC of.the arts a
Oper geschrieben und sie hat —$_{DP}$ als großen Feldherrn
opera written and she has as great.ACC commander.ACC
eine Statue errichtet.
a statue built

Thus, we are not dealing with a simple case of NP ellipsis. Deletion of the head nominal *dem Kaiser* is indeed only possible in gapping. What has been deleted in (4.75) is the auxiliary and *dem Kaiser*, while all the other constituents move to escape ellipsis. Since *Kaiser* is syntactically present, it can assign accusative

case to its complement. Hence, subgapping must be a case of ellipsis with a fully articulate non-pronounced syntax.

Merchant's last diagnostic for ellipsis is the possibility of inverse scope. Quantificational elements inside ellipsis sites can take wide scope over overt elements, (4.77-a). In anaphoric constructions, this kind of inverse scope is impossible, see (4.77-b).

(4.77) a. A doctor examined every patient, and then a nurse did.
($\exists > \forall, \forall > \exists$)

b. A doctor examined every patient, and then a nurse did it.
($\exists > \forall, *\forall > \exists$)

German is more rigid with respect to scope interpretations than English. In order to make inverse scope possible there has to be a movement dependency (see e.g., Frey 1993, Heck 2001, Sauerland 2001, but also Pafel 1991, Philipp & Zimmermann 2020 for a different view). Thus, the indirect object with an existential quantifier is fronted in (4.78). (4.78) allows the inverse scope interpretation.

(4.78) [Mit einer Zeichnung] habe ich jeden Karton __ beklebt und
with a illustration have I every cardboard on.glued and
~~hast~~ du jede Buchseite __ verschönert.
you every book.page embellished
"I glued an illustration on every cardboard and you embellished every page with an illustration." ($\exists > \forall, \forall > \exists$)

To conclude this section, I take these tests to sufficiently demonstrate that subgapping (in German) constitutes proper ellipsis, and that any differences to lexical verb gapping are effects of independent properties of German verb complexes or the parallelism requirement. I have shown in this section that subgapping and gapping behave alike with respect to the embedding restrictions on the antecedent and the gap, and with respect to their sensitivity to an

overt complementizer. I have reviewed observations from the literature on the irregularities of subgapping: for some speakers, subgapping is impossible in forward direction in verb-final clauses; restructuring infinitives allow it, while non-restructuring infinitives do not allow it; and voice mismatches are allowed in subgapping, but not in gapping. I have offered alternative explanations for these discrepancies. Lastly, I have used tests for ellipsis to demonstrate that subgapping indeed does involve deletion, just like regular verbal gapping.

4.5. Chapter summary

This chapter examined certain properties of gapping in German that are relevant to the analysis of determiner sharing. It showed evidence for the clausal size of conjuncts involved in gapping, and for the existence of a movement dependency. Based on some of the literature on German gapping, I propose that gapping equals deletion of the lowest projection in an articulate left periphery, FinP. Verbal elements are obligatorily omitted if they are realized in the head of FinP. When FinP is filled with a complementizer, that element is obligatorily deleted, while verbs may survive ellipsis. The last section investigated subgapping, a special case of gapping, and showed that it too can be characterized as FinP-deletion. The following chapter examines the movement type that derives determiner sharing constructions if it occurs in gapping: split topicalization.

5. Split topicalization

In addition to gapping, the second ingredient for the analysis of determiner sharing are split topicalizations, sometimes also known as NP-splits. Split topicalizations, as in (5.1), repeated from above, have received much attention in the literature (e.g., Fanselow 1988, Tappe 1989, Bhatt 1990, Fanselow 1993, Pittner 1995, Kniffka 1996, Kuhn 1999, De Kuthy 2002, Fanselow & Ćavar 2002, Nakanishi 2005, Fanselow & Féry 2006, Puig Waldmüller 2006, Van Hoof 2006/2017, Nolda 2007, Ott 2011). They are generally characterized by the fact that phonetic material that belongs to a single noun phrase appears in more than one position.[32]

[32]It is not the case that this material is associated with exactly two positions. Splits can be more complex, as in (i). Other subtypes of splits include so called gapless splits (ii), and PP-splits (iii). See Ott (2011) and references therein for more discussion of other types. In this chapter, I limit the discussion to simple splits like (5.1).

(i) Fehler sind ihm so richtig dumme gestern keine unterlaufen.
mistakes are him PARTC really stupid yesterday no occur
"As for mistakes, he didn't make any really stupid ones yesterday." (Pafel 1996)

(ii) Rotwein haben wir heute kalifornischen Merlot.
red.wine have we today Californian Merlot
"As for red wine, we have Californian Merlot today." (Ott 2011)

(iii) In Schlössern hat er noch in keinen *t* gewohnt.
in castles has he yet in none lived
"As for castles, so far he has not lived in any." (Ott 2011)

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

b. Frauen haben bislang nur wenige *t* eine Sonate geschrieben.
women have so.far only few a sonata written
"As for women, only a few have written a sonata."

Fanselow and Ćavar (2002: 67, modified)

I will refer to the sentence-initial, topicalized part of the noun phrase as TOP, and to the part that occurs in the base-generated position in the middle field as REM, following Ott (2011).

(5.2) $\text{Rosen}_{\text{TOP}}$ hab ich dir schon $\text{einige}_{\text{REM}}$ *t* geschenkt.

This chapter reviews the properties of split topicalizations in German and compares them to those of determiner sharing constructions. I will show that these constructions show enough similarities to plausibly argue that determiner sharing is created by split topicalization. I briefly review analyses of splits, but crucially, the analysis of determiner sharing that I propose is compatible with any analysis of split topicalization that involves movement.

5.1. Properties of split topicalizations

5.1.1. Argument structure

The most prominent property of split nominals is their discontinuity: the nominal head of the argument occurs in sentence-initial topic position, and there is apparently a gap in its base position in the middle field. TOP and REM are parts of the same argument. They show concord with respect to case, gender, and number (with some exceptions, see below). (5.3) illustrates that TOP must be marked with the case that is assigned to REM.

(5.3) Einer/*eine alten/*alte Schildkröte bin ich noch
a.DAT/ a.NOM/ACC old.DAT/ old.NOM/ACC turtle am I yet
keiner *t* begegnet.
no.DAT met
"As for old turtles, I haven't met one yet."
(Puig Waldmüller 2006: 9, modified)

We will review more connectivity effects in section 5.1.2.2 below.

5.1.2. A-bar movement properties

5.1.2.1. Island constraints

The classic resource for A′ properties of splits is Van Riemsdijk (1989). First, he shows that splits obey island constraints. This is illustrated for complex NPs, coordinate structures, and adverbial islands below.

(5.4) *Complex NP island*

a. *Augen kenne ich [keine Frau die schönere *t* hat] als ich.
eyes know I no woman who prettier has than me
intended: *"As for eyes, I don't know any woman who has more beautiful ones than me."* (Van Hoof 2017:7)

b. *Bücher hat Kai [die Vermutung dass Amina nur drei langweilige französische *t* gelesen hat].
books has Kai the suspicion that Amina only three boring French read has
intended: *"As for books, Kai has the suspicion that Amina has only read three boring French ones."* (Ott 2011:25)

(5.5) *Coordinate structure constraint*

*Romane hat Benni drei *t* gelesen und will Caro viele (*Autos) kaufen.
novels has Benni three read and wants Caro many cars buy
intended: *"As for novels, Benni has read three and Caro wants to buy many cars."* (Ott 2011:25)

(5.6) *Adverbial island*

*(In) Schlössern ist Horst in ein Haus gezogen [nachdem er in mehreren *t* gewohnt hatte].
in castles is Horst into a house moved after he in several lived had
intended: *"As for castles, after Horst had lived in many of them, he moved into a house."* (Ott 2011:25)

Second, Van Riemsdijk shows that NP splits can license parasitic gaps, as in (5.7).

(5.7) Briefe hat sie [ohne *pg* zu Ende zu lesen] noch keine *t* weggeworfen.
letters has she without to end to read yet no thrown.away
"As for letters, she has not yet thrown any away without reading them." (Van Riemsdijk 1989)

Third, Frey (2000) argues that splits can only be derived by movement to topic/focus-positions, which lands above sentential adverbs as in (5.8-a), not by movement which targets a position lower than sentential adverbs, which he characterizes as scrambling (5.8-b).

(5.8) a. dass er teure Bücher wahrscheinlich der Frau keine
that he expensive books probably to.the woman no
schenken wollte
give wanted
"that he probably did not want to give the woman expensive books"

b. ?*dass er wahrscheinlich *teure* *Bücher* der Frau *keine*
that he probably expensive books to.the woman no
schenken wollte
give wanted (Frey 2000)

Lastly, TOP can undergo long-distance topicalization, as in (5.9).

(5.9) Eine Lösung sagt er [hat er eine bessere *t* als ich.]
a solution says he has he a better than I
"As for solutions, he says he has a better one than me."
(Van Riemsdijk 1989)

All of these observations suggest that there is A′ movement involved in the creation of split NPs.

5.1.2.2. Connectivity effects

Additionally, splits show connectivity effects to the middle field. First consider reconstruction for anaphor binding in (5.10). The reciprocal expression *einander* must be bound in its local domain. In order to be properly bound, the expression in TOP must be reconstructed to the REM position.

(5.10) [Bücher von einander$_i$] sind uns$_i$ keine *t* bekannt.
books of each.other are to.us no known
"We don't know of books of each other."
(Van Riemsdijk 1989:115)

Similarly, reconstruction of non-reflexive pronouns in TOP offers evidence for an A′ dependency. A pronoun must not be bound in its domain. It must be obligatorily non-coreferential with the referential expression in (5.11). The

ungrammaticality of (5.11) suggests that the pronoun is reconstructed into the binding domain of the R-expression, thereby violating Condition B.

(5.11) *[Bücher von ihr$_i$] hat Lara$_i$ keine *t* im Schrank.
books of her has Lara no on.the shelf
intended: *"As for her own books, Lara has none on her shelf."*
(Puig Waldmüller 2006: 17)

R-expressions may also not be coreferential with pronouns in REM, see (5.12).

(5.12) [Bücher von Lara$_i$] hat *sie$_i$/??ihre$_i$ Mutter keine *t* im Schrank.
books of Lara has she/ her mother no on.the shelf
intended: *"As for Lara's books, she/her mother has none on the shelf."*
(Puig Waldmüller 2006: 17)

All of these binding principle reconstruction effects suggest that there is a movement dependency between REM and TOP. Recall from above that morphological case also suggests that the topicalized noun must bear some relation to the predicate (5.13).

(5.13) Männern/*Männer helfe ich nur netten *t*.
men.DAT/ men.NOM help I only nice
"As for men, I only help nice ones."

These connectivity effects indicate that the topicalized phrase is in a close relation to REM's position, if not originating in REM.

Another classic argument from Van Riemsdijk (1989) concerns the preservation of the supposed base order of prenominal adjectives. Cinque (1994) and Scott (2002) propose that attributive adjectives are subject to ordering constraints (see also e.g., Valois 2006, Truswell 2009). They suggest that the nominal structure is enriched with a hierarchy of functional projections that correspond to the class of property an adjective denotes. The adjectival modifiers in the topicalized constituent are supposed to be lower on the adjecti-

val hierarchy than the ones in REM, such that restrictions on the ordering of adjectives are respected when topicalization is undone and the element is reconstructed into the presumed base position. In (5.14), reconstructing the order to *nationality* > *age* is reported by Van Riemsdijk (1989:122) to result in ungrammaticality.

(5.14) a. Ein amerikanisches Auto kann ich mir kein neues *t* leisten.
an American car can I REFL no new afford

b. *Ein neues Auto kann ich mir kein amerikanisches *t* leisten.
a new car can I REFL no American afford

(5.15) a. ein neues amerikanisches Auto
a new American car

b. *ein amerikanisches neues Auto
an American new car

Ott (2011:30) does not share the judgment that (5.14-b) and (5.15-b) are unacceptable. He notes that with proper intonation, adjectival reorderings are easily possible, and that these order effects are orthogonal to the discussion of movement.

5.1.3. Evidence against an A-bar dependency

5.1.3.1. Island repair

However, some properties of split topicalizations seem to argue against movement out of a single phrase. First, Fanselow & Ćavar (2002) note that some island constraints can be violated by split formation. Subjects (of non-unaccusative verbs) and dative and genitive objects are islands for extraction (e.g., Müller 1996), but can be part of a split topicalization (Fanselow 1988, 1993, Kniffka 1996), see (5.16) and (5.17).

(5.16) a. *An Maria haben mir keine Briefe *t* gefallen
to Mary have me no letters pleased

b. Briefe an Maria gefallen mir keine *t*
letters to Mary please me no
"As for letters to Mary, none of them please me."

(Fanselow & Ćavar 2002: 92)

(5.17) a. *Über Polen ist hier noch keinen Büchern *t* ein Preis
about Poland is here yet no books.DAT a prize
verliehen worden
awarded been
intended: *"No books about Poland have been awarded with a prize here."*

b. Interessanten Büchern über Polen ist hier noch keinen *t*
interesting books about Poland is here yet no
ein Preis verliehen worden
a prize awarded been
"As for interesting books about Poland, no prize have been awarded to any of them here so far." (Fanselow & Ćavar 2002: 73)

Merchant (2001: 161f.) observes that these are precisely the types of islands that can be violated under certain conditions. He notices that ellipses (sluicing and fragment answers, also gapping, Coppock 2001) violate subject islands among others. Merchant (2001) proposes that the islands that can be violated are PF-islands, in the sense that the offending violation occurs in the post-syntax, and is nullified when that part is deleted (see also Nakao 2009). Although the explanation for repair by ellipsis does not carry over perfectly to splits (but see Fanselow & Ćavar 2002 for an account which involves ellipsis), it should be stressed that the islands in (5.17) and (5.16) are known to be repairable. Islands that cannot be repaired also cannot be violated by split topicalizations, as we have seen in 5.1.2.1 above.

5.1.3.2. Antecedent-gap mismatches

Another frequently cited problem for movement accounts are antecedent-gap mismatches. These suggest that split topicalization does not involve a single continuous underlying constituent of the form [$_{DP}$ REM [$_{NP}$ TOP]], such that the topicalized element cannot be reconstructed into its base position to form a grammatical sentence. For example, prepositions and articles can be doubled in splits (in some dialects), as in (5.18-a), (5.19-a). However, in the presumed base position, doubling of these elements is ungrammatical (5.18-b) and (5.19-b).

(5.18) a. In Schlössern hat er noch in keinen *t* gewohnt.
in castles has he yet in no lived
"As for castles, he hasn't lived in one yet."

b. *Er hat noch [in keinen [in Schlössern]] gewohnt.
he has yet in no in castles lived
(Fanselow 1988)

(5.19) a. Ein amerikanisches Auto kann er sich kein neues *t* leisten.
an American car can he REFL no new afford
"As for American cars, he can't afford a new one."

b. *Er kann sich [kein neues [ein amerikanisches Auto]] leisten.
he can REFL no new an American car afford
(Fanselow 1988)

Another instance of antecedent-gap mismatches involves inflection: the inflection markers in TOP an REM can mismatch. German has three inflectional paradigms for the nominal modifier domain. They have been called strong, weak, and mixed inflection (see e.g., Zwicky 1986, Wunderlich 1997b, Gallmann 1998, Müller 2002, Schoorlemmer 2009). Attributive adjectives bear the strong inflection marker when they occur in a noun phrase without any determiner or with an invariant one (e.g., *viel* "much", *allerlei* "all kinds of", possessors), (5.20-a). With most determiners and quantifiers, adjectives

bear the weak form (e.g., with the definite article, demonstratives, *jed-* "every", *welch-* "which"), see (5.20-b). With some determiners (the indefinite article *ein*, *kein* "no", and possessive pronouns), the adjectives shows both weak and strong markers. This is the mixed form (5.20-c).

(5.20) *Adjectival inflection in German*

a. dick-e Gänse, allerlei dick-e Gänse
thick-STRONG geese, all.kinds.of thick-STRONG geese
strong

b. die dick-en Gänse, welche dick-en Gänse
the thick-WEAK geese, which thick-WEAK geese
weak

c. meine dick-en Gänse, keine dick-en Gänse, eine dick-e Gans
my thick-*weak* geese, no thick-*weak* geese, a thick-*strong* goose
mixed

In split topicalizations, the adjective in the topicalized nominal must obligatorily bear the strong inflection markers, see (5.21-a) vs. (5.21-b). In the base position, inflection obligatorily takes the weak form, (5.21-c). TOP and REM seem to be morphologically autonomous.

(5.21) a. Polnisch-e Gänse kauft sie keine *t*
Polish-STRONG geese buys she none
"As for Polish geese, she didn't buy any."

b. *Polnisch-en Gänse kauft sie keine *t*
Polish-WEAK geese buys she none

c. keine polnisch-en/ *polnisch-e Gänse
no Polish-WEAK Polish-STRONG geese
(Fanselow 1988: 99, modified)

On first glance, these mismatches seem to argue against a movement analysis. The inflection that is commanded in the base position (weak) should

also show up in the topicalized position. In other words, (5.21-b) should be grammatical. However, this line of reasoning implies that the morpho-phonological processes that determine the surface form of the adjective apply before the NP is topicalized. Ott (2011) criticizes this argument and points out that these processes can plausibly be considered post-syntactic phenomena (see also Van Hoof 2006/2017). The pattern in (5.21) is entirely expected if the split happens before the morphological surface form is determined. The topicalized nominal *polnische Gänse* in (5.21-a) does not contain a determiner. In such an environment, the adjective should bear the strong inflection marker, parallel to (5.20-a) above. In the presence of a determiner, the weak form is required. At the point where the inflection in the base position is determined, the nominal has already moved away, i.e., there is only a lower copy which will not be pronounced. When the inflection in the topicalized nominal is determined, it occurs in an environment that requires strong inflection. Thus, Ott argues, if the order of operations is taken seriously, these mismatches cannot be used as an argument against a single continuous base phrase. It should also be noted that an argument against a single continuous base constituent is not automatically an argument against movement. Some analyses of split topicalizations propose that TOP is not a part of REM at the beginning of the derivation, but that TOP and REM are merged as distinct constituents, see section 5.3 below. In such a case, the two nominal parts start out as morphologically autonomous, and movement is independently possible.

In sum, there is strong evidence for an A′ dependency in split topicalization. Arguments cited as evidence against movement turn out to be arguments against a single underlying constituent, rather than against movement.

5.1.4. Restrictions on the shape of TOP and REM

There are certain restrictions on the form and meaning of TOP and REM.

5.1.4.1. TOP

The topicalized phrase typically contains discourse-old information. It is obligatorily non-quantificational and indefinite (see e.g., Fanselow 1988, Nolda 2007, Ott 2011). Ott (2011) argues that it must be property-denoting. Elements that may occur as TOP include mass nouns, and singular or plural indefinites. They can optionally be modified by an adjective or by a relative clause, (5.22).

(5.22) a. Papier hat er nur rosanes *t*.
paper has he only pink (Puig Waldmüller 2006: 5)

b. Lampe hab ich keine *t*.
lamp have I no (Fanselow & Ćavar 2002: 95)

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

d. [Autos [die lange halten]] kann ich mir nur wenige *t* leisten.
cars that long last can I me only few afford
(Ott 2011: 20f.)

Van Hoof (1997) illustrates that definite or quantified TOPs are ungrammatical, (5.23).

(5.23) a. *Das Auto kann ich mir nur das neue *t* von BMW leisten.
the car can I REFL only the new by BMW afford

b. *Viele/ manche/ wenige/ keine/ drei Romane hat sie nur russische *t* gelesen.
many some few no three novels has she only Russian read (Van Hoof 1997 via Ott 2011:21)

As already shown in (5.23-b), an indefinite article may occur in TOP. Ott (2011) observes that it can also be reduced or omitted altogether, (5.24). However, it is frequently noted that there is dialectal and speaker variation when it comes to omission of the article (see e.g., discussion in Ott 2011 vs. Tappe 1989, Puig Waldmüller 2006, Nolda 2007).

(5.24) Ein/'n/∅ Auto kann ich mir höchstens ein gebrauchtes *t* leisten.
a car can I REFL at.best a used afford
"As for cars, I could at best afford a used one." (Ott 2011:21)

These properties of TOP will suffice for our purposes. See Ott (2011) and references therein for a more thorough exposition.

5.1.4.2. REM

The remnant part of the split NP in the middle field contains information that is new or informative in the discourse. It is less restricted than TOP. It may contain adjectives (5.25-a), indefinites[33] (5.25-b), cardinals (5.25-c), deictic expressions and demonstratives (5.25-d), as well as definites (5.25-e). Both weak (*einige, viele, wenige* "some, many, few") and strong quantifiers (*alle, die meisten* "all, most") are allowed in REM, (5.25-b). Recall from section 2.1.3 that quantifiers can be classified according to their ability to occur in a *there*-existential clause (Milsark 1974, 1977). Only weak quantifiers can surface in *there*-sentences. An additional diagnostic is the ability to allow extraction

[33]Indefinite pronouns show different behaviors. While *jemand/niemand* "somebody/nobody" cannot surface in REM, *welch-* "some" and *etwas* "something" can, see (i).

(i) a. *Apotheker hat gestern jemand/niemand gekündigt.
pharmacist has yesterday somebody/nobody quit
(Puig Waldmüller 2006: 7f.)

b. Pflanzen hatte sie immer welche im Angebot.
plants had she always some on offer

c. Blut hatte er inzwischen etwas verloren.
blood has he meanwhile some lost (Van Hoof 1997)

out of a quantifier's NP. Only weak quantifiers allow extraction. As (5.25-b) shows, both weak and strong quantifiers can be REM in splits.

(5.25) a. Romane lese ich nur französische *t*.
novels read I only French

b. Bücher kann er sich eines/ keine/ welche/ einige/ viele/
books can he REFL one no some several many
alle/ die meisten *t* ausborgen.
all most borrow

c. Bücher will ich mir morgen zwei *t* ausborgen.
books want I me tomorrow two borrow

d. Hamster habe ich nur diesen/ den einen da gefüttert.
hamster have I only this the one there fed

e. Hamster habe ich nur den braunen *t* gefüttert.
hamster have I only the brown fed

(Puig Waldmüller 2006: 7f.)

Van Hoof (1997) observes that REMs containing a bare adjective or weak quantifiers are rated the most unmarked. Note that some of the cited examples contain focus-sensitive particles like *nur* "only" and *sogar* "even". I take them not be part of REM, but rather adjoined to a higher functional projection, following Büring & Hartmann (2001), Kleemann-Krämer (2010), Ott (2011) (contra Reis 2005). Such particles introduce a presupposition that there exists some set of alternatives to which they make reference: *nur* restricts the set by singling out one member, *sogar* expands it by adding a member (Jackendoff 1972, Rooth 1985, 1992b). In this way they introduce contrastive focus (Dik et al. 1981). Note however that the particles are optional, splits are well-formed without them.

This concludes the discussion of the relevant properties of split topicalizations. The following section examines whether the observations we have made about splits match the properties of determiner sharing structures.

5.2. Parallelism to determiner sharing

If determiner sharing structures are derived by split topicalization, and subsequent ellipsis of REM, we expect that sharing structures show similarities to splits, specifically with respect to the reflexes of movement and the elements that can be left in REM. We have seen that NP splits show the following signs of A′ movement: sensitivity to (most) islands, licensing of parasitic gaps, and reconstruction effects. We have also seen that the creation of gapping structures involves a movement dependency (section 4.3). If the hypothesis on the basis of this work is true and determiner sharing arises from the combination of split topicalization and gapping, we expect determiner sharing structures to show the same effects of A′ movement. First, it seems that sharing is indeed impossible out of islands, (5.26) and (5.27).

(5.26) *Complex NP island*

a. *Ich kenne niemanden der jedes Papier von Chomsky
I know nobody who every paper by Chomsky
gelesen hat oder Buch, von Lasnik.
read has or book by Lasnik

b. ... oder [$_{\text{ForceP}}$ Buch$_1$ [$_{\text{PP}}$ von Lasnik]$_2$ [~~$_{\text{FinP}}$ ich kenne [niemanden der jedes t_1 t_2 gelesen hat~~]]]

(5.27) *Adjunct island*

a. *Ich rufe dich an bevor jeder Schüler Geige übt und
I call you PARTC before every student violin practices and
Lehrer Schlagzeug (denn dann wird es zu laut).
teacher drums because then gets EXPL too loud

b. ... und [$_{\text{ForceP}}$ Lehrer$_1$ Schlagzeug$_2$ [~~$_{\text{FinP}}$ ... bevor jeder t_1 t_2 übt~~]]

The TOPs *Buch* "book", *Lehrer* "teacher" in (5.26) and (5.27) are contained in a relative clause modifying the indefinite pronoun *niemand* "nobody" in the first case, and in an adjunct clause introduced by *bevor* "before" in the latter

case. The ungrammaticality of such examples suggests that movement is involved in the creation of determiner sharing, and that it is sensitive to island constraints.

Since so much material is deleted in determiner sharing, it is difficult to test the licensing of parasitic gaps and reconstruction. However, we can see that another characteristic of A′ movement is present with the remnants of determiner sharing. The noun with the missing determiner can move long distance. Consider (5.28), where *Lehrer* "teacher" moves from inside an embedded clause to its surface position.

(5.28) a. Linh hat gesagt dass jeder Schüler hier Geige spielt und
Linh has said that every student here violin plays and
Nils, Lehrer.
Nils teacher
"Linh said that every student here plays the violin and Nils said that every teacher here plays the violin."

b. ... und [$_{\text{ForceP}}$ Nils$_1$ Lehrer$_2$ ~~[$_{\text{FinP}}$ hat t_1 gesagt [$_{\text{ForceP}}$ jeder t_2 hier Geige spielt]]~~]

This ability of the remnant to move successive-cyclically is another argument for the presence of A′ movement in determiner sharing.

We have seen that there are restrictions on the lexical elements that can occur in a determiner sharing construction, as discussed in 3.2.5 above, as well as in split topicalizations. Crucially, the elements that can be shared are identical to the ones that may not be part of TOP, i.e., that must be left in REM (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", (5.29) and (5.30). It must be noted, however, that there is a lot of variation between speakers, and not all speakers accept all of these elements in a sharing construction. To the best of my knowledge,

determiner sharing is more restricted than split topicalization, i.e., a speaker may not accept sharing with a certain element, but will accept splits with it.

(5.29) a. Viele/ wenige/ alle/ manche Ammern mögen Insekten und
many few all some buntings like insects and
__ Finken __ Samen.
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
every this that no finch nests in.the nestbox and
__ Rabe __ im Baum.
raven in.the tree
"Every/ this/ that/ no finch nests in the nestbox and every/ this/ that/ no raven nests in the tree."

(5.30) a. Ammern mag ich eigentlich (nur) viele/ wenige/ alle/
buntings like I actually only many few all
manche *t*.
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."

Although I cannot provide an exhaustive list of quantifiers, it seems that all the elements that can occur in sharing constructions can also occur in splits. Turning to elements that cannot be shared, we will first look at the definite article. (5.31) shows it is unacceptable in sharing constructions.[34]

[34]The example is based on lyrics of the German folk song "Die Vogelhochzeit" (the bird wedding).

(5.31) a. *Die Drossel war der Bräutigam, ___D Amsel ___V die Braut.
the thrush was the groom blackbird the bride

b. *Der Uhu bringt die Hochzeitsschuhe, ___D Kuckuck ___V
the eagle.owl brings the wedding.shoes cuckoo
das Hochzeitskleid.
the wedding.dress

c. *Das Täubchen bringt die Haube, ___D Spätzchen ___V den
the dove brings the bonnet sparrow the
Trauring.
ring

As can be seen in (5.32), it is also impossible to leave a definite article in REM in split topicalizations.

(5.32) *Drossel hab ich die *t* im Rosenbusch gefunden.
thrush have I the in.the rose.bush found

There are examples like (5.33), in which it seems that the definite article can surface in REM.

(5.33) Auto kann ich mir nur das neue *t* von BMW leisten.
car can I REFL only the new by BMW afford
"As for cars, I can only afford the new one by BMW."

However, it seems that a definite article can only surface in REM if it is followed by an adjective. This suggests that in (5.33), we are actually dealing with a gapless split, in which the adjective has been nominalized, as in (5.34).

(5.34) Auto kann ich mir nur das Neue von BMW leisten.
car.ACC can I REFL only the new.NLMZ.ACC by BMW afford

Evidence for the nominalization reanalysis comes from the lack of a violation of the adjectival order. Examples for unmarked orderings are given in

(5.35). Re-ordering is possible, but results in markedness and requires a certain prosody to be felicitous, (5.36).

(5.35) a. das neue rote französische Auto
the new red Franch car

b. sein vierter großer heißer Pfannkuchen
his fourth big hot pancake

(5.36) a. #das französische neue rote Auto
the French new red car

b. ?*sein heißer vierter großer Pfannkuchen
his hot fourth big pancake

In splits, we can easily order an attributive adjective that occurs relatively low on the hierarchy before the nominalized adjective that occurs relatively high on the hierarchy without any markedness, (5.37).

(5.37) Pfannkuchen hat er sogar den heißen Großen gegessen.
pancakes has he even the hot big.one eaten
"As for pancakes, he has even eaten the hot big one."

This suggests that definite determiners cannot be part of simple splits and cannot be left behind in REM when TOP moves away. For analyses of gapless splits see e.g., Ott & Nicolae (2010), Ott (2011). Summarizing what we have seen so far, the definite article seems to be an element that is allowed neither in splits nor in sharing constructions.

Another element that cannot be shared is *ein-*, (5.38). *Ein-* is ambiguous between the indefinite article and the numeral "one".

(5.38) *Ein-e Drossel war der Bräutigam und $___D$ Amsel $___V$ die
a/one-F thrush.F was the groom and blackbird.F the
Braut.
bride

However, it seems that splits are quite possible with this element, (5.39).

(5.39) Drossel habe ich eine *t* im Rosenbusch gefunden.
thrush have I a/one in.the rose.bush found
"As for thrushes, I found one in the rose bush."

It is not obvious that the occurrence of *ein-* here is the article or instead the numeral. Ott (2011) provides a way to distinguish between the two. The article can usually be reduced to *'ne*, whereas the numeral cannot, (5.40). The reduced version of (5.39) indeed becomes ungrammatical, (5.41). This ungrammaticality suggests that the element in REM in (5.39) is the numeral, not the indefinite article.

(5.40) a. Ich hab gestern 'ne Katze gesehen.
I have yesterday a cat seen

b. #Ich hab nur 'ne Katze, nicht zwei oder drei.
I have only one cat not two or three

(5.41) *Drossel hab ich 'ne *t* im Rosenbusch gefunden.
thrush have I one in.the rose.bush found

Similarly, it can be argued that the *ein-* in REM is a numeral because it contrasts with other numerals, and not with full DPs as would be expected if it was an indefinite article, (5.42).

(5.42) a. Auto kann sie sich nur eins *t* leisten, aber keinesfalls zwei
car can she REFL only one afford but in.no.case two
oder drei.
or three
"As for cars, the can only afford one, but not two or three."

b. #Auto kann sie sich nur eins *t* leisten, aber kein Haus oder
car can she REFL only one afford but no house or
Grundstück.
plot.of.land

(5.43) shows that the reduced article cannot be shared, either.

(5.43) *'Ne Drossel war der Bräutigam und ___$_D$ Amsel ___$_V$ die Braut.
a thrush was the groom and blackbird the bride

I thus conclude that the *ein-* that is possible in splits is the numeral, not the indefinite article. Just as the definite article, the indefinite article can neither occur in sharing constructions nor in splits. As an explanation why articles cannot be split off, Ott (2011) suggests that TOP contains a variable that needs to be bound by something combining with it, and that the (indefinite) article is not a suitable binder (based on Higginbotham 1985, Holmberg 1993). I offered another tentative explanation in 3.2.5. The articles might occupy a position in the nominal spine that is too low for the purposes of topicalization (based on Giusti 2002, Julien 2002). If they are merged very close to the head noun such that they must be contained in the constituent that is fronted, they will never be left behind in REM and potentially deleted in the course of gapping. It has also been argued elsewhere that, for whatever reason, articles do not form a natural class with quantifiers, demonstratives, possessives, etc. (Szabolcsi 1994, Giusti 1997, Roehrs 2006). It seems plausible then that the process that applies to quantifiers and demonstratives cannot apply to articles, although I cannot offer a detailed account here for reasons of scope.

Finally, there are three elements that do not behave as predicted. Numerals, possessive pronouns, and (bare) adjectives cannot be shared (5.44), but are genuinely possible in splits (5.45).

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

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

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

(5.45) a. Amseln hab ich zwei *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. Mantel hat Hildegard ihren nassen *t* tatsächlich im Kasten
coat has Hildegard her wet really in.the closet
aufgehängt.
hung
"As for her coat, Hildegard really hung up her wet one in the closet."
(Puig Waldmüller 2006: 69)

c. Wein hat sie nur georgischen *t* da.
wine has she only Georgian there
"As for wine, she only has a Georgian one."

While it has been suggested that numerals and adjectives are low in the nominal spine (e.g., Julien 2002), this cannot explain the contrast in (5.45) and (5.44). They are clearly high enough to be split off from the noun in split topicalizations. Possessive pronouns pose a similar problem. They arguably occupy a high position in the DP and can be split off, yet cannot be shared. There must be additional restrictions to sharing that come into play once ellipsis happens. It could be a problem of recoverability: the semantic composition of nouns and quantifiers is in some significant sense different than that of nouns and possessors/numerals/adjectives. I must leave this as an open question at this point.

In conclusion, this section highlighted the similarities between split topicalization and determiner sharing. Both involve A′ movement, as suggested by the ability to move long distance and by the sensitivity to island effects. We have seen that there is a significant overlap between the elements that can be

omitted in determiner sharing and the ones that can serve as REM in splits. The following section gives a brief overview of previous analyses of split topicalization.

5.3. Previous analyses

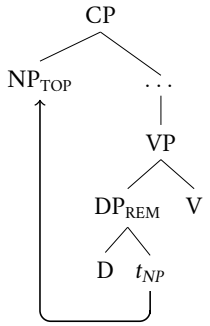
The core problem of split topicalizations lies their discontinuous nature. Syntactically, TOP and REM belong to a single argument of a predicate that surfaces in different positions. However, as we have seen, morphologically, TOP and REM are somewhat independent. This has led researchers to propose a number of different analyses. The accounts mainly differ on the question whether TOP and REM are base-generated as a single phrase, or as two (or more) distinct phrases. Virtually all analyses agree that movement from the base position to the sentence-initial position is required (for non-movement analyses see Haider 1990, Pittner 1995, Ballweg 1997). The most prominent approaches are classified in (5.46).

(5.46) *Analyses of split topicalization*

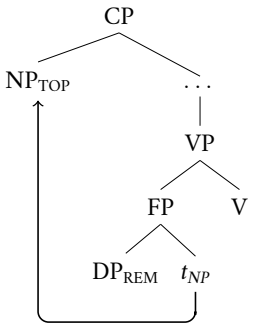
	single source phrase	*base generation of distinct phrases*
movement	Van Riemsdijk (1989), Bhatt (1990)	Fanselow (1988, 1990, 1993), Fanselow & Ćavar (2002), Roehrs (2009), Ott (2011)
no movement	—	Haider (1990)

The basic ideas of the types of analyses are schematized in (5.47) – (5.49). It must be noted that the categories of TOP and REM differ in the analyses. For ease of exposition, TOP is always represented as DP and REM as NP in the schemata below, though that is not representative for every single account.

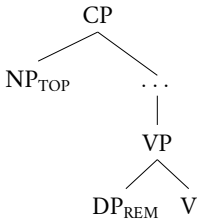
(5.47) *Movement out of a single source phrase*



(5.48) *Base-generation of distinct phrases & fronting*



(5.49) *Base-generation in surface structure positions*



Crucially, the details of the analyses of split topicalization do not matter for our purposes here. All analyses that posit movement of a phrase to the left periphery are compatible with the analysis of determiner sharing proposed here. Even a base-generation analysis like Haider (1990) could be compatible, to the extent that A′ movement and reconstructions properties can be explained. I refer the reader to the cited works for a detailed account of the intricacies of split topicalization.

5.4. Chapter summary

The focus of this chapter were the empirical properties of split topicalizations. We have seen that determiner sharing shows some similarities to splits. Both show evidence of A′ movement. The elements that can be shared largely match the elements that can be split.

5.5. Interim summary

This chapter concludes the more empirical part of this thesis. We have discussed the state of the art of determiner sharing, seen new observations in German, and formulated generalizations about determiner sharing structures that any theory must account for. I have then introduced the building blocks of the analysis I will propose: gapping and split topicalization. The next chapter explores how these two processes can be combined to produce a sharing structure and how this can explain the empirical observations.

6. Analysis

In this chapter, I propose a novel theory of determiner sharing in German. To the best of my knowledge, this is the first theoretical discussion of the phenomenon in that language. The idea is simple: the structure that has been called determiner sharing arises when two independent processes occur at the same time in the same clause. These operations are gapping and split topicalization. When split topicalization applies to a gapped structure, the determiner or quantifier that is left *in situ* will be contained in the ellipsis site created by gapping. This straightforwardly accounts for the dependency between determiner sharing and gapping. 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. Movement out of the ellipsis site plays a crucial role in the analysis. I have demonstrated in chapter 4 that movement is independently attested in gapping. The core of the proposal is that one of the necessary movement steps can split a noun phrase, stranding a determiner, which creates the illusion of determiner sharing.

This approach to determiner sharing can account for the empirical generalizations observed in the first part of this thesis. I thus argue that this analysis served as an argument for a move-and-delete theory of (non-constituent) ellipsis.

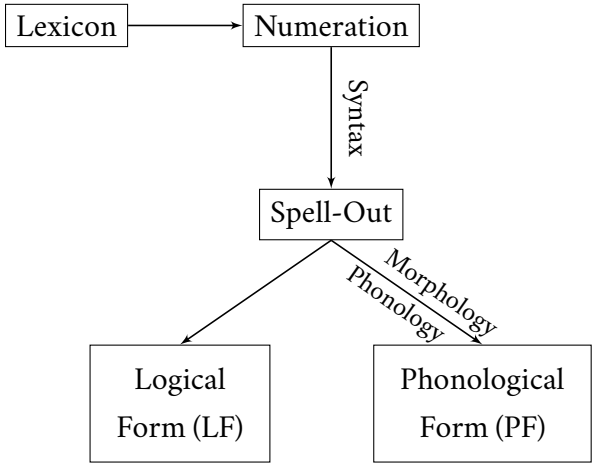
The chapter is structured as follows: the first section introduces the theoretical architecture. Section 6.2 shows an explicit step-by-step derivation of determiner sharing structures, first with subjects, and in section 6.3.3 with ob-

jects. Section 6.4 illustrates how the observed generalizations of determiner sharing from section 3.2 can be accounted for in this analysis. In section 6.5 I discuss an alternative analysis of ellipsis, based on syntactic structure removal. Section 6.6 concludes.

6.1. Theoretical assumptions

The present analysis is modeled in Minimalism (Chomsky 1995, 2000, 2001). I assume a Y-model of grammar in which morpho-phonology is fed by syntax, as in (6.1).

(6.1)



Ellipsis is a phenomenon that affects multiple modules of grammar. It is syntactically licensed, in the sense that only certain syntactic environments allow it (see e.g., Aelbrecht 2010). After Spell-out, the actual "deletion", which I understand as non-insertion of lexical items, happens in the branch leading to the phonological form (PF), while the meaning of the elided elements must be constructed at the Logical Form (LF) branch.

I adopt a syntax that is strictly derivational, in which structures are generated bottom up by the application of the two elementary operations (internal

and external) Merge and Agree (Chomsky 2000, 2001, Hauser et al. 2002 and subsequent related work). Merge combines two syntactic objects to form a new one. Agree establishes a relation between two syntactic features according to (6.2) under the conditions in (6.3).[35,36] All syntactic operations are feature driven (Last Resort), i.e., they must result in checking and deletion of the uninterpretable part of features.

(6.2) *Agree* (Chomsky 2000) :$\alpha > \beta$
Agree (α, β), where α is a probe and β is a matching goal, '>' is a c-command relation and uninterpretable features of α and β are checked/ deleted.

(6.3) *Conditions on Agree* (adapted from Amato 2021)

a. Interpretability condition: the probe is an uninterpretable feature [uF] that must be checked with an interpretable goal feature [F] before Spell-Out in order to delete the uninterpretability prefix *u-*.
b. Matching condition: matching is feature identity.
c. Locality condition: locality reduces to "closest c-command".
d. Minimality condition: the goal must be the closest matching feature in a c-command relation with the probe.

Closeness here is understood in terms of minimality, specifically the Minimal Link Condition (MLC, Fanselow 1991, Chomsky 1995) as in (6.4).

[35]Agree is defined as direction-neutral here. It can be implemented as a downwards or upwards search operation. There has been some debate in recent literature about the directionality of Agree (e.g., Zeijlstra 2012, Preminger 2013, Bjorkman & Zeijlstra 2014, Himmelreich 2017, Murphy & Puškar 2018, Diercks et al. 2020). The present analysis remains agnostic regarding this issue.

[36]I subscribe to a model of Agree where *checking* and "the erasure of uninterpretable features" (Chomsky 2000:122) is the primary aim. Valuation does not play a role in this analysis. For Agree and valuation see e.g., Bejár (2003), Pesetsky & Torrego (2007), Preminger (2014), Amato (2021).

(6.4) *Minimal Link Condition* (from Heck 2016: 16)
If in a representation H ...[...α...[...β...] ...] both α and β are of the right type to establish a relation R with H, then H can establish R only with α (but not with β).

Two other basic constraints on syntactic operations I adopt are the Phase Impenetrability Condition (6.5) and the Strict Cycle Condition (6.6).

(6.5) *Phase Impenetrability Condition* (PIC, Chomsky 2000:108)
In a phase α with the head H, the domain of H is not accessible to operations outside α; only H and its edge are accessible to such operations.

(6.6) *Strict Cycle Condition*
(SCC, Chomsky 1973, 1995, phrasing from Heck 2016:11)
If Σ is the root of the current phrase marker, then no operation can take place exclusively within Ω, where Ω is properly dominated by Σ.

I follow standard assumptions that vP and CP are phases (see Chomsky 2000, 2001, 2008). As will be discussed in section 6.1.1, I assume that CP is split up into two projections. I take the higher head of the two, which I call Force^0, to be the phase head. I remain agnostic on the question whether DPs are phases, see discussion in Svenonius (2004), Heck & Zimmermann (2004), Matushansky (2005), Heck et al. (2009).

Intermediate movement steps in successive-cyclic movement chains must be triggered in a way that is compatible with (6.5) and (6.6). There are different accounts of how this might be modeled. One prominent idea is that intermediate movement is triggered by unspecific edge features on phase heads (EF, Chomsky 2000 *et seq.*, see also e.g., Müller 2011, Georgi 2014). These features attract a phrase into the phase edge to make it accessible for fur-

ther operations. An alternative view is that features that trigger intermediate movement are specific to the type of movement (e.g., Den Dikken 2009, Abels 2012b), while still another school of thought proposes that intermediate movement comes about as a by-product of the interaction of a bottom-up syntactic derivation and Spell-Out, and does not posit any special features on phase heads to trigger it (e.g., Heck & Müller 2000b, 2003/2007, Bošković 2007, Stroik 1999, 2009). I do not subscribe to any model here. Where relevant, I represent an intermediate-movement feature simply as the feature of the attracted category with the probe prefix *u-*, e.g., [*u*D].

6.1.1. The left periphery and information structure

I will employ an essentially non-cartographic approach to the left periphery, following Lahne (2009), Manetta (2011), Abels (2012a) (see also Den Dikken 2020). My approach is non-cartographic in the sense that it does not assume Feature Singularity, (6.7).[37]

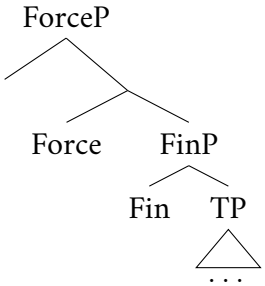
(6.7) *Feature Singularity* (Rizzi 2004)
Functional heads enter the derivation as the representation of exactly one syntactically relevant feature.

As discussed in section 4.2, I assume that the German CP layer contains two functional projections, see (6.8), repeated from above. The lower projection

[37] I decided to use a non-cartographic approach for illustration, however, an implementation in cartography is of course in principle possible. The trade-off between these views lies in the domain where we need to stipulate complexity. In cartographic approaches, it is the phrase structure where the stipulation of a hierarchy of functional projections is required. In non-cartographic approaches, we need to make assumptions about the combinatorial possibilities of features or about their order (see also Adger 2010, Manetta 2011, Boeckx 2014 for discussion). While there may be a deep reason to prefer one approach over the other, the present analysis of determiner sharing cannot help us in detecting it. It can plausibly be modeled in both.

FinP is the target of gapping, and may contain the complementizer or verb in V2. The higher projection, ForceP, hosts A′ landing sites.[38]

(6.8)



Evidence that complementizers occupy the lower clausal projection stems from word order restrictions. In varieties of German that allow the co-occurrence of complementizers and topicalized phrases, we can observe that the complementizer must follow the fronted phrase. Bayer (2004) shows for Bavarian that the complementizer *dass* seems to occupy the lower projection FinP, (6.9), (see also Salvesen 2013). The same can be observed in a dialect from central Hessen,[39] see (6.10).

(6.9) a. Frog-s doch, wia lang dass-s no dobleim woin!
ask-them PARTC how long COMP-they still stay want
"Ask them how long they want to stay!" (*Bavarian*, Bayer 2004)

b. [$_{\text{ForceP}}$ wia lang [$_{\text{FinP}}$ dass-s no dobleim woin]]

(6.10) a. Ich waas net wie lange dass ihr noh bleibe wollt.
I know not how long COMP you.PL still stay want

[38] Note that this is reminiscent of the theory of topicalization in Müller & Sternefeld (1993), Müller (1995). There it is proposed that topicalization targets the specifier of a functional projection TP that intervenes between CP and IP, where CP is the landing site for A′-movement, T^0 is the landing site for verb-movement, and IP encodes temporal information. Their sequence of projections CP–TP–IP corresponds to ForceP–FinP–TP in the present proposal.

[39] See also Müller (1989) for more on non-southern German dialects that exhibit features typically ascribed to southern varieties.

b. *Ich waas net dass wie lange ihr noh bleibe wollt.
I know not COMP how long you.PL still stay want
"I don't know how long you want to stay."

c. [$_{\text{ForceP}}$ wie lange [$_{\text{FinP}}$ dass ihr noh bleibe wollt]]

(*Hessian*, M. Berger, p.c.)

ForceP may contain multiple specifiers under certain conditions.[40] Generally, with the adoption of bare phrase structure in Chomsky (1995: 245) and the Phase Impenetrability Condition, multiple specifiers must be freely available.[41] In the analysis developed in this chapter, I argue that the remnants of gapping are specifiers of ForceP. As for their information structure, Winkler (2005) observes that the first remnant of gapping is interpreted as a contrastive topic, the second one as a contrastive focus.[42,43]

[40]In general, the German prefield, which I equate to Spec,ForceP, may only contain one constituent. I delay the discussion of multiply filled prefields and exceptional movement in ellipsis until section 7.1.

[41]See e.g., Chomsky (1995, 2000) for their use in successive-cyclic movement via Spec,vP and in object shift, Richards (2001) for multiple *wh*-fronting in Bulgarian, and Grewendorf & Sabel (1999) for multiple scrambling in Japanese.

[42]The characterization in this section can only be a broad sketch of the information-structural properties of ellipsis remnants. I emphasize that I do not aim to provide an exhaustive treatment of the information structure and refer the interested reader to the relevant literature, e.g., Carlson (2001a,b), Ágel & Kehrein (2013) and references cited in the main text.

[43]This is a newer direction in the research on the information structure of remnants. Traditionally, many researchers have assumed that all gapping remnants contain (new-information) focus, based on what has been called the Novelty Condition by Kuno (1976), (i).

(i) *Novelty Condition on Remnants*
(originally *The Functional Sentence Perspective on Gapping*, Kuno 1976:310)
The two constituents left behind by Gapping necessarily represent new information.

Since then, a larger discussion concerning the relation between focus and contrast has evolved in the literature, see e.g., Vallduví & Vilkuna (1998), Umbach (2004), Repp (2009). There is a school of thought that views contrastive topics as types of foci, see e.g., Krifka 1998 and the overview in Selkirk 1984. On the other hand, Kuno (1973), É. Kiss (1987), Büring (1997a) a.o. argue that contrastive topics are proper topics, as do Winkler (2005),

Winkler (2005), Konietzko & Winkler (2010), Molnár & Winkler (2010) examine the intonational and information-structural properties of gapping remnants and Winkler (2005) formulates the generalization in (6.11) (see Gergel et al. 2007, Gengel 2013 for a similar assumption, see also Hartmann 2000 and Féry & Hartmann 2005 for discussion of the prosodic properties of gapping that match the topic-focus structure).

(6.11) *Contrastive Topic and Focus Principle*

(abbreviated, Winkler 2005: 192)

In gapping, the first remnant is a contrastive topic, the second remnant a contrastive focus. [...]

The remnants undergo movement out of the elided constituent. As has been mentioned repeatedly, I propose that split topicalization is one of the movement types involved in determiner sharing. It has been argued that topicalization in German is an unspecific A′ movement that fills the prefield position and is not correlated with any specific information-structural interpretation (see Frey 2005a, Fanselow & Lenertová 2011 and section 1.2 above).

6.1.1.1. Restrictions on movement to the left periphery

It would seem that any phrase can be topicalized and receive any interpretation in the prefield. Compare examples such as (6.12) and (6.13). In (6.12), the fronted DP is the topic, referring to old information that is already established in the context. In (6.13), a VP is fronted. It introduces new information and is therefore the focus.

Konietzko & Winkler (2010) and Neeleman & Vermeulen (2012). The present work does not offer any advances in this debate. I will take view that contrastive topics are proper topics as the basis for the analysis and assume that topic, focus, and contrast are independent categories, and that the common property of gapping remnants is their contrastiveness.

(6.12) *Tell me something about Erika.*
[$_{DP}$ Die Erika] hatte jeder t_{DP} im Verdacht.
the Erika had everybody.NOM in suspicion
"Everybody suspected Erika."

(6.13) *What did Jen do?*
[$_{VP}$ Geld gewaschen] hat sie t_{VP}.
money laundered has she
"She laundered money."

However, topic/focus-related movement is not completely unrestricted. Neeleman & Vermeulen (2012) observe that certain orders of topic and focus in the left periphery are unattested (see also Gundel 1988, Primus 1993 for the tendency of topics to be realized left-peripherally). They formulate the generalization in (6.14), compare (6.15-b) – (6.17-b).

(6.14) **Foc > Top Generalization* (Neeleman & Vermeulen 2012: 3f.)
In languages in which both topics and foci move, the topic invariably lands in a higher position than the focus. If only one moves, a topic can cross an *in situ* focus, but not *vice versa*. If there is no movement, the relative ordering of topics and foci tends to be free.

(6.15) a. [Topic [Focus [. . . t_{Focus} . . . t_{Topic} . . .]]]
b. *[Focus [Topic [. . . t_{Focus} . . . t_{Topic} . . .]]]

(6.16) a. [Topic [. . . Focus . . . [. . . t_{Topic} . . .]]]
b. *[Focus [. . . Topic . . . [. . . t_{Focus} . . .]]]

(6.17) a. [. . . Topic . . . [. . . Focus . . .]]
b. [. . . Focus . . . [. . . Topic . . .]]

Note that this generalization echoes the one in (6.11): if both remnants move to the left periphery, the higher one is a topic, the lower one is a focus. Neeleman & Vermeulen (2012) propose that word order in the left periphery is

regulated by interface constraints. Syntax is free to derive all possible orders, within the realm of the SCC and the MLC. At the interface to information structure and semantics, certain orders are filtered out. The filter makes reference to the semantics of topics and foci, see Neeleman & Vermeulen (2012) for details. In a nutshell, they argue that the notion of topic refers to *utterances* while focus refers to *propositions*. Utterances can contain propositions, but not the other way around. Thus, topics must be interpreted externally to foci, in other words, the left-peripheral element that is interpreted as a topic must always precede the left-peripheral element that is interpreted as a focus. The order that the syntax derives must match the interpretative requirements of the semantics and information structure. Mismatches will lead to a crash. I will follow this line of thought in the analysis below and assume that a filter at the semantics-pragmatics regulates the interpretation of the fronted elements.

As for the movement itself, I assume that movement to fill the prefield in Germanic, traditionally known as *topicalization*, is not driven by information-structural requirements. As Fanselow & Lenertová (2011) argue, implementing movement driven by information structure with features like [topic], [focus] violates the Inclusiveness Condition (Chomsky 1995) according to which only features that represent properties of lexical items can play a role in syntactic computation. Being a topic or a focus is obviously not an inherent lexical property, but can only be established in a certain context (see also Neeleman & Szendrői 2004, Den Dikken 2006, Fanselow & Lenertová 2011: 173f.). It is clear that focus- or topic-marking cannot be a prerequisite for this movement. Instead, I take the view that movement to the left periphery is essentially an EPP effect (following proposals such as Heycock 1994, Roberts 2005, Fanselow & Lenertová 2011, Light 2012, see also Müller & Sternefeld 1993, Müller 1995): there is a requirement for the specifier of the highest clausal

projection to be filled. While there are different approaches to EPP effects,[44] I will follow Fanselow & Lenertová (2011) in assuming an edge feature on the clausal head (Chomsky 2008). Edge features (EFs) are (categorially) underspecified structure-building features. All root and some embedded Force heads possess a feature [EF] that can attract any phrase into Spec,ForceP. This is the run-of-the-mill prefield filling movement. For movement of the second remnant, Force can contain another [EF] (see derivation below and section 7.1 for details).

To recapitulate the discussion in the previous section, I assume that the clausal layer in German consists of two projections which I call ForceP and FinP. The remnants of clausal ellipsis move into specifiers of ForceP. In their landing sites, they will be interpreted according to the *Foc > Top Filter (Neeleman & Vermeulen 2012): the element in the outer specifier is a topic, the element in the inner specifier is a focus. This mapping that is dictated by the semantics must be matched by syntax in order for the derivation to converge successfully.

6.1.2. The [E]-feature and local-derivational ellipsis

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.[45] I understand this licensing as Agree for

[44] In feature-checking frameworks, a formal feature must be checked by (internal) Merge (Chomsky 1995, 2000, 2001). In later work, Chomsky (2013, 2015) suggests different explanations that rely on a failure to label a projection being remedied by movement (see also Messick 2020). Another view takes EPP effects to be epiphenomenal, and movement to Spec,TP (in English) to be independently motivated (e.g., Epstein & Seely 2006, Bošković 2007, Alexiadou & Anagnostopolou 2001, 2007, Landau 2007, Richards 2010, 2016, Bayer & Salzmann 2013, McFadden & Sundaresan 2018).

[45] There is a long tradition of research on ellipsis that treats it as being *licensed* in certain environments (see e.g., Zagona 1982, 1988a,b, Lobeck 1993, 1995, Johnson 2001, Merchant

category features. Note that this Agree relation happens upwards, i.e., the goal c-commands the probe. This is illustrated in (6.18).

2001, 2004, Gergel 2006). Aelbrecht (2010) develops an explicit theory of ellipsis licensing. She builds on Merchant's (2001,2004) theory that characterizes the contexts in which ellipsis is licit as containing e-GIVEN constituents, (i) and (ii).

(i) *e-GIVENness* (Merchant 2001: 26)
An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo ∃-type shifting,
a. A entails F-clo(E), and
b. E entails F-clo(A).

(ii) *F-closure* (Merchant 2001: 26)
The F-closure of α, written F-clo(α), is the result of replacing F(ocus)-marked parts of α with ∃-bound variables of the appropriate type (modulo ∃-type shifting).

Aelbrecht finds that the e-GIVENness condition is too unrestrictive: in some syntactic contexts, ellipsis is impossible, even though the would-be elliptical constituent is e-GIVEN, (iii).

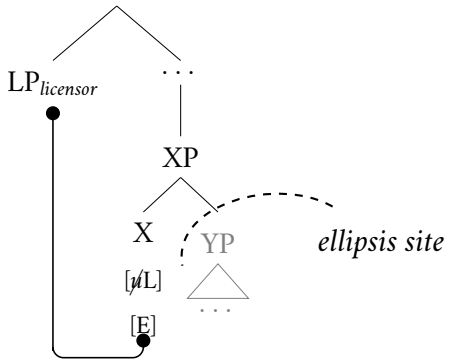
(iii) a. Ik heb twee boeken gekocht en Dries heeft drie *(boeken) gekocht.
I have two books bought and Dries has three books bought
b. I bought the red dress and Alice bought the blue *(dress). (Aelbrecht 2010:13)

She concludes that a syntactic dependency must play a role in restricting the distribution of ellipses, and proposes the licensing mechanism in (iv).

(iv) *Ellipsis licensing* (Aelbrecht 2010:14)
a. Ellipsis is licensed via an Agree relation between an [E]-feature and the ellipsis licensing head.
b. Ellipsis occurs in the course of the derivation, as soon as the licensing head is merged. At this point, the ellipsis site becomes inaccessible for any further syntactic operations and vocabulary insertion at PF is blocked.

Particularly, she suggests that [E] is an abbreviation for a feature bundle, and contains a feature [*u*F] that probes upwards until it finds a matching category feature that can check it.

(6.18) *Ellipsis and licensing*



Traditionally, [E]-feature deletion has been understood as non-insertion of vocabulary items in the domain of the complement phrase. Until recently it has not been investigated how this is compatible with a bottom-up derivation that obeys the PIC and the SCC. The problem is the following: if cyclic Spell-Out is taken seriously, in clausal ellipsis, Spell-Out of lower phases would bleed the effects of [E]. Specifically, upon merger of v, its phase domain would be sent off to PF, and [E] in the higher ForceP or CP phase would come too late to affect the vocabulary insertion in the vP phase domain (see e.g., Müller 2011, Murphy 2016). This of course predicts unattested elliptical constructions like the sluicing example in (6.19), where material in the vP phase domain is overt, because it has already been sent off to PF, and only material in [E]'s immediate phase domain is deleted.

(6.19) *Sie bringt irgendwem ein Buch, aber ich weiß nicht, wem$_1$ [$_{\text{TP}}$
she bringt someone a book but I know not who.DAT
[$_{v\text{P}}$ ~~sie~~ [VP t_1 ein Buch bringt]]].
she.NOM a book.ACC brings

(Müller 2011)

Moreover, there is evidence that ellipsis can interact with, and specifically bleed, other syntactic processes. It must happen early enough to impact further operations. Murphy & Müller (2022) cite three examples from the liter-

ature that illustrate the bleeding effect of ellipsis. First, Modal Complement Ellipsis in Dutch bleeds object movement out of the ellipsis site; if no ellipsis happens, the object can move (Aelbrecht 2010). Second, ellipsis bleeds verbal head movement in Hungarian (Van Craenenbroeck & Lipták (2008)). Third, ellipsis bleeds object agreement into an elided VP in Hocąk (Johnson 2014, 2015).

Clausal ellipsis must be modeled in such a way that it can be generated bottom-up. Murphy & Müller (2022) propose such a local-derivational implementation (see also Müller 2011, Saab 2022, Stigliano to app. for related proposals). The crucial idea is that if a phase head H bears an [E]-feature, then all other phase heads H′ that H c-commands must also bear an [E] feature. I adopt the following modified version of Murphy & Müller's (to app.) proposal: each head has a feature that regulates Spell-Out [SP]. This features comes in two flavors, [+SP] which triggers overt pronunciation, and [–SP] which blocks vocabulary insertion, giving the effect of deletion. The lowest head is merged with a certain [±SP] feature chosen at random since ellipsis is in principle optional. All higher c-commanding heads entering the derivation agree with the next lower head for [±SP]. Their values must match. If a head with [*u*–SP] tries to agree with another head with [+SP], Agree fails and the derivation crashes, see (6.20). Successful Agree leads to a deletion of the *u*-prefix. The former probe can now act as a goal for Agree with the next higher head, (6.21).

(6.20) *[$_{HP}$ H$_{[u+SP]}$ ... [$_{GP}$ G$_{[-SP]}$ ...]]

(6.21) [$_{HP}$ H$_{[\not{u}-SP]}$ ... [$_{GP}$ G$_{[-SP]}$ ...]]

We then need to make the following assumption: ellipsis is derived by a feature bundle, containing features that regulate Spell-out [**u*–SP] and [+SP], and a feature that licenses ellipsis, i.e., agrees with a certain category in order

to constrain the distribution of ellipsis. Since gapping is generally restricted to coordinations, I assume that the category that licenses gapping is &. For gapping, the licensing feature is thus [*u*&]. In consequence, the ellipsis feature bundle does not contain a feature [E] anymore, but only the features in (6.22). However, since it is an explicit implementation of the [E]-feature idea, I will refer to these features as the [E]-feature bundle nonetheless.

(6.22) *Ellipsis feature bundle on Force*^{0}
[*u*&,**u*−SP,+SP]

The feature [**u*−SP] in (6.22) searches for a matching goal in its c-command domain. This is a special instance of a [±SP] feature: it is marked with an asterisk. This diacritic signifies that even if its *u*- prefix is deleted, it cannot serve as a goal. Instead, [+SP] is obligatorily the goal for further Agree. In this way, the bundle stops the percolation of [−SP] features, and starts the percolation of [+SP]. All elements up until the head with [**u*−SP] will not be spelled out overtly, and everything above it will be. It acts similar to what Panagiotidis (2015) calls a "switch". If an [E]-feature bundle such as (6.22) was never merged, there are two possibilities: (i) the first head starts out with [+SP], and all heads in the derivation end up bearing [+SP], leading to complete overt pronunciation; (ii) the first head starts with [−SP], and all following heads agree for [−SP] with the effect that nothing is ever spelled out. Ellipsis as in sluicing, gapping, or VP-ellipsis can only happen if the [E]-feature bundle is merged, forcing everything in its c-command domain to be non-overt, and everything that it is c-commanded by to be overt. In the illustration in section 6.2 I will mark [SP]-features only where they are relevant, and ask the reader to keep in mind that this is an abbreviation, and that they are present on every head.

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 condition by Merchant (2001,2004), Aelbrecht (2010) a.o. are also only a technical tool 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. In the absence of more adequate theories, I will develop the analysis of determiner sharing in the most standard approach.[46]

This discussion will suffice for our purposes here, but I refer the reader to Merchant (2001), Van Craenenbroeck & Merchant (2013) and Merchant (2018) for more details on other aspects of the [E]-feature. Having introduced the general concepts at the basis of the analysis, the next section provides a detailed step-by-step derivation of German determiner sharing.

6.2. Derivation of determiner sharing

In this section, I develop a novel theory of determiner sharing. Bringing together gapping-as-clausal-ellipsis and split topicalization, I propose a conspiracy approach to determiner sharing: sharing arises when split topicalization occurs in the second conjunct of a gapping construction. Thus, this somewhat elusive non-constituent ellipsis emerges as a by-product of the interaction of two independent processes.

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

Let us take a sentence like (6.23) as an example. (6.23) exhibits subject determiner sharing, i.e., a quantifier is missing from the subject of the second conjunct, but is still interpreted as if it were overt.

(6.23) Jede Baronin mag Magnolien und __ Gräfin Flieder.
every baroness like magnolias and countess lilac
"Every baroness likes magnolias and every countess likes lilac."

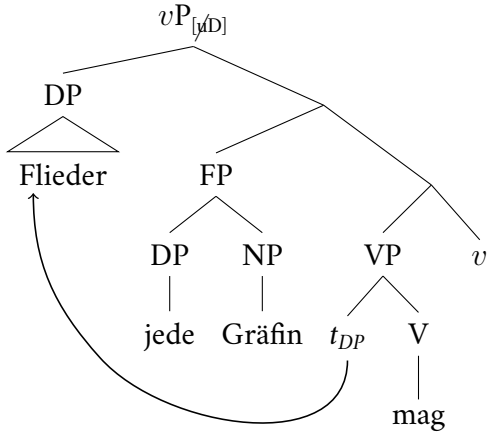
The derivation begins as follows. Two clauses are constructed in separate workspaces.[47] I omit the construction of the clause that will make up the first conjunct, and focus on the elliptical conjunct instead. It is important to stress that in this approach to ellipsis, many of the (movement) steps that happen in the elliptical clause do not happen in the antecedent clause. The resulting representations of the conjuncts are syntactically non-identical. This influences the formulation of the identity requirement on ellipsis, see section 6.3.2 below.

(6.24) illustrates the first step of the derivation: the second conjunct is built up until the vP phase. It contains the phrases that will become the remnants, the object and subject DPs. In order to obey the PIC, the object DP must undergo intermediate movement to Spec,vP. The probe driving intermediate movement is represented somewhat pre-theoretically as [*u*D]. This should be taken as an abbreviation for the reader's favorite theory of intermediate movement. In this case, split topicalization will happen in the subject. As noted above, I remain agnostic as to the exact analysis of split topicalization. I label the topicalized element with NP, and the remnant element with DP to distinguish them, and the constituent that contains them both as FP, but note that this should not be taken as indicative of a certain implementation

[47] Since Chomsky (1995), Bobaljik (1995), Uriagereka (1997) a.o. it is assumed that syntax must be able to compute multiple syntactic objects in parallel. The sites of computation are called workspaces.

of split topicalization. As far as I can see, any movement-based account of split topicalization is compatible with this analysis of determiner sharing.

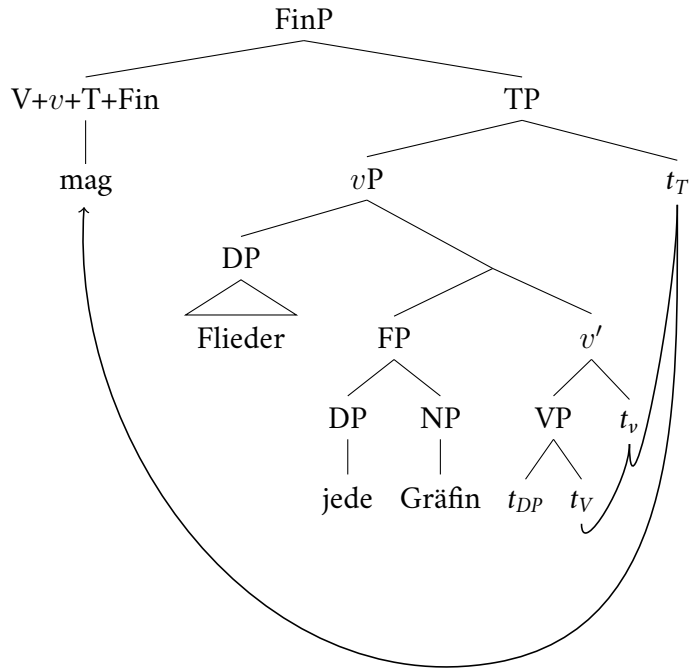
(6.24) *Step 1: intermediate movement of a contrastive object DP*



Next, the structure is built up until the lowest clausal layer, FinP. At this point, the finite verb undergoes verb-second movement into the head of this projection.[48] This happens in both conjuncts.

[48] Note that I abbreviate and summarize the successive-cyclic verb movement in the structure in (i). Of course, V^0 moving into v^0 already happened before Merge of T^0 and v^0+V^0 moving into T^0 happened before Merge of Fin^0.

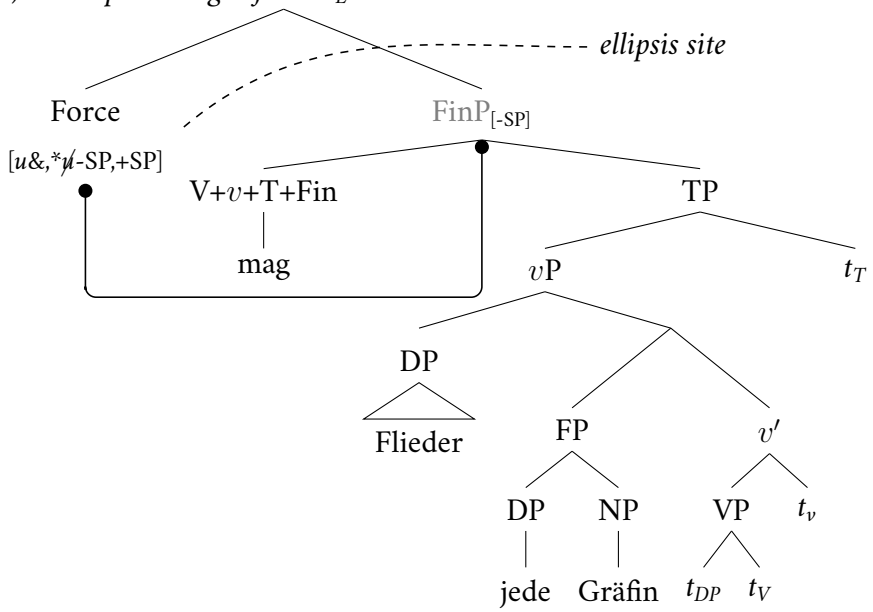
(6.25) *Step 2: Verb-second movement*



The next projection merged is ForceP. Force^0 fulfills two crucial functions: it triggers ellipsis of its complement and it attracts the remnants into its specifiers. We look at each function in turn, starting with ellipsis. I assume that this head hosts the [E]-feature bundle that triggers gapping in German. This has the effect that the complement of Force^0, i.e, the entire FinP, is targeted for deletion. The [*u*–SP] feature searches for a suitable goal and finds it on FinP. The probing diacritic *u-* is deleted, but [*–SP] cannot be a goal for future Agree relations. Instead, [+SP] is the goal, deriving the fact that ForceP will be the first element in which vocabulary items will be inserted into. Even though I refer to this process as [E]-feature deletion, it is important to keep in mind that it is the [±SP]-features in the bundle that regulate ellipsis, i.e., non-insertion of vocabulary items, in this framework. [*u*&] is the part of the feature bundle that is used for licensing and therefore restricting the distribution of ellipsis, as will be discussed below. Locating the [E]-feature bundle

on Force^0 derives the Finite First Condition discussed above, i.e, that the element realized in Fin^0, either a finite verb or a complementizer in German, is obligatorily deleted in gapping, see also section 6.4 below. The [±SP]-Agree relation between Force^0 and FinP is illustrated in (6.26).

(6.26) *Step 3: Merge of Force$_E$*



Force^0 does not only contain the [E]-feature bundle, but also features that attract the remnants into its specifiers. Following proposals such as Heycock (1994), Roberts (2005), Fanselow & Lenertová (2011), Light (2012), I assume that movement to fill the prefield in German is an EPP effect. I implement this here by assuming edge features on Force^0.[49] I assume that Force^0 with the [E]-feature bundle also has two edge feature probes [EF] and [EF] (see section 7.1 for further discussion of multiply filled prefields and exceptional movement).

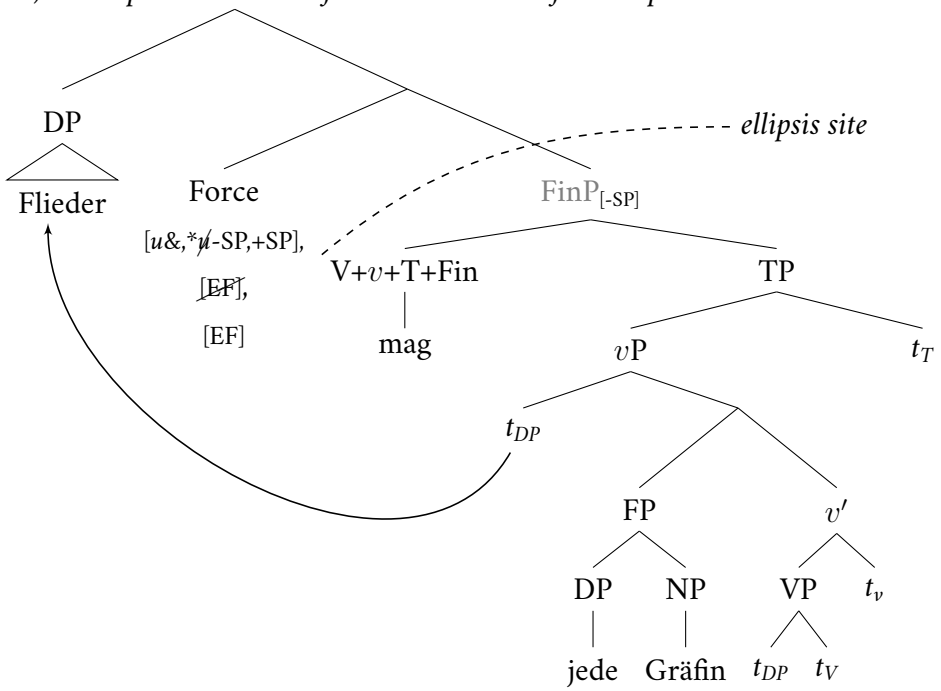
[49] However, as far as I can see, the present approach to determiner sharing does not hinge on any specific analysis of topicalization. In principle, other approaches to EPP effects and other approaches to topicalization should also be compatible with this analysis of determiner sharing.

Note that I do not assume an ordering of the [E]-feature bundle and the edge features. Instead, ellipsis, i.e., Agree for [±SP], must happen before attraction of phrases into the specifier to obey the SCC. Otherwise, the creation of a specifier entails the creation of a higher root node Force′, and Agree between Force^0 and FinP would constitute an operation that takes place exclusively within the domain that is dominated by the root node, and thereby violate the Strict Cycle.

As discussed above, both remnants of gapping are contrastive. Recall Winkler's (2005) Contrastive Topic and Focus Principle (6.11). It has been proposed that in order to interpret topics and foci contrastively, movement is required (e.g., Frey 2006, Neeleman & Vermeulen 2012). The present analysis of gapping is compatible with that view.

Both potential goals are located in Spec,vP. The object is moved first, landing in a what will become an inner specifier of ForceP, see (6.27).

(6.27) *Step 4: movement of the remnant out of the ellipsis site*



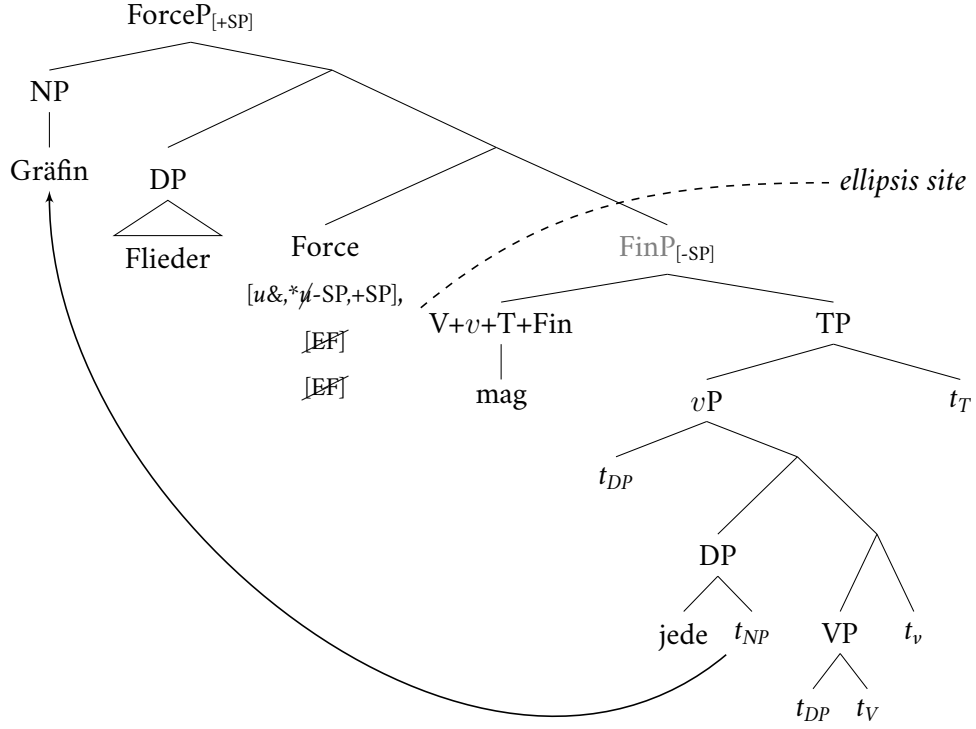
As mentioned above, ellipsis must be licensed. Aelbrecht (2010) proposes that this type of licensing is to be understood as Agree between [*u*E] and a feature of a licensing head. At this point in the derivation, [*u*&] has not yet been licensed. It has yet to agree with a licensing head, but the feature bundle could already cause movement into its specifier and mark its complement for deletion. If at the end of the derivation, [*u*&] has not been checked via agreement, this will cause the entire derivation to crash.

We proceed in our derivation. Force^0 has another probe feature it wants to check, and there is another remnant, the subject, to be moved. The subject can be moved as a whole DP, or it can be split. If the DP is moved as a whole, we end up with a run-of-the-mill gapping structure, (6.28-a). If the subject is split, we will ultimately derive a determiner sharing structure, (6.28-b). The split topicalization is illustrated in (6.29).

(6.28) a. Jede Baronin mag Magnolien und jede Gräfin$_1$ Flieder$_2$
every baroness likes magnolias and every countess lilac
[$_{\text{FinP}}$ mag ... t_1 ... t_2].
likes

b. Jede Baronin mag Magnolien und Gräfin Flieder [$_{\text{FinP}}$
every baroness likes magnolias and countess lilac
mag jede t_1 ... t_2].
likes every
"Every baroness likes magnolias and every countess likes lilac."

(6.29) *Step 5: split topicalization*



Crucially, split topicalization itself is independent of ellipsis. Note that it is possible to have a split as in (6.29) in the second conjunct even without gapping, see (6.30).

(6.30) Jede Baronin mag Magnolien und Gräfin mag jede *t*
every baroness likes magnolias and countess.F likes every.F
Flieder.
lilac.M
"Every baroness likes magnolias and as for countesses, every one likes lilac."

Thus, the two processes that "conspire" to create determiner sharing are really properly independent of one another, as the table in (6.31) illustrates.

(6.31)

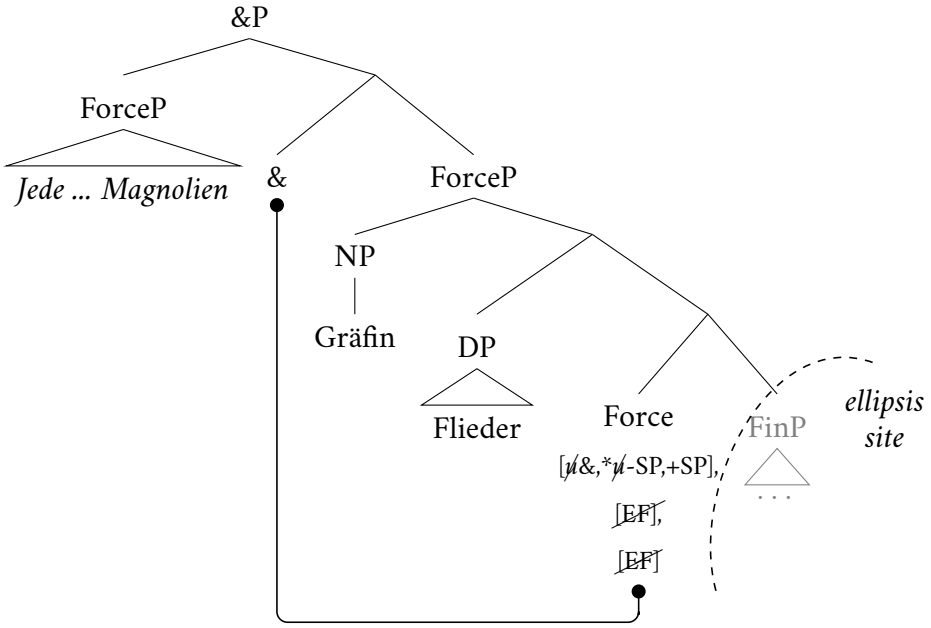
	no split topicalization	**split topicalization**
no gapping	coordination[50]	NP split as in (6.30)
gapping	prototypical gapping, (6.28-a)	sharing, (6.28-b)

The clause that makes up the second conjunct is now complete. It is merged with the coordination phrase, which I assume to be an asymmetric &P (Munn 1993, Johannessen 1998). Since gapping is generally only found in coordinations, I assume that gapping is licensed by the coordinator &^{0}. I assume that [*u*&] on Force^0 can create an (upward) Agree relation with the coordinator &^{0}, which deactivates the *u*- prefix and thereby licenses the [–SP] features that have already been checked, as in (6.32). Aelbrecht (2010) proposes that the ellipsis site becomes inaccessible for further operations upon merger of the licensing head. In the present analysis we do not need such an assumption, since the head with the [E]-feature bundle happens to be a phase head. Thus, the ellipsis site FinP becomes inaccessible independently, as it is also the domain of the ForceP phase.

[50] An example for such a coordination is (i).

(i) Jede Baronin mag Magnolien und jede Gräfin mag Flieder.
every baroness likes magnolias and every countess likes lilac
"Every baroness likes magnolias and every countess likes lilac."

(6.32) *Step 6: [E]-feature licensing*



At this point, our derivation is complete. The effect of the feature bundle [*u*&,*u–SP,+SP] is the complete deletion of all material left inside FinP. Part of that is the quantifier *jede* "every" that has been split off of one of the remnants. We thus arrive at the overt structure in (6.33).

(6.33) Jede Baronin mag Magnolien und Gräfin Flieder.
every baroness likes magnolias and countess lilac
"Every Baroness likes magnolias and countess lilac."

The deletion of FinP, which happens to contain the quantifier, gives the illusion of sharing a quantifier between subjects, when in reality, the deletion of the quantifier is a by-product of regular gapping. In this way, a non-constituent ellipsis like determiner sharing can be reduced to two indepen-

dently available operations: gapping, analyzed as clausal ellipsis, and split topicalization, without deleting a quantifier directly.

These are the basic mechanisms I propose are involved in the derivation of determiner sharing sentences. The following section zooms in on some of the details of the analysis.

6.3. Trouble shooting

6.3.1. Determiner sharing in the initial conjunct

A crucial ingredient of this approach is the independence of the operations involved. Gapping can occur without split topicalization, and vice versa. Only when the two happen to apply to the same structure do we encounter an apparently shared determiner. We have seen that split topicalization can occur in the second conjunct exclusively. It should then also be possible to see split topicalization only in the first conjunct. Would this predict determiner sharing in the first conjunct, as in (6.34)?

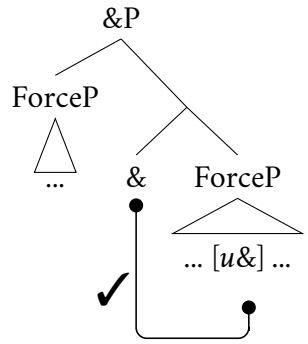
(6.34) *__ Baronin __ Magnolien, und jede Gräfin mag Flieder.
baroness magnolias and every countess likes lilac
intended: *"Every baroness likes magnolias and every countess likes lilac."*

Sharing in the initial conjunct in (6.34) is unattested, and a successful theory of determiner sharing should predict it to be impossible. Indeed, our theory does not predict the availability of (6.34). While split topicalization can occur exclusively in the initial conjunct, see (6.35), gapping cannot. Gapping is licensed by agreement of an [E]-feature with the coordinator $\&^0$. Assuming an asymmetric coordination phrase (Munn 1993, Johannessen 1998), this

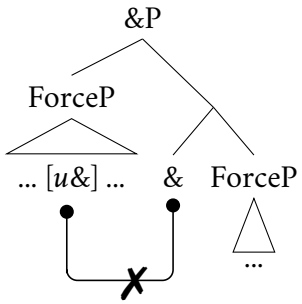
agreement can only succeed in the non-initial conjuncts, since only they are c-commanded by &^{0}, see (6.35) vs. (6.36).

(6.35) Baronin mag jede *t* Magnolien und jede Gräfin mag Flieder.
baroness likes every magnolias and every countess likes lilac
"As for baronesses, everyone likes magnolias and every countess likes lilac."

(6.36)



(6.37)



6.3.2. Identity

We have not yet addressed what ensures that the shared determiners or quantifiers are identical. In principle, one could imagine a configuration where the quantifier in the second conjunct is distinct from that in the first conjunct, like (6.38). However, it is impossible to receive the interpretation intended in (6.38). The only available interpretation is one where the quantifiers match.

(6.38) #Jede Baronin mag Magnolien und Gräfin$_1$ Flieder$_2$ ~~mag~~ ~~keine~~
every baroness likes magnolias and countess lilac likes no
~~t$_1$~~ ~~t$_2$~~

intended: *"Every baroness likes magnolias and no countess likes lilac."*

This is not an issue that is specific to determiner sharing. For instance, the same question arises for gapping, and the interpretation of the elided verb in (6.38). It has long been observed that ellipsis cannot apply freely to any lin-

guistic element. Instead, elided material has to be *recoverable* by making reference to the material in the antecedent. Antecedent and elliptical clause must be in some sense identical or parallel.[51] There are many different versions of an identity condition on ellipsis, see Lipták (2015) for an overview. Some proposals view identity as a syntactic requirement, e.g., Chomsky (1964, 1965), Sag (1976), Fiengo & May (1994), Chung et al. (1995, 2011), Lasnik (1995, 2001), Merchant (2008), Tanaka (2011), Thoms (2015), Murphy (2016), Rudin (2019), Ranero (2021). Others have put forward arguments for semantic identity (e.g., Dalrymple et al. 1991, Hardt 1999, Merchant 2001, Barros & Vicente 2016). Rooth (1992a), Chung (2006), AnderBois (2010), Chung (2013), Van Craenenbroeck (2010), Barros (2014) a.o. are have proposed hybrid accounts. Whichever version of the identity condition one wants to adopt, I assume that the obligatory matching of shared quantifiers is an outcome of it. The essence of identity conditions is the following: the meaning of deleted material must be recoverable by making reference to an antecedent. If a non-matching quantifier is deleted, its meaning cannot be recovered and that leads to a crash of the derivation. I leave open the question of how exactly an identity requirement can be implemented in a local-derivational Minimalist analysis for now. Crucially, whatever the correct implementation may be, the identity condition holds for all ellipses and thus for determiner sharing as well. No rule specific to determiner sharing need be postulated. One version of an identity requirement that serves the purposes of (6.38) is Chung's (2006) No New Words Condition, (6.39). It has been formulated for sluicing but is considered to hold generally for all ellipses.

[51] The term "parallelism" has been used by Fiengo and May (1994) to refer specifically to the parallelism in scope between antecedent and elliptical clause. It has been observed that if a structure exhibits scope ambiguity, this ambiguity must be resolved in the same way in antecedent and elliptical clause. In other words, when the antecedent is interpreted with wide scope, the elliptical clause may not be interpreted with narrow scope, or *vice versa*. "Identity" is the more general term to describe other (syntactic or semantic) areas in which the conjuncts must match, e.g., voice in some types of ellipsis, case, argument structure.

(6.39) *No New Words/ Lexical identity condition* (Chung 2006)
Every lexical item in the numeration of the sluice that ends up (only) in the elided IP must be identical to an item in the numeration of the antecedent CP.

However, it is clear that a purely lexical condition like (6.39) is not restrictive enough to rule out structural mismatches between antecedent and ellipsis site. The nature of the identity condition is a subject of ongoing research. From the view of move-and-delete approaches, the identity condition must be flexible enough to allow traces of movement or copies. If move-and-delete is on the right track and movement only happens in the elliptical clause and not in the antecedent, the identity condition must not be sensitive to movement dependencies (see e.g., Rudin 2019 for a proposal that achieves this).

6.3.3. Object determiner sharing

A determiner can be missing from an internal argument.[52] Recall examples such as (6.40).

(6.40) a. Jedes Buch liest die Lehrerin und
every.ACC book.ACC reads the.NOM teacher.NOM and
Magazin die Schülerin.
magazine.ACC the.NOM student.NOM
"The teacher reads every book and the student reads every magazine."

b. Die Sekretärin gibt jedem Lehrer ein
the.NOM secretary.NOM gives every.DAT teacher.DAT a.ACC
Buch und Schüler ein Heft.
book.ACC and student.DAT a.ACC folder.ACC
"The secretary gives a book to every teacher and a folder to every student."

[52] So far we have only discussed determiner sharing in argument positions. Split topicalization seems to be possible with adjuncts, (i), which suggests that adjuncts should also allow determiner sharing. However, I am not sure if that prediction is borne out. DP adjuncts seem to be able to share a determiner, while PP adjuncts clearly cannot, (ii). More judgment data need to be collected, and I leave the question of adjuncts as an open issue for now.

(i) a. (In) Schlössern hab ich noch in keinen *t* gewohnt.
in castles have I yet in no lived
"As for castles, I haven't lived in any yet." (Fanselow & Ćavar 2002: 69)

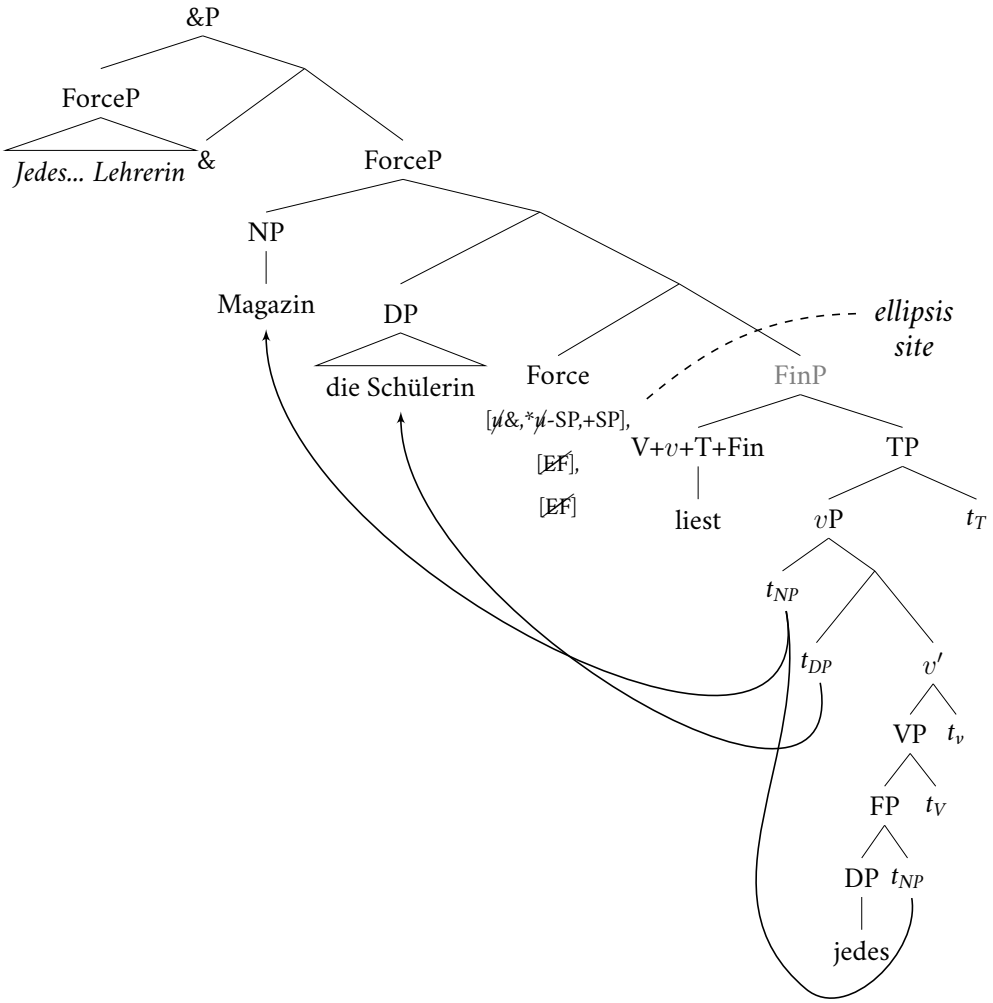
b. Freunden hat sie nur besonders engen *t* einen Kuchen gebacken.
friends has she only especially close a cake baked
"As for friends, she has only baked a cake for close ones." (Ott 2011: 37)

(ii) a. ?Jeden Morgen liest sie ein Buch und ___ Abend ein Magazin.
every morning reads she a book and evening a magazine

b. *In jeder Hose verstecke ich 'nen 5-Euro-Schein und ___ Jacke 'nen
in every pants hide I a 5-euro-note and jacket a
10-Euro-Schein.
10-euro-note

In the present analysis, the derivation of object determiner sharing is entirely parallel to that of subject determiner sharing. Both remnants are attracted into Spec,ForceP by unspecific edge features. (6.41) illustrates the derivation of (6.40-a). The NP of the indirect object is split off and lands in an intermediate position in Spec,vP for locality reasons. From there the object NP and the subject DP move to specifiers of ForceP.

(6.41) *Determiner sharing in the direct object*



It is important to note here that the base order subject DP > object NP must be reversed. In the final landing site, NP occupies a position higher than DP.[53]

This may be somewhat unexpected. In (6.40), the object NP c-commands the subject DP in the intermediate landing site. Given the MLC, this should lead to a structure in which the object with the missing determiner is attracted first and ends up in a lower specifier, and the subject DP is moved last and ends up in a lower Spec,ForceP. However, such a structure is ungrammatical, (6.42).

(6.42) *Die Sekretärin gibt jedem Lehrer ein
the.NOM secretary.NOM gives every.DAT teacher.DAT a.ACC
Buch und ein Heft Schüler.
book.ACC and a.ACC folder.ACC student.DAT

Fanselow & Lenertová (2011) argue that EF-movement to the left periphery is exempt from the MLC. In regular topicalization, a higher (subject or object) DP cannot intervene and block movement of a lower object DP, see (6.43). The same is true for run-of-the-mill gapping examples such as (6.44).

[53]The literature on determiner sharing has discussed examples in which the order of subject and object is not reversed. It has been argued that such examples as (i) (repeated from (2.26-d) above) are impossible in English but acceptable in Polish (McCawley 1993:247, Citko 2006:81).

(i) a. #Ebert reviews too many films and von Rhein concerts.
b. Ebert zrecenzjonował za dużo filmów a von Rhein koncertów.
Ebert reviewed too many films and von Rhein concerts
c. ??Ebert rezensiert zu viele Filme und von Rhein Konzerte.
Ebert reviews too many films and von Rhein concerts
"Ebert reviewed too many films and von Rhein reviewed too many concerts."

I am not certain about the acceptability of the equivalent of this example in German. Should such structures be acceptable, they are not trivially accounted for in the present analysis. If determiner sharing comes about as a by-product of split topicalization, and if the topic–focus structure argued for by Winkler (2005), Neeleman & Vermeulen (2012) a.o. is correct, we would not expect the nominal with the missing determiner to be able to follow the other remnant. I leave the investigation of examples like (i) in German as an open issue for now.

(6.43) [Ein Heft] hat die Sekretärin jedem Schüler
a.ACC folder.ACC has the.NOM secretary.NOM every.DAT student.DAT
t gegeben.
given
"The secretary gave a folder to every student."

(6.44) Französische Bücher liest die Lehrerin und russische Bücher die
French books reads the teacher and Russian books the
Schülerin.
student
"The teacher reads French books and the student Russian books."

Exempting topicalization from the MLC is not a particularly elegant assumption to make and I do not want to defend it here. I only wish to make transparent what assumptions must be made for the analysis to succeed. In sum, whatever the correct analysis of topicalization is, it must be able to account for configurations in which the MLC can seemingly be violated and a lower goal can be accessed even though a higher potential goal is present, independently of determiner sharing and ellipsis-related movement. The same mechanism can be applied to configurations like (6.40).[54] The correct word order of determiner sharing structures like (6.40) must also match the interface filter *Foc > Top: since a syntax in which the focus phrase c-commands the topic phrase

[54]On a related note, it has been observed that movements of the same type are order preserving, i.e., if the same type of feature attracts multiple elements into specifier positions of the same head, the final hierarchical order of these elements must be identical to the order that they had in their base position (see e.g., Müller 2001, Richards 1997, 2001, McGinnis 1998, Bruening 2001, Sells 2002, Anagnostopoulou 2003, Williams 2003, Heck 2016). As will be discussed in more detail in chapter 7, it is not implausible to consider the feature that triggers the initial movement different from the one that triggers movement of the second remnant. The former is an implementation of the EPP and always present on Force^0, while the latter is a feature that is assigned to Force^0 in a specific context, see section 7.3 for details.

in the left periphery cannot be interpreted, only those derivations in which topic c-commands focus are felicitous.

In previous analyses of English determiner sharing, it was argued that the coordination in object sharing is smaller than in subject sharing. This is based, for instance, on Lin's (2002) observation that the verbal gap is obligatorily larger in object sharing: to share an object determiner, both v/V and T must be deleted, while in subject determiner the non-finite lexical verb may surface overtly and only auxiliaries or finite verbs on T must be gapped. We have seen that German differs from English here. In both subject and object sharing in German, deletion of FinP is necessary. Non-finite verbs can survive ellipsis in both constructions, (6.45).

(6.45) a. Jede Baronin hat die Rosen gegossen und Gräfin die
every baroness has the roses watered and countess the
Tulpen gedüngt.
tulips fed
"Every baroness has watered the roses and every countess has fed the tulips."

b. ... und [$_{\text{ForceP}}$ [$_{\text{NP}}$ Gräfin] [$_{\text{VP}}$ die Tulpen gedüngt] ~~[$_{\text{FinP}}$ hat ... jede *t* ... *t*]~~]

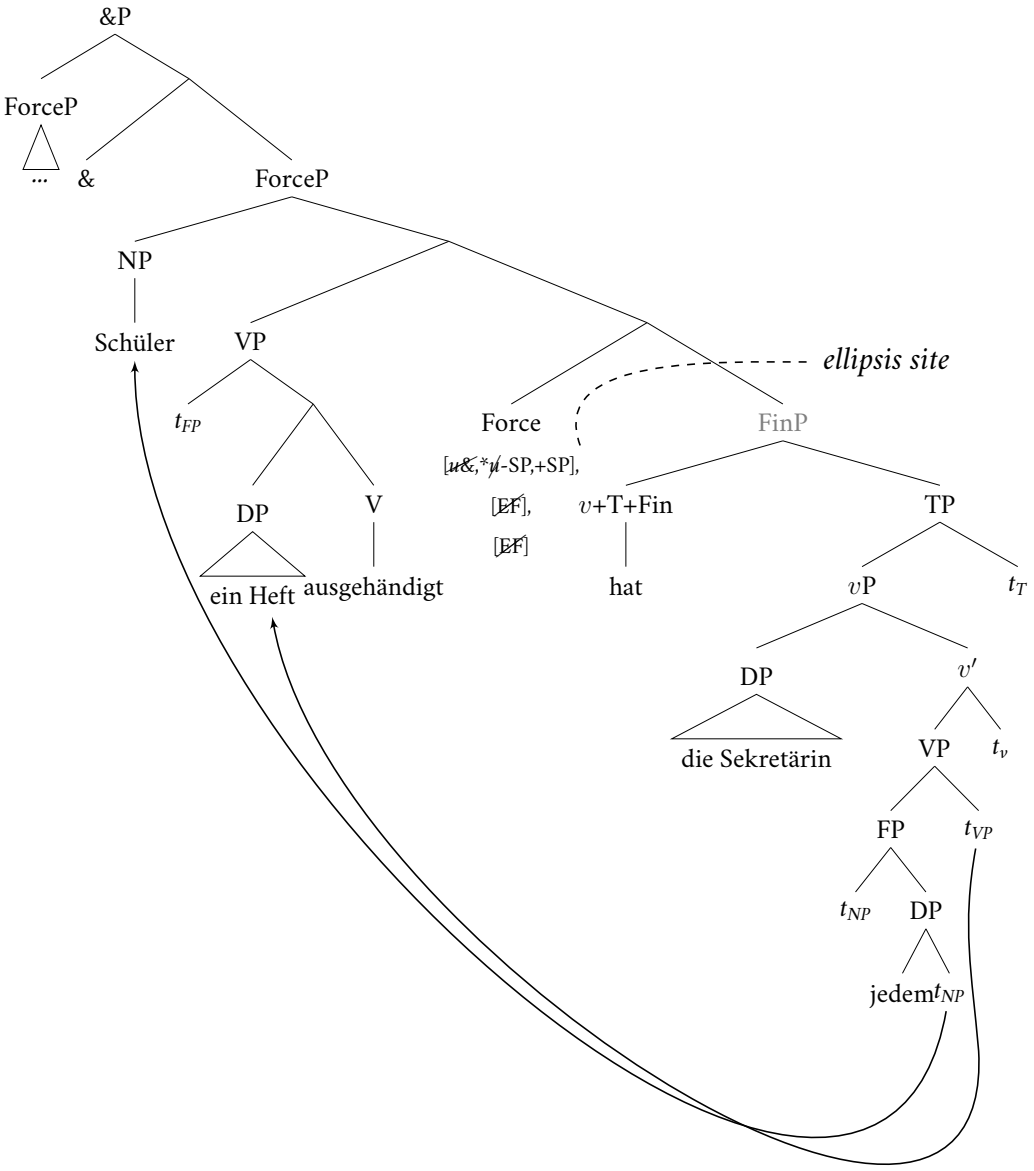
c. Die Sekretärin hat jedem Lehrer ein
the.NOM secretary.NOM has every.DAT teacher.DAT a.ACC
Buch gegeben und Schüler ein Heft
book.ACC given and student.DAT a.ACC folder.ACC
ausgehändigt.
handed.out
"The secretary gave a book to every teacher and a folder to every student."

d. ... und [$_{\text{ForceP}}$ [$_{\text{NP}}$ Schüler] [$_{\text{VP}}$ ein Heft ausgehändigt] ~~[$_{\text{FinP}}$ hat die Sekretärin ... *t* ... *t*]~~]

This is entirely expected under the present analysis. Object determiner sharing is derived in the same way as subject determiner sharing, with deletion of FinP and split topicalization. Non-finite verbs can survive ellipsis if not just a DP, but a whole VP contrasts with its correlate. One of the remnants evacuates the ellipsis site as a VP, not just a DP. The derivation is illustrated in (6.46).

(6.46) a. Die Sekretärin hat jedem Lehrer ein Buch gegeben...
the secretary has every teacher a book given

b. *Determiner sharing in the indirect object*



Split topicalization happens in the indirect object. The TOP part is split off, vacates VP, and moves to Spec,ForceP (intermediate landing sites omitted). The constituent containing the direct object and the lexical verb does the

same. The subject stays in the ellipsis site and is deleted. In the illustration in (6.46) I tentatively follow the remnant movement approach to incomplete category fronting (as proposed by Thiersch 1985, Den Besten & Webelhuth 1987, Huang 1993, Bayer 1993, Grewendorf & Sabel 1994, Müller 1998 a.o.), but remain somewhat agnostic about the exact structure of double object VPs. The indirect object scrambles out of VP before fronting it. This kind of fronting fed by scrambling is available in German independent of split topicalization and ellipsis, see (6.47).

(6.47) [$_{VP}$ t_{IO} Ein Buch gegeben] hat sie jedem Schüler t_{VP}.
a book given has she every.DAT student.DAT
"She has given a book to every student."

If no scrambling happens and the whole VP moves containing the split off quantifier, we get a sentence like (6.48), which I find acceptable in the proper information-structural context.

(6.48) a. ?Die Sekretärin gibt jedem Lehrer ein Heft und [$_{NP}$
the secretary gives everyDAT teacherDAT a folder and
Schüler] [$_{VP}$ jedem *t* ein Buch].
studentDAT everyDAT a book
"The secretary gives a folder to every teacher and to every student she gives a book."

b. ... und [$_{ForceP}$ [$_{NP}$ Schüler] [$_{VP}$ jedem t_{NP} ein Buch] ~~[$_{FinP}$ gibt die Sekretärin t_{VP}]~~]

There is some debate on the ability to front vPs in German. Haider (1987, 1990), Frey & Tappe (1992) argue that sentences in which the subject is among the fronted elements like (6.49) are accepted by (some) speakers of German.

(6.49) a. [$_{vP}$ Ein Außenseiter gewonnen] hat hier noch nie.
a underdog won has here yet never
"An underdog has never won here." (Haider 1990:95)

b. [$_{vP}$ Linguisten gespeist] haben dort noch nie *t*.
linguists.nom dined have there yet never
"Linguists have never dined there." (Haider 1990:97)

If that is true, we could expect vP to be a remnant of gapping as well. In such structures, a split-off determiner would be rescued along with other vP material (unless it can scramble out of it), giving rise to examples such as (6.50). They are quite complex, and I am not sure about their acceptability, but the analysis clearly predicts that those speakers that accept (6.49) and accept determiner sharing in general should also accept (6.50).

(6.50) a. ?*Die Sekretärin gibt jedem Lehrer ein
the.NOM secretary.NOM gives every.DAT teacher.DAT a.ACC
Heft und [$_{NP}$ Schüler] [$_{vP}$ die Direktorin
folder.ACC and student.DAT the.NOM headteacher.NOM
jedem t_{NP} ein Buch].
every.DAT a.ACC book.ACC
"The secretary gives every teacher a folder and the headteacher gives every student a book."

b. ... und [$_{ForceP}$ [$_{NP}$ Schüler] [$_{vP}$ die Direktorin jedem t_{NP} ein Buch] [$_{FinP}$ ~~gibt t_{vP}~~]]

In the example discussed above, the dative-marked argument shares its determiner. Recall that we have discussed dative-marked remnants before in chapter 4.3.7. German can mark dative case on nouns optionally with a schwa *-e*. However, this marker cannot surface in all dative environments, but only if there is another overtly case marked element in the DP, as in (6.51) (repeated from (4.41) above).

(6.51) 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)

In order for the noun to carry the marker, there must have been some sort of concord in the noun phrase. We have seen in section 4.3.7 that in determiner sharing structures, the remnant can surface with dative *-e*, as in (6.52).

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

Together with the other points discussed in chapter 4, the acceptability of such examples offers a strong argument for the analysis presented above. The dative remnant must once have been in an environment where a local dative-marked determiner could license *-e* on the noun. This suggests a complex internal syntax of the ellipsis site.

To conclude, in this section I have put forward a novel analysis of determiner sharing. I have shown how a bottom-up derivation can generate split topicalization in clausal ellipsis, which creates the illusion that a determiner or quantifier in the antecedent is also interpreted in the elliptical conjunct. In the rest of this chapter, I demonstrate how the generalizations about determiner sharing are accounted for in this analysis.

6.4. Deriving the properties of determiner sharing

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 were introduced as (3.8) above, and the final version is given in (6.53).

(6.53) *Determiner sharing generalizations* (final version)

a. The ellipsis generalization: determiner sharing is only possible in ellipsis.

b. The complementizer generalization: in embedded clauses, determiner sharing does not require deletion of the verb, but instead of the complementizer.

c. The first-element generalization: the element with the omitted determiner must be the first constituent of the conjunct.

d. The no-constituents generalization: if more than a single determiner is shared, the deleted elements need not form a constituent.

e. The no-low-elements generalization: elements that occupy a low position in the nominal spine cannot be shared.

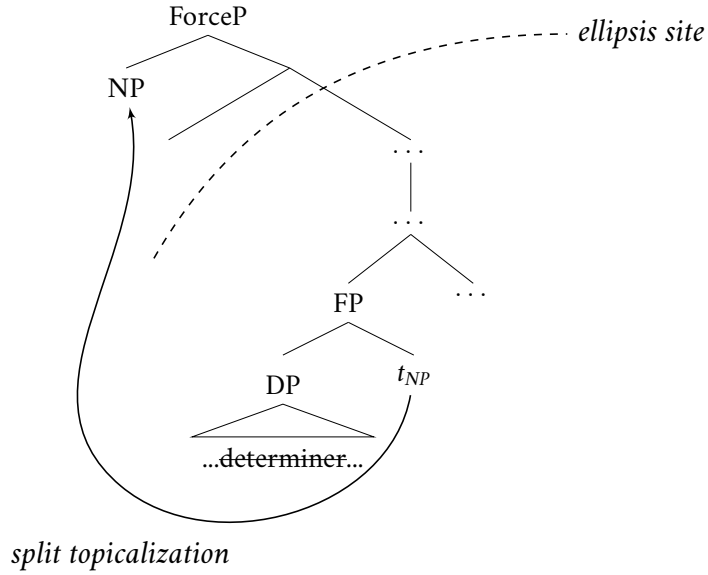
In the following, we will see how the present approach to determiner sharing can derive each generalization. Section 6.4.1 discusses the special relationship between gapping and determiner sharing. I show what motivates a revision of the ellipsis generalization (6.53-a) by discussing other instances of ellipsis that seem to allow sharing. Section 6.4.2 investigates determiner sharing in embedded clauses. Section 6.4.3 examines the first-element generalization. In section 6.4.4, I show how the no-constituents generalization falls out from

the analysis, and in 6.4.5 I briefly discuss differences between determiners that can and cannot be shared. Section 6.4.6 summarizes the findings.

6.4.1. Accounting for the ellipsis generalization

Determiner sharing is commonly found in gapping environments. What is it about gapping that licenses this specific pattern of ellipsis? What makes gapping special? In the present account, the answer is *nothing*. Determiner sharing arises as a by-product of the combination of ellipsis and split topicalization. It is the conspiracy of these two operations that results in a determiner being left behind in what happens to be an ellipsis site, as illustrated in (6.54).

(6.54) *The conspiracy of ellipsis and split topicalization*



The combination of gapping and split topicalization has the following effects: gapping delineates the ellipsis site (FinP); split topicalization moves the NP out of the ellipsis site. This results in a configuration in which a bare NP

surfaces as a remnant without a determiner. Since the independent requirement of recoverability 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 upshot of the present analysis is that there is no operation that deletes determiners specifically, which must be modeled to be dependent on an operation that deletes verbs specifically. In other words, in this analysis there is nothing special about gapping such that only gapping can license the deletion of determiners. Instead, determiners can be deleted to the exclusion of their NP when they can be stranded in an ellipsis site. Therefore, sharing is always observed in ellipsis environments.

We have already seen in chapter 3 that the observation from the literature that sharing is parasitic on gapping specifically is not correct. Sharing can also occur with stripping in German. Recall examples such as (6.55).

(6.55) Jede Baronin mag Grüntee, aber nicht Herzogin.
every baroness likes green.tea but not duchess
"Every baroness likes green tea, but not every duchess does."

As both gapping and stripping are traditionally considered coordinate ellipsis phenomena, the possibility of determiner sharing in both of them could be expected.[55] Hankamer & Sag (1976), Hankamer (1979), Chao (1988), Hendriks (1995), Konietzko & Winkler (2010), Molnár & Winkler (2010), Boone (2014), Wurmbrand (2017), Johnson (2018) and others have proposed that stripping and gapping can be reduced to the same underlying process. They only dif-

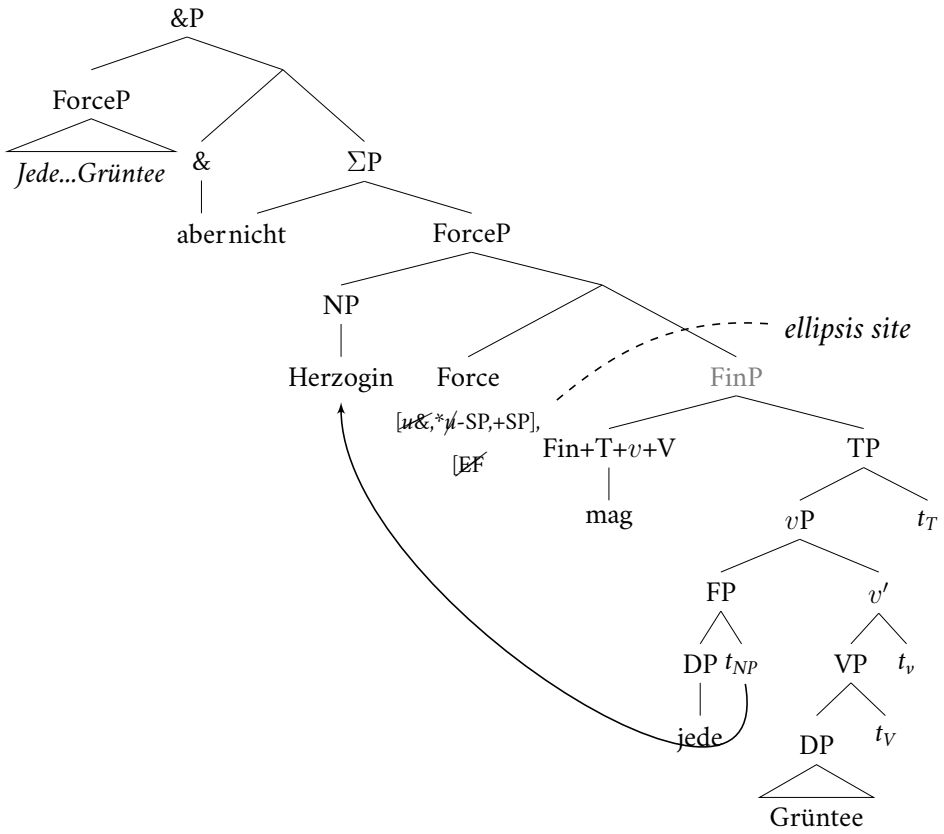
[55] Note however, that recently stripping has been found to be possible outside of coordinations as well, see e.g., Frazier (2015), Overfelt (2018), Puthawala (2018). It seems then that the stripping-inducing [E]-feature can be licensed in a wider array of contexts.

fer in the number of remnants they leave (one in stripping, minimally two in gapping). Crucially, split topicalization is available independently in the supposed pre-elliptical structure of stripping, see (6.56).

(6.56) Jede Baronin mag Grüntee aber Herzogin mag nicht jede *t*
every baroness likes green.tea but duchess likes not every
Grüntee.
green.tea
"Every baroness likes green tea but as for duchesses, not all of them like green tea."

Therefore I propose that determiner sharing in stripping arises in much the same way as it does in gapping, see (6.57).

(6.57) *Determiner sharing in stripping*



The negative particle *nicht* "not" is illustrated as being the head of a functional projection that hosts emphatic polarity, ΣP, following Laka (1990), Depiante (2000). However, the behavior of negative and affirmative polarity particles in stripping is much more intricate than I can do justice to here.[56] Crucially, the two prerequisites for determiner sharing are met: split topicalization is independently possible and the ellipsis site is large enough to contain a stranded determiner (see e.g., Depiante 2000, Kolokonte 2008 for analyses of IPs/TPs deletion, Winkler 2005, Konietzko 2016 for analyses of vP/VP ellipsis). The present analysis correctly predicts sharing to be possible in stripping.

The common denominator of gapping and stripping seems to be a sufficiently large ellipsis site. This is a prediction of the present analysis: determiner sharing does not rely on gapping *per se*, but it is possible with any ellipsis that (i) allows (split) topicalization out of it, and (ii) has an ellipsis site large enough for a determiner to be stranded inside it. Therefore we should rephrase the ellipsis generalization to (6.58).

(6.58) The ellipsis generalization: determiner sharing is only possible in ellipsis. *(final version)*

[56] There also seems to be evidence that constructions in which the particle follows or precedes the remnant, (i), have significantly different properties (see e.g., Depiante 2000, Kolokonte 2008, Konietzko 2016). I have to leave the details of the interactions between different types of stripping and determiner sharing as an open issue at this point.

(i) Jede Baronin mag Grüntee...
every baroness likes green.tea

a. und auch Herzogin.
and also duchess

b. und Herzogin auch
and duchess too

c. aber nicht Herzogin
but not duchess

d. aber Herzogin nicht
but duchess not

Note that this does not entail that all types of ellipses should be able to exhibit determiner sharing. Some ellipses, like NP-ellipsis (see e.g., Bernstein 1993, Lobeck 1995, Kester 1996a,b, Roehrs 2006, Murphy 2018), (6.59), are too small to contain a stranded determiner.

(6.59) *Nominal ellipsis in German*

a. Ich habe ein rotes Auto gesehen.
I have a red car seen

b. Ich habe [$_{\text{DP}}$ ein rotes $__{}_{\text{NP}}$] gesehen
I have a red seen
"I have seen a red car."

Ellipsis does not have to be clausal like gapping and stripping to allow determiner sharing. vP or VP or even DP are large enough to contain a stranded determiner and a trace of the noun, and could bring about the pattern of determiner sharing if they are deleted. However, German does not allow deletion of these smaller phrases for unclear reasons. It seems that in addition to NP-ellipsis, the only types of ellipsis available in German are clausal ones.[57] If this account is on the right track, and determiner sharing is dependent not

[57] English allows VP-ellipsis, gapping, and pseudogapping, but determiner sharing seems to be only possible in gapping, (i).

(i) a. Many dogs would enjoy Whiskas and __ cats __ Alpo.
b. *?Many dogs would enjoy Whiskas and __ cats would/did Alpo.

Previous research on English determiner sharing focused on the analysis of the dependence on gapping, and neglected to address the question if that hypothesis is even empirically correct. Is it really only gapping that can give rise to sharing, or can other ellipses too? What is the natural class of contexts that allow determiner sharing in English? As far as I know, there are no studies that address these questions. However, it is not at all clear that predictions of the present analysis should apply to English. The analysis cannot be easily transferred to English, since it does not allow split topicalization in general, (ii).

(ii) *Birds have I seen many *t*.

on gapping, but on any sufficiently large ellipsis available in a language, because it is always a by-product of that ellipsis, we should expect that there are other types of (clausal) ellipsis that can license it. The next section tests this prediction.

6.4.1.1. Determiner sharing in other clausal ellipses

The other prominent types of clausal ellipsis that are attested in German are sluicing and fragment answers. This section investigates the question whether these constructions can also provide an environment for determiner sharing.

Sluicing Sluicing describes constructions in which *wh*-movement is followed by ellipsis, as in (6.60).

(6.60) Ich hab jemanden singen gehört, aber ich sage nicht [$_{\text{CP}}$
I have someone.ACC sing heard but I say not
wen ~~ich~~ t_{wh} ~~singen~~ ~~gehört~~ ~~habe~~]
who.ACC I sing heard have
"I heard someone singing but I won't tell you who."

In sluicing, we have one of the ingredients for determiner sharing, clausal ellipsis: in most analyses, the elided constituent is a IP/TP, or even FinP in Baltin (2010) (see overview in Vicente 2018). The question is now whether the other ingredient, split topicalization, is also available. With simple *wh*-phrases as in (6.59) splits are of course impossible, since there is nothing that could be split off. We have to turn to complex *wh*-phrases, like *welcher Singvogel* 'which songbird' in (6.61).

(6.61) Ich haben einen Singvogel gesehen, aber ich weiß nicht [$_{CP}$
I have a songbird seen but I know not
welchen [$_{TP}$ ~~Singvogel ich~~ $t_{\textit{DP}}$ ~~gesehen hab~~]]
which songbird I seen have
"I have seen a bird but I don't know which one."

Splits containing *welch-* are indeed possible, (6.62).

(6.62) Gänse hat Paul noch welche *t*.
geese has Paul still some
"As for geese, Paul still has some."

However, *welch-* in (6.62) is not a *wh*-phrase, but a homophonous non-interrogative, quantificational pronoun (Ott 2011). In interrogative contexts, complex *wh*-phrases cannot be split, as (6.62) illustrates.[58]

(6.63) *Singvogel hab ich welchen *t* gesehen?
songbird have I which seen
intended: "Which songbird have I seen?"

Thus we expect that determiner or quantifier sharing should not be possible in sluicing, (6.64).

(6.64) *Greifvogel hab ich echt jeden *t* gesehen, aber ich weiß nicht [$_{CP}$
raptor have I really every seen but I know not
(ob) Singvogel [$_{TP}$ ~~ich~~ ~~jeden~~ *t* ~~gesehen~~ ~~hab~~]].
whether songbird I every seen have

The ungrammaticality of (6.64) might be due to the obligatory occurrence of the embedding interrogative complementizer *ob* "whether". However, we see

[58] It may be possible that (6.62) is grammatical under an echo question reading with the interpretation *"As for songbirds, which one have I seen?"*. I am not sure about the acceptability of such an configuration. In any case, echo questions are irrelevant for the discussion here, since they involve a different syntax from "normal" *wh*-interrogatives (see e.g., Reis 1991, 1992, Chomsky 2000, Adger & Ramchand 2005, Sobin 2010).

in (6.65) that sharing is impossible even without the complementizer in an embedded *wh*-question.

(6.65) *Greifvogel weiß ich welchen *t* ich gesehen hab, aber ich weiß
raptor know I which I have seen but I know
nicht [$_{CP}$ Singvogel [$_{TP}$ ~~ich welchen~~ *t* ~~gesehen hab~~]]
not songbird I which seen have

Thus, we find that Ross's (1969) generalization holds: possible sluicing remnants are possible occupants of Spec,CP in full *wh*-questions and impossible occupants of Spec,CP in full *wh*-questions are impossible sluicing remnants. How can the present theory account for this? Sluicing obligatorily involves an interrogative clausal head (C^0 or $Force^0$) and one of its features is [*uwh*]. To delete this feature, a *wh*-phrase is moved into the left periphery. It can thus never be the case that the *wh*-element is stranded in the ellipsis site and deleted, which would give the illusion of *wh*-sharing. Thus, if sluicing is defined as ellipsis leaving a *wh*-remnant, we can never have sharing because there are contradictory requirements: the *wh*-element has to obligatorily survive ellipsis for sluicing, but the *wh*-element must be stranded for sharing. They can never be fulfilled at the same time.

However, we can make the interesting observation that sentences like (6.65) get significantly better if the remnant is fronted in the embedding clause, (6.66).

(6.66) Greifvogel weiß ich welchen *t* ich gesehen hab, aber Singvogel$_i$
raptor know I which I have seen but songbird
weiß ich nicht [$_{CP}$ t_i —$_{TP}$]
know I not
"I know which raptor I have spotted but as for songbird, I don't know which one I have seen."

A structure like (6.66) is reminiscent of what Abels (2019) calls "sluicing" with apparent massive pied-piping, which will be discussed in the following.

"Sluicing" with apparent massive pied-piping Determiner sharing *is* possible if both fronting of the remnant and deletion of the TP occur, but not if only one of these processes takes place, (6.67).

(6.67) *I know which raptor I've spotted, ...*

a. *aber ich weiß nicht, Singvogel
but I know not songbird (=6.64, *no fronting, ellipsis*)

b. *aber Singvogel welchen *t* ich gesehen hab weiß ich nicht
but songbird which I seen have know I not
(fronting, no ellipsis)

c. *aber ich weiß nicht, Singvogel (dass) ich welchen *t* gesehen
but I know not songbird that I which seen
hab
have
(no fronting, no ellipsis)

This is exactly the pattern that Abels (2019) observes for "sluicing" with apparent massive pied-piping, (6.67) (the *swamp* construction, see also Ross 1969: 281, fn. 10 and "topical sluicing" in Abe 2015). Massive pied-piping in the sense of Heck (2008), Cable (2010) is only possible if the *wh*-word is fronted and the clause is elided, as in (6.68-a). The pattern is exactly the same as the one we can observe for determiner sharing, (**??**)–(**??**) (Abels 2019:1206).[59]

[59] Abels also discusses various environments in which the swamp construction is impossible, and we find again that determiner sharing patterns the same way. The environments are embedded coordinations, (i-a), subject clauses, (i-b), extraposed subject clauses, (i-c), selected complement questions, (i-d), and unselected embedded questions, (i-e) (see Abels 2019:1214–1222 and 1242f. for details).

(i) a. *Die ständigen Berichte dass er wisse welchen Greifvogel er gesehen hat,
the constant reports that he know.SBJV which raptor he seen has
aber Singvogel wisse er nicht, sind nervig.
but songbird know.SBJV he not are annoying

(6.68) a. He has a picture of somebody, but [$_{CP}$ [$_{DP}$ a picture of who] ~~[$_{TP}$ he has t_{DP}]~~] I don't know.

(fronting, ellipsis)

b. *He has a picture of somebody, but I don't know [$_{CP}$ [$_{DP}$ a picture of who] ~~[$_{TP}$ he has t_{DP}]~~].

(no fronting, ellipsis)

c. *He has a picture of somebody, but [$_{CP}$ [$_{DP}$ a picture of who] he has t_{DP}] I don't know.

(fronting, no ellipsis)

d. *He has a picture of somebody, but I don't know [$_{CP}$ [$_{DP}$ a picture of who] [$_{TP}$ he has t_{DP}]].

(no fronting, no ellipsis)

(6.69) *Massive pied-piping*

	ellipsis	no ellipsis
fronting	✓	✗
no fronting	✗	✗

(6.70) *Determiner sharing*

	ellipsis	no ellipsis
fronting	✓	✗
no fronting	✗	✗

b. *Du weißt welchen Greifvogel er gesehen hat, aber Singvogel wirst du nie
you know which raptor he seen has but songbird will you never
erraten.
guess

c. *Du weißt welchen Greifvogel er gesehen hat aber du wirst nie erraten
you know which raptor he seen has but you will never guess
Singvogel.
songbird

d. *Jeder weiß wann er welchen Greifvogel gesehen hat aber niemand
everybody knows when they which raptor seen have but nobody
erinnert sich, Singvogel.
remembers REFL songbird

e. *Er hat erzählt welchen Greifvogel er gesehen hat aber er will mir nicht
he has told which raptor he seen has but he wants me not
sagen, Singvogel.
say songbird

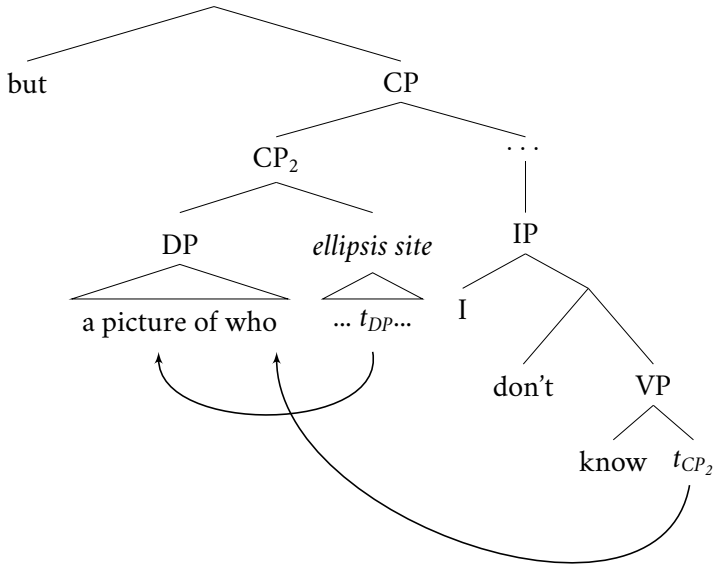
Abels (2019) argues that the ellipsis involved here is not sluicing, but clausal ellipsis of an embedded question, with contrastive left dislocation out of it. This is a type of clausal ellipsis in which a *wh*-word is not obligatorily fronted. Note that *welch-* in the examples above is not the quantificational pronoun as in (6.61), but a proper *wh*-word with the meaning "which". The conspiracy account of determiner sharing predicts that sharing could be possible in an environment where ellipsis coincides with movement, and indeed we have found that it is in examples like (6.65).

Let us take a closer look at the analysis of the swamp-construction. Abels (2019) proposes that not only the remnant, but the entire embedded question undergoes left-dislocation. Inside the fronted embedded question, the remnant left-dislocates out of the interrogative CP, and the CP is subsequently deleted. (6.59-a) is represented as 6.68.[60]

(6.71) a. He has a picture of somebody but a picture of who I don't know.

[60]I represent the first-Merge position of the object CP as the tail of a movement dependency in 6.68 to emphasize that a clause is fronted. I do not commit to any specific analysis of contrastive left dislocation here. Note that many analyses of contrastive left dislocation propose that a resumptive pronoun is merged in argument position which resumed a CP externally merged at the edge of the clause, see e.g., .

b.



(Abels 2019:1225, modified)

One piece of evidence for the fact that not only the overt remnant (as suggested in Abe 2015) but the entire clause is fronted comes from non-agreeing d-pronouns in German. Left-dislocated material must be resumed by a pronoun that agrees in number, gender, and case, glossed as "dPR" in (6.72).

(6.72) a. {Den/ *dem} Mann, {den/ *dem/ *das} habe ich gesehen.
the.M.ACC/ the.M.DAT man dPR.M.ACC/ dPR.M.DAT/ dPR.NEUTR have I seen
"The man, I saw him."

b. Den Männern, {*dem/denen} habe ich geholfen.
the.M.PL.DAT men dPR.M.SG.DAT/ dPR.M.PL.DAT have I helped
"The men, I helped them." (Abels 2019:1232)

Clauses must be resumed by the third person singular neuter form *das*, (6.73).

(6.73) {Wen er eingeladen hat/ Dass er Hans eingeladen hat},
who he invited has that he Hans invited has
{das/ *den/ *die} soll niemand erfahren.
dPR.NEUTR.SG dPR.M.SG.ACC dPR.F.SG should nobody find.out
"Nobody should find out who he invited/ that he invited Hans."
(Abels 2019:1232)

In the swamp construction, and in determiner sharing as well, the resumptive d-pronoun must take the default neuter form, (6.74). This indicates that an entire clause is left-dislocated, not just a DP, which would have to be resumed by an agreeing d-pronoun.

(6.74) a. Die Gerüchte über jemanden haben ihn schockiert, aber
the rumors about somebody have him shocked but
[$_{CP}$ die Gerüchte über wen], {das/ *die/
the rumors about who dPR.NEUTR.SG/ dPR.NEUTR.PL/
*den} weiß ich nicht.
dPR.M.SG know I not
"The rumors about somebody have shocked him, but the rumors about who I don't know." (Abels 2019:1231, modified)

b. Ich weiß welchen Greifvogel er gesehen hat, aber [$_{CP}$ —
I know which raptor he seen has but
Singvogel], {das/ *den} weiß ich nicht.
songbird.M.ACC dPR.NEUTR.SG/ dPR.M.ACC know I not
"I know which raptor he has seen, but I don't know which songbird he has seen."

So far, determiner sharing behaves completely parallel to massive pied-piping. They have the same distributional pattern, they can both be shown to involve fronted clauses rather than fronted DPs (see Abels 2019:1222–1236 for more diagnostics). The final question in this segment concerns the type of movement that the remnant undergoes. Abels (2019:1236–1247) shows that the remnant in the swamp construction is left-dislocated from its question. With

respect to determiner sharing, we have only discussed (split) topicalization as a movement type that can conspire to create sharing so far. The question arises whether left dislocation can also feed determiner sharing, or whether we can have split topicalization in an embedded question. To preview, the answer seems to be *no* in both cases. First, the example in (6.75) shows that contrastive left dislocation can never lead to splits, i.e., it is impossible to left-dislocate a noun phrase while leaving behind a determiner.

(6.75) a. {*(Den)} Jungen, wer hat den gesehen?
the.ACC boy.ACC who has DPR.ACC seen?

b. *?Bücher, die hat Lara nur französische *t* zuhause.
books DPR.ACC has Lara only French at.home

This immediately disqualifies contrastive left dislocation as the movement operation that can conspire with ellipsis to create sharing constructions. The determiner can never be left behind in an ellipsis site, and can thus never be deleted. This means that is must be topicalization, just as in section 6.2 above that can create examples like (6.65). However, (split) topicalization is not independently available neither out of embedded questions, (6.76-a) nor inside them, (6.76-b).

(6.76) a. *Er hat einen Greifvogel gesehen, aber [einen Singvogel]
he has a raptor seen but a songbird
weiß ich nicht wer *t* gesehen hat.
know I not who seen has

b. *Ich sage nicht (ob) Bücher (ob) Hannes nur
I say not whether books whether Hannes only
französische *t* hat
French has

This leaves us with a paradox: we know that there is a clause-sized fronted element of which only a DP remnant is pronounced. The remnant has supposedly moved out of the phrase that will not be pronounced, and there is

evidence for that movement in the swamp construction. However, for determiner sharing, there is no movement that is independently available in this environment that could create the surface structure that we end up with. This problem will be discussed in more detail in section 6.4.2, where I propose that what blocks topicalization in embedded clauses generally, namely the Doubly Filled Comp Filter, is undone by ellipsis. In this way, ellipsis changes the syntactic environment in a way that may give rise to structures we cannot observe otherwise.

Summing up the discussion of "sluicing" with apparent massive pied-piping, even though the swamp construction and determiner sharing cannot trivially receive the same analysis, since left-dislocation cannot create splits, the distributional similarities between them are striking. While the details of this combination of movement and clausal ellipsis remain somewhat puzzling, we see that the basic idea of the conspiracy analysis of determiner sharing makes the right prediction: if it is possible to elide a sufficiently large constituent, and that ellipsis is fed by movement out of the ellipsis site, determiner sharing seems to be available.

Fragment answers Turning to fragment answers, one could assume that they are a better candidate for creating the conditions for determiner sharing to arise. Fragments are the remnants of clausal ellipsis in an answer-utterance (e.g., Merchant 2004, Weir 2014), as in (6.77).

(6.77) What did you see?
Einen Singvogel ~~habe ich *t* gesehen~~
a songbird have I seen

We find that determiner sharing is possible in a single-constituent-answer if the antecedent contains the appropriate contrasting material, see (6.78).

(6.78) a. Mag jede Baronin Lavendel?
likes every baroness lavender
"Does every baroness like lavender?"

b. Nein, Herzogin ~~mag~~ ~~jede~~ ~~*t*~~ ~~Lavendel~~
no duchess likes every lavender
"No, duchess."

However, (6.78-b) constitutes rather a corrective answer to a polarity question, rather than a fragment answer. In open constituent questions, determiner sharing is impossible, (6.79).

(6.79) a. Wer mag Lavendel?
who likes lavender

b. *Herzogin ~~mag~~ ~~jede~~ ~~*t*~~ ~~Lavendel~~
duchess likes every lavender

Uttering a bare singular noun phrase is impossible in German, as (6.79) shows. It is impossible to interpret a non-pronounced quantifier that has been deleted with clausal ellipsis. The reason for this is likely again the identity or recoverability condition on ellipsis: the ellipsis site lacks an appropriate antecedent. The quantifier in (6.79-b) contributes new information not found in the antecedent in (6.79-a). If it is deleted, its meaning cannot be reconstructed. This makes ellipsis of it impossible. If the context provides an appropriate antecedent, as in (6.78), sharing seems to be possible. The answer constituent in (6.78) bears a type of contrastive focus that Dik et al. (1981) call *replacing focus*. In an analysis where fragment answers contain a full clausal structure which is deleted after the fragment moves to the left periphery, the possibility of sharing is predicted (see e.g., Frey 2006, Neeleman & Vermeulen 2012 for accounts in which a contrastive interpretation comes about by movement, which would be compatible with the present analysis of sharing).

To recapitulate, in principle determiner sharing should be possible if two conditions are met: (i) the elided phrase must be big enough that it can con-

tain a stranded determiner, and (ii) split topicalization must be independently available. Additionally, ellipsis is only possible if the identity requirement of ellipsis is obeyed. Fragment answers obey the first condition, but can fail to fulfill the identity requirement.

To conclude this subsection, I have shown how the observation that determiner sharing depends on ellipsis can be accounted for in the present analysis: in an approach where the determiner is not itself targeted for deletion, but instead is deleted as the collateral damage of an independent ellipsis, there is no possible combination of operations that could derive determiner sharing without some sort of ellipsis. I have then discussed some clausal ellipses in German and investigated whether they license determiner sharing. It seems that when the two ingredients, ellipsis of a sufficiently large constituent and topicalization movement out of that constituent, are both available, they can be combined to produce a sharing construction. The most significant conclusion of this section is that determiner sharing is not restricted to gapping, contrary to what has been described in the literature so far. It *is* restricted to ellipses. An approach to sharing in which deletion of the determiner is essentially a by-product of ellipsis of another phrase makes exactly this prediction.

6.4.2. Accounting for the complementizer generalization

We have seen in sections 2.1.1.2 and 3.2.2 that determiner sharing in embedded clauses does not require deletion of the verb, but of the complementizer (an observation by Ackema & Szendrői 2002). The finite verb may surface overtly, compare again (6.80-a) vs. (6.80-b).

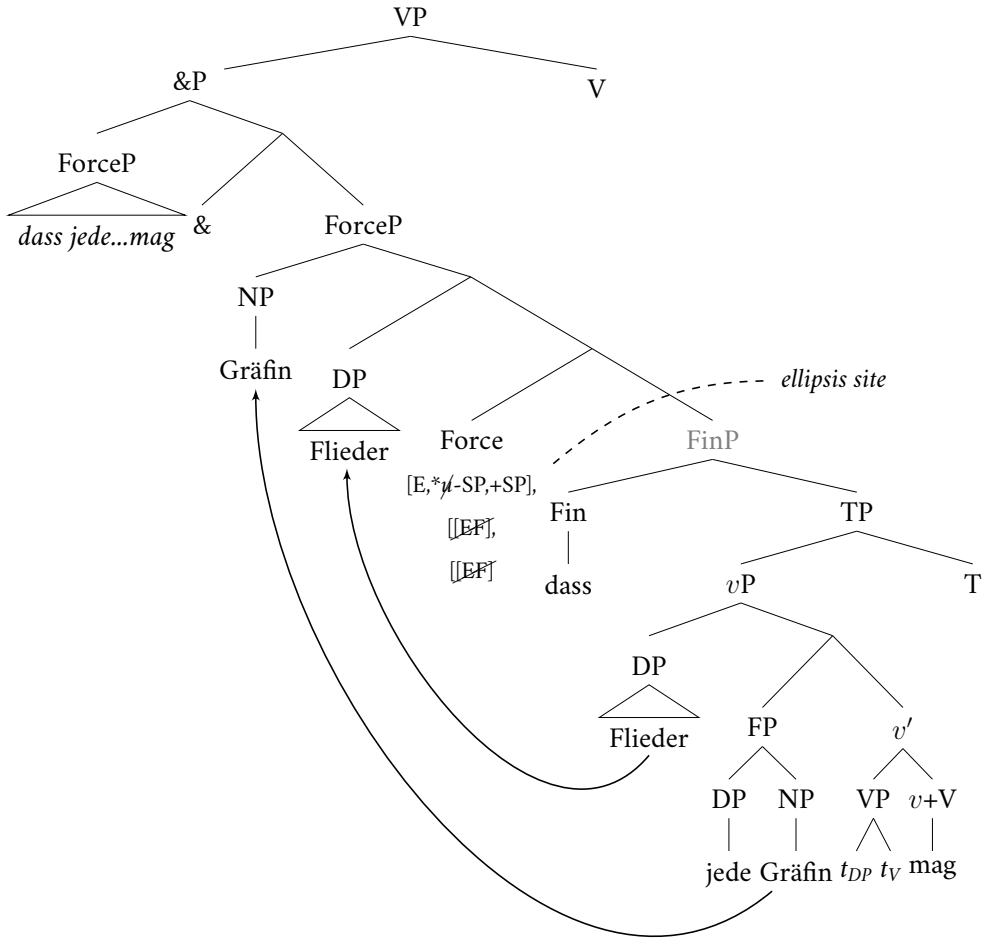
(6.80) a. Ich glaube [dass jede Baronin Magnolien mag] und
I believe that every baroness magnolias likes and
[Gräfin Flieder (hasst)]
countess lilac hates

"I think that every baroness likes magnolias and every countess likes/hates lilac"

b. *Ich glaube [dass jede Baronin Magnolien mag] und [(dass)
I believe that every baroness magnolias likes and that
Gräfin Flieder (dass)]
countess lilac that

This falls out naturally from an analysis of gapping as clausal ellipsis, in which the target of deletion is FinP. I propose that determiner sharing in embedded clauses works in exactly the same ways as in root clauses. As discussed in 4, Fin^0 can be filled by the finite verb in verb-second order, or by the complementizer in verb-final order. Thus the only adjustment we need to make to the derivation of determiner sharing in root clauses is to leave the finite verb *in situ*. The derivation of determiner sharing in embedded clauses such as (6.80-a) proceeds as in (6.81). The noun with the omitted determiner is topicalized to an outer specifier of ForceP, while the second remnant undergoes movement to an inner Spec,ForceP. The [E]-feature bundle on $Force^0$ triggers ellipsis of FinP, which also deletes the determiner contained in FinP. Fin^0 is realized by the complementizer *dass*, and the finite verb stays *in situ*, which would result in verb-final order without ellipsis.

(6.81) *Determiner sharing in embedded clauses*



I assume that we are dealing with a coordination of two full clauses under one matrix verb, following Hartmann (2000). Recall that the evidence for embedding CPs and deleting the complementizer, rather than embedding TPs under a single complementizer, was that *wh*-movement is possible in each conjunct separately, see (4.13), repeated as (6.82). The second conjunct contains a position for a fronted *wh*-element, indicating that it must be clause-sized.

(6.82) Ich verwechsle immer [$_{CP}$ was Peter Ute zum Geburtstag
I confuse always NEG what.ACC P.NOM U.DAT to
schenkt] und [$_{CP}$ *(was) sie ihm ~~zum~~ ~~Geburtstag~~
birthday give and what.ACC she.NOM him.DAT to
~~schenkt~~]
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 via Hartmann 2000:158)

The remainder of this section addresses two further issues: first, I discuss the availability of topicalization in embedded clauses, and second, the role of direction of gapping in embedded determiner sharing.

6.4.2.1. Embedded topicalization

As we have briefly seen above, topicalization in embedded questions is impossible. In fact, topicalization in embedded clauses in general is ruled out (with an exception to be discussed below). The non-elliptical counterpart of (6.80-a) is ungrammatical, (6.83).

(6.83) *Ich glaube, Gräfin dass jede *t* Flieder hasst.
I believe countess that every lilac hates

Thus, the movement that creates splits and therefore sharing is not independently available. It seems that the conspiracy approach to determiner sharing wrongly makes the prediction that sharing should be impossible in embedded environments.

However, there is a confounding factor we need to address: the overt complementizer. Split topicalization is not available in embedded clauses if the complementizer is overt. This is not a restriction specific to NP splits. In fact, all fronting is ungrammatical in the presence of an overt complementizer in standard German, (6.84).

(6.84) a. [Das Buch über Chomsky [$_{Fin}$ solltest du lesen]]
the book about Chomsky should you read
"It is the book about Chomsky that you were supposed to read."

b. *Ich denke [das Buch über Chomsky [$_{Fin}$ dass du lesen
I think the book about Chomsky that you read
solltest]]
should

This is likely an effect of the Doubly Filled Comp Filter (DFCF, Chomsky & Lasnik 1977). Descriptively, the DFCF prohibits the CP from hosting both an overt complementizer and an XP in its specifier. Different analyses have been proposed. Grewendorf (1988) assumes a null complementizer to be freely available in the lexicon, which is licensed by an operator in Spec,CP. Baltin (2010) argues that the DFCF is universal and apparent exceptions involve a stacking of CPs. Koopman (1999) formulates the DFCF as an economy condition (see also other approaches in e.g., Reis 1985, Koopman 1997, Bayer & Brandner 2008, Wurmbrand 2014, Bacskai-Atkari 2020). The DFCF is usually discussed in the context of *wh*- and relative operator movement, but holds for topicalization as well, at least in English and German. It has often been observed that embedded topicalization is only possible in specific contexts, e.g., with verb-second word order, which entails that there is no overt complementizer, (6.85-a) (see e.g., Haider 1984, Platzack 1986,Müller & Sternefeld 1993: 483f., Hooper & Thompson 1973).[61] Consequently, split topicalization is also available, (6.85-b).

[61] It has long been observed that finite verbs and auxiliaries, which are presumably also in Comp in V2-clauses in German or Dutch and in interrogatives in English, do not "count" for the purposes of the DFCF (see e.g., discussion in Koopman 2000).

(6.85) *Embedded (split) topicalization*

a. Ich glaube [das Buch über Chomsky [$_{\text{FinP}}$ solltest du
I believe the book about Chomsky should you
lesen.]]
read
"I think it is the book about Chomsky that you were supposed to read"

b. Ich glaube [Gräfin [$_{\text{FinP}}$ mag jede Flieder.]]
I believe countess likes every lilac
"I think that as for countesses, they all like lilac."

Thus, we could hypothesize that embedded determiner sharing is only possible in sentences that allow embedded verb-second structure (see e.g., Thiersch 1978, Haider 1984, Müller & Sternefeld 1993, Müller 1995, Vikner 1995, Biberauer 2002, Heycock 2006). However, if tested against obligatorily verb-final clauses, we find that this hypothesis turns out to be false. Some predicates do not allow verb-second order in their sentential argument. Such verbs include factive verbs and inherently negative predicates (e.g., *bedauern* "to commiserate", *beklagen* "to lament", *bereuen* "to regret", *bezweifeln* "to doubt" see e.g., Andersson 1975, Den Besten 1977/1983, Meinunger 2004, 2006). They should then block split topicalization and determiner sharing. While split topicalization is indeed impossible, determiner sharing seems to be allowed, (6.86).

(6.86) a. *Ich beklage (es) Gräfin dass jede *t* Flieder mag.
I lament it countess that every lilac likes

b. Ich beklage dass jede Baronin Magnolien mag und
I lament that every baroness magnolias likes and
Gräfin Flieder.
countess lilac
"I lament that every baroness likes magnolias and every countess likes lilac."

This means that an underlying verb-second order is not obligatory for determiner sharing.[62] Determiner sharing must be able to occur out of verb-final clauses, even if they do not allow split topicalization. This is the same puzzle as with the swamp-like constructions above: in some contexts, e.g., root clauses, we have evidence for the movement that creates sharing, while in other contexts, e.g., embedded clauses, we seem to get sharing even though the movement that creates it is not available. It seems that, since sharing *is* attested in embedded clauses, this movement must have happened, but it can only apply in embedded contexts when the clause is subsequently deleted. This could be an effect of what is known as repair by ellipsis: an intermediate stage of the derivation is ungrammatical and only becomes grammatical once ellipsis happens (see e.g., Merchant 2001, 2004, 2010, Nakao 2009 vs. e.g., Fox & Lasnik 2003, Fukaya 2007, Barros et al. 2014, Sailor & Schütze 2014). Repair by ellipsis has originally been proposed as an explanation for the lack of island violations in elliptical structures. Ross (1969) observes that island violations unexpectedly do not occur in elliptical contexts. In other words, ellip-

[62] I have assumed throughout this chapter that the conjuncts always exhibit completely parallel structures, especially with respect to word order. However, it should be noted that German allows for the coordination of non-parallel structures in some contexts. Specifically, verb-final clauses can be coordinated with verb-second clauses as in (i) (T. Höhle, p.c. to Reis 1985, Höhle 1990).

(i) [[Wenn ich nach Hause komme] und [der Gerichtsvollzieher steht vor der
when I to home come and the bailiff stand in.front.of the
Tür]], ist meine gute Laune hin.
door is my good mood gone
"When I come home and the bailiff is already waiting, my good mood is gone."
(Reis 1985:288)

This kind of coordination is restricted. For instance, it is not easy to change the order and coordinate a V2 clause with a verb-final clause, (ii).

(ii) *Ich glaube, [jede Baronin mag Rosen] und [dass jede Gräfin Tulpen mag].
I believe every baroness likes roses and that every countess tulips likes

sis "repairs" these island violations. In sluicing, for instance, *wh*-movement is allowed out of an island, when it is ungrammatical without deletion, (6.87).

(6.87) a. They hired someone who speaks a Balkan language, but I don't know [which language$_1$ [~~they hired someone who speaks~~ ~~t_1~~]]

b. *They hired someone who speaks a Balkan language, but I don't know which language they hired someone who speaks.

Similarly, in the case of determiner sharing, ellipsis somehow repairs whatever prohibits embedded (split) topicalization. It is plausible to assume that the (non-)overtness of the complementizer plays a crucial role here. Whatever the right view on the DFCF is, its effect can somehow be preempted by ellipsis. For instance, Merchant (2001) proposes that sluicing can ameliorate such islands that incur a violation at PF. Some structures are islands because they would involve a PF that is in some way deficient. If a faulty PF-structure is deleted by ellipsis, the reason for the crash is omitted as well. Thus, structures that would be filtered out without ellipsis can converge because the element that the filter is sensitive to has been eliminated. In order for the analysis developed in this chapter to work out, we have to assume that such repair by ellipsis is possible.

A hint that this might be on the right track comes from southern varieties of German and Swiss German. These varieties allow a doubly filled Comp, (6.88).

(6.88) I frog-me [$_{CP}$ [fia wos] [$_C$ dass-ma] an zwoatn Fernseher
I ask-REFL for what that-one a second TV
braucht]
needs
"I wonder what one would need a second TV for."
(*Bavarian*, Bayer & Brandner 2008:88)

In these varieties, (split) topicalization in an embedded clause seems to be possible, as well as determiner sharing.[63] No repair is needed. (6.89) exemplifies split topicalization in embedded clauses. 6.87 and 6.88 show determiner sharing (of the *wh*-phrase). The Swabian speaker did not report a contrast between the determiner sharing sentences with and without an overt complementizer, but the Bavarian speaker did.

(6.89) I glaub [[Bicher] [dass] se nur französische *t* liest]
I think books that she only French reads
"I think that as for books, she reads only French ones." *Swabian*

(6.90) a. I frog mi [wie viel Bicher dass die Maria glesa hot] ond
I ask REFL how many books that the Maria read has and
[Filme der Peter geschaut hot].
movies the Peter seen has

b. I frog mi [wie viel Bicher dass die Maria glesa hot] ond
I ask REFL how many books that the Maria read has and
[Filme dass der Peter geschaut hot].
movies that the Peter seen has
"I wonder how many books Maria has read and how many movies Peter has seen." *Swabian*

(6.91) a. I frog mi [wia vui Biacha dos d-Maria glesen hod] und
I ask REFL how many books that the-Maria read has and
[Fuim d-Petr o gschaut hod].
movies the-Peter also seen has

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

[63] I am extremely grateful to Vitali Weiß for helping me collect these data.

Summing up what we have discussed so far, I argue that determiner sharing in embedded clauses can receive the same analysis as determiner sharing in root clauses. The type of movement in embedded clauses posed a complication for the account. While (split) topicalization is not available in embedded clauses generally, I follow previous research that suggests that the reason for the impossibility of an operation in a certain context can be undone by ellipsis. If topicalization is ruled out because it creates a problem for the Doubly Filled Comp Filter when it occurs across a complementizer, deletion of the complementizer, as it happens in gapping and other clausal ellipses, can repair a DFCF violation and make topicalization possible.

6.4.2.2. Forward vs. backward gapping

Turning now to the final issue in embedded clauses, we have already discussed above that gapping in embedded clauses can apply in two "directions". Recall that so-called forward gapping describes the majority of the sentences we have been talking about, where the finite verb is deleted in the non-initial conjunct, (6.92-a). In backward gapping, the ellipsis happens in the initial conjunct. Backward gapping is only possible in embedded verb-final clauses in German, (6.93).

(6.92) a. [Die Baronin liebt Rosen] und [der Gärtner $___V$ Tulpen]
the baroness loves roses and the gardener tulips

b. Ich denke, [dass die Baronin Rosen $___V$] und [der Gärtner
I think that the baroness roses and the gardener
Tulpen liebt]
tulips loves
"(I think that) the baroness loves roses and the gardener loves tulips."

In forward gapping, determiner sharing is a by-product of deletion of the verb in the same conjunct. If we apply the same logic to backward gapping, we could expect that backward gapping makes "backward" determiner sharing

possible, i.e., a determiner is missing in the initial conjunct. Curiously, this does not seem to be possible, (6.93).

(6.93) *Ich glaube, [(dass) $___D$ Baronin Rosen] und [jede Gräfin Flieder
I believe that baroness roses and every countess lilac
mag].
likes

Instead, what *is* attested, is the distribution of verbal and determiner gaps across the conjuncts. In other words, backward gapping licenses forward determiner sharing. The experiments in section 3 also showed that the direction of gapping in embedded clauses does not play a role; both forward and backward gapping license determiner sharing in the non-initial conjunct. For backward gapping, this creates the pattern where the verb is missing from the first conjunct, and the determiner from the second one, (6.94).

(6.94) Ich glaube, [dass jede Baronin Rosen $___V$] und [$___D$ Gräfin
I believe that every baroness roses and countess
Flieder mag].
lilac likes

Initially, this seems puzzling under the analysis developed above. First, if determiner sharing is parasitic on gapping, the analysis would predict (6.90) to be possible, contrary to fact. Second, in (6.94) determiner sharing can seemingly occur without being licensed by gapping in the same conjunct at all. However, I argue that (6.93) and (6.94) are not in fact instances of gapping.

Notice that in (6.94), the complementizer in the initial conjunct is overt. If Hartmann (2000), Repp (2009) a.o. are right and gapping must be defined as FinP deletion, no gapping has occurred. Backward "gapping" can never delete a complementizer, (6.95).

(6.95) *Ich beklage $___C$ jede Baronin Rosen (liebt) und ihr Gärtner
I lament every baroness roses likes and her gardener
Tulpen liebt.
tulips likes

In contrast, forward gapping must always delete the complementizer, (6.96).

(6.96) Ich beklage dass jede Baronin Rosen liebt und (*dass) ihr
I lament that every baroness roses likes and that her
Gärtner Tulpen $___V$.
gardener tulips

I argue that these examples show convincingly that FinP is not deleted in the initial conjunct, and we should thus not expect a determiner being shared there. Sentences like (6.90) are thus correctly predicted to be ungrammatical by the present analysis.

What about the unexpectedly grammatical case (6.91)? While it seems that there is an overt finite verb in the elliptical conjunct, I argue that this is an illusion. The second conjunct in (6.91) does in fact show gapping, which can then entail sharing of the determiner. Notice that the complementizer is obligatorily missing from the conjunct in which the determiner is shared, (6.97).

(6.97) Ich glaube, [dass jede Baronin Rosen $___V$] und [(*dass) $___D$
I believe that every baroness roses and that
Gräfin Flieder (*dass) mag].
countess lilac that likes

This suggests that FinP is deleted. We can thus expect a determiner to be split off and contained in the ellipsis site. The last open question regards the overt finite verb. As already argued in chapter 4.4, I follow a long tradition of research in assuming that what (6.97) and (6.91) show is a case of Right Node Raising (RNR). Thus, backward gapping is a misnomer. Backward and forward gapping are not different flavors of the same process. Instead, gapping

can only occur "forwards" and what has been described as backward gapping is actually RNR (see e.g., Maling 1972, Hankamer 1979, Wesche 1995, Kornfilt 2000, Ha 2008, Hernández 2007, Ackema 2010). RNR is an operation that is sensitive to the right edge of a clause (McCawley 1982, Wilder 1997, 1999, Hartmann 2000, Sabbagh 2007). Backwards gapping, as we have seen, can only occur with verb-final clauses, never verb-second order. For German gapping, as far as I can see, there is no evidence that something like backward gapping exists in addition to RNR; all cases of backward gapping also fit the description of RNR in German.

If gapping is deletion of FinP, the present analysis correctly predicts that determiner sharing should never occur backwards, with a determiner missing in the initial conjunct.

To sum up, the complementizer generalization falls out from an approach that views gapping as clausal ellipsis. If gapping targets the projection that can host either finite verbs or complementizers, it follows that it is the determiner that is deleted when the verb does not move into Fin^0.

6.4.3. Accounting for the first-element generalization

As McCawley (1993) first described, determiner sharing can only occur if the nominal with the missing determiner is the initial element in its conjunct. Recall examples such as (6.98).

(6.98) a. Viele Kollegen haben Petra Pralinen geschenkt, und [$__{}_{D}$
many colleagues have Petra chocolates given and
Freunde] [Blumen].
friends bouquet
"Many colleagues gave Petra a box of chocolates as a present, and many friends have given her a bouquet of flowers."

b. #Pralinen haben viele Kollegen Petra geschenkt und
chocolates have many colleagues Petra given and
[Blumen] [$__{}_D$ Freunde].
flowers friends

I argue that this generalization falls out from the interaction of the interface filter of topic-focus word order (6.14) and split topicalization. To preview the detailed discussion below, the fronted NP which is missing its determiner is a topic, and can only occur in the position in which topics can be interpreted, i.e., the initial position. Only such derivations are licit in which the results of syntax pass the *Foc > Top filter. Ungrammatical instances like (6.98-b) are filtered out.

Independently of the information structure of gapping, split topicalizations have their own pragmatic requirements. Crucially, TOP must interpreted as a (contrastive) topic (e.g., Kniffka 1996, Nolda 2007:107, see also Büring 1997a, Jacobs 1997, Krifka 1998, *pace* Puig Waldmüller 2006:78, Ott 2011:16, Van Hoof 2003). REM is preferably, but not obligatorily, interpreted as a focus. Compare (6.99). In a verum-focus configuration, the truth of the entire proposition is emphasized (Höhle 1992, Féry 1993), and a pitch accent associated with focus is placed on the finite verb (see e.g., Gundel 1978, Schmerling 1976, Selkirk 1984, Vallduví & Vilkuna 1998, Zacharski 1993 for the relation between pitch accent and focus; uppercase letters indicate a prominent pitch accent). REM does not receive focus interpretation nor focus prosody.

(6.99) Geld soll ich ausgeben? <u>Geld</u> HABE ich aber <u>keins</u> *t* !
money should I spend money have I however no
"I'm supposed to spend money? But I don't HAVE any money!"

(Nolda 2007)

TOP in (6.99) is interpreted as the topic. I argue that TOP always has topic properties independently, and can therefore only be interpreted as a topic

when it occurs as the remnant of gapping, i.e., only those derivations converge that move TOP to the outer specifier of ForceP. Only in this position do the pragmatic requirements of TOP and of the remnant structure match.

Let us consider a few diagnostics of focus, based on Van der Wal (2016). I show that TOP can never be interpreted as focused in run-of-the-mill split topicalizations. (6.100) illustrates the classic focus test, a *wh*-question (see e.g., Dik 1997, Reich 2002, Kasimir 2005, Krifka 2007). The answer to a *wh*-question receives (new information) focus, and we can see that a split is infelicitous.

(6.100)*What did she read?*

a. #Bücher hat sie französische __ gelesen.
books has she French read

b. Französische Bücher hat sie gelesen.
French books has she read

c. Sie hat französische Bücher gelesen.
She has French books read
"She read French books."

Focus can be interpreted *in situ*, (6.100-c), and fronted, (6.100-b). Splits as in (6.100-a) are completely impossible in this context, presumably because splitting up an NP induces a topic interpretation for the fronted part, and that clashes with the required focus interpretation as an answer to a *wh*-question. A single phrase cannot be both a topic and a focus in the same context.

The next test employs a counterfactual implicature, which can be triggered by some adverbs and emotive factive predicates (Dretske 1972). These elements introduce an alternative that a focus interpretation can exclude. As an illustrative example, (6.101-a) contains a focus on "white". The adverb 'fortunately' in (6.101-a) triggers the implicature given in (6.101-b). Since the possible world of (6.101-b) is ruled out, focus on 'white' in (6.101-a) induces an exclusivity reading.

(6.101)a. Fortunately Bill spilled WHITE wine on the carpet.

b. → if he had spilled red wine, that would have been less fortunate
(Krifka & Musan 2012: 14)

If we compare split constructions, we find that an equivalent adverb can never create counterfactual alternatives to the moved element. Accenting TOP in (6.102), indicating that it is supposed to be focused, already creates a marked prosody. The counterfactual alternatives can never refer to the fronted element in splits, (6.102-b). However, the split-off remnant *in situ* can receive an exclusive-focus interpretation, (6.102-c) (with accent on *französische*).

(6.102)a. BÜCHER hat sie zum Glück nur französische ___.
books has she to luck only French
"As for books, she fortunately only has French ones."

b. → #if she had French movies, that would be less fortunate

c. → if she had Russian books, that would be less fortunate

Similarly, adding 'and not Y' can be used to delineate focus. This continuation excludes at least one alternative (Chafe 1976), showing that a focus strategy is compatible with an exclusive reading. The alternative can never be constructed over the moved element in splits, as (6.103) shows. This suggests that the moved element is not focused.

(6.103)a. Rotwein trinkt er gern italienischen *t* ...
red.wine drinks he gladly Italian

b. #... und nicht Weißwein.
and not white.wine

c. ... und nicht französischen.
and not French

Lastly, corrective replies can be used to diagnose focus by excluding an alternative given in the incorrect utterance, see (6.104).

(6.104)a. John went to the party.
b. No, Mary (went to the party).

We see again that the moved element cannot be the one for which alternatives are excluded, and thus is not focused. The *in situ* element can be focused, (6.105).

(6.105)a. Bücher mag sie nur französische *t*.
books likes she only French
b. #Nein, Filme.
no movies
c. Nein, russische.
no Russian

I take these observations to indicate that TOP cannot be interpreted as a focus. Instead, it must be interpreted as a (contrastive) topic. Disregarding a proper semantic-pragmatic analysis, it must be the case that splitting up a DP creates a topic-comment structure over the associated parts. Splits have their own pragmatic structure that must fit the information structure of gapping. The unattested word order in (6.95) is excluded by the need to fulfill the pragmatic requirements of split topicalizations. TOP can never occur as the second remnant, since there is a clash of the interpretation of that position (focus) and the pragmatics of a split NP (topic). In this way, a theory of determiner sharing that relies on split topicalization makes exactly the right predictions.

6.4.4. Accounting for the no-constituents generalization

An especially strong prediction of this analysis of determiner sharing is that it should be possible to share large non-constituent chunks, parallel to split topicalization. We have seen that it is possible to delete more than one determiner or quantifier. The deleted material need not form a constituent, and

can even be comprised of pre- and post-nominal modifiers. Recall examples such as (6.106).

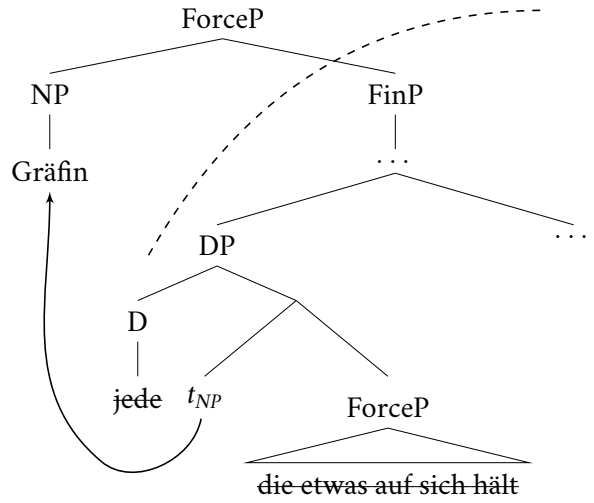
(6.106)a. Jede einzelne britische Baronin mag Magnolien und Gräfin
every single British baroness likes magnolias and countess
Flieder.
lilac
"Every single British baroness likes magnolias and every single British countess likes lilac."

b. Jede Baronin [$_{CP}$ die etwas auf sich hält] mag
every baroness who something PARTC REFL respects likes
Magnolien und Gräfin Flieder.
magnolias and countess lilac
"Every self-respecting baroness likes magnolias and every self-respecting countess likes lilac."

The present analysis derives this generalization without difficulty. A move-and-delete approach of non-constituent ellipsis makes reference not to the deleted material itself, but to the remnants (see e.g., Sailor & Thoms 2014). The only elements that syntactic processes make reference to are the deleted phrase, FinP, and the remnant XPs. The material inside the ellipsis site need not form a constituent in order for the analysis to go through. Only the NP is topicalized, as in (6.107), leaving other DP-internal material behind. If that material is contained in an ellipsis site, the result is a determiner sharing structure like (6.106), see (6.108).

(6.107) Gräfin mag jede *t* die etwas auf sich hält Rosen.
countess likes every who something PARTC REFL respects roses
"As for countesses, every self-respecting one likes roses."

(6.108)



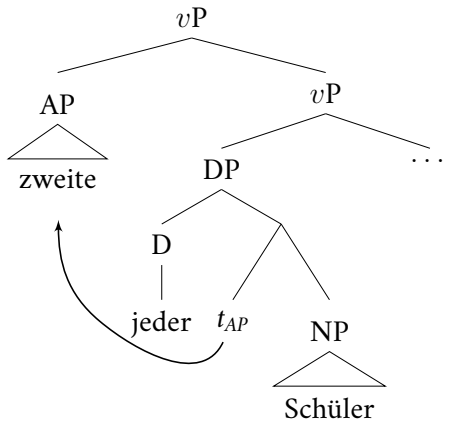
On the other hand, the remnant must always be a constituent, as we have seen in 3.2.4. Recall that a complex remnant must be built up incrementally, and cannot contain a deleted element, (6.109).

(6.109) #Jeder zweite Schüler leidet unter Stress und jeder $___D$ Lehrer
every second student suffers under stress and every teacher
$___V$ unter Lärm.
under noise
intended: *"Every other student suffers from stress and every other teacher suffers from noise."*

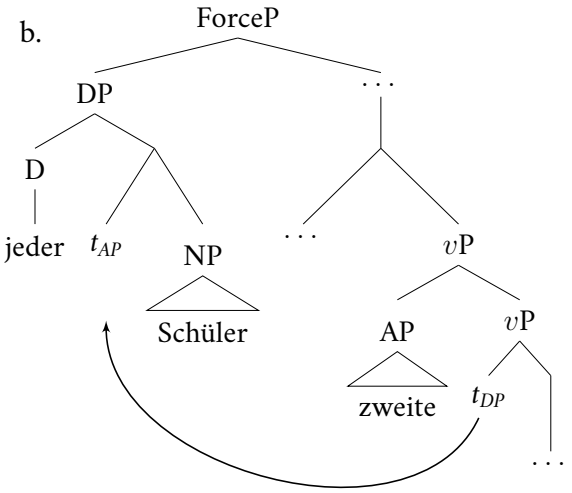
The analysis presented above predicts this pattern: the remnant survives ellipsis by moving out of the ellipsis site. Since the material that can be affected by syntactic processes such as Agree and Move (internal Merge) is defined as a constituent, the observation is trivially derived. In order to derive such examples as (6.109), we would have to postulate that first, the deleted numeral can evacuate the DP, (6.110-a). The nominal containing a trace then remnant-moves to the left periphery, (6.110-b). While remnant-DP movement may be

possible, the initial movement step bears resemblance to Left Branch Extraction, which is not available in German.

(6.110)a.



b.



In sum, a movement based approach to ellipsis directly predicts the no-constituents generalization.

6.4.5. Accounting for the no-low-elements generalization

Not all determiners and quantifiers can be shared. This is one of the least well understood properties of determiner sharing. Based on admittedly non-

exhaustive data, I come to the following preliminary conclusions. According to the present analysis, all elements that can occur in split topicalization should also be able to occur in splits. This is true for most elements, as has been discussed in 5.2. Specifically, it seems that all elements that can occur in sharing constructions can also occur in splits. Elements that cannot be split, like the definite and indefinite article, also cannot be shared. However, there are some elements that are possible in splits but very degraded if not impossible in sharing constructions: numerals, possessive pronouns, and bare adjectives, see (6.111) and (6.112), repeated from (5.44) and (5.45).

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

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

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

(6.112)a. Amseln hab ich zwei *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. Mantel hat Hildegard ihren nassen *t* tatsächlich im Kasten
coat has Hildegard her wet really in.the closet
aufgehängt.
hung
"As for her coat, Hildegard really hung up her wet one in the closet."
(Puig Waldmüller 2006: 69)

c. Wein hat sie nur georgischen *t* da.
wine has she only Georgian there
"As for wine, she only has a Georgian one."

In 3.2.5 above I have suggested that non-shareable determiners may be too low in the nominal spine to be split off by split topicalization (based on e.g., Julien 2002, Giusti 2002). Numerals and adjectives form a clear exception to that generalization. They have been argued to occupy low positions, but they can be split off. There must be additional restrictions in determiner sharing that split topicalization does not violate. Since the lexical variation of determiner sharing is not the focus of this thesis, I leave this as an open issue. I have proposed above in 5.2 that the problem may be located on the LF-interface: the semantic composition of nouns and quantifiers is in some significant sense different than that of nouns and possessors/numerals/adjectives.

6.4.6. Summary

This section has aimed to show how the properties of determiner sharing structures can be derived from the analysis developed above. The fundamental idea is strikingly trivial: a determiner can only be "shared", i.e., deleted, if it is stranded in a larger ellipsis site. I propose it can be stranded there by split topicalization. I have shown that not only gapping can license determiner sharing, as has been previously presumed in the literature, but also stripping and potentially the clausal ellipsis that is at work in the swamp construction. The prediction of the new analysis is that determiner sharing can arise whenever (i) there is an ellipsis that applies to a large enough structure to contain a stranded element in argument position, and (ii) split topicalization is possible. The dependence of sharing on clausal ellipsis and the no-constituents generalization fall out naturally from the analysis: the determiner is not deleted directly, but instead can only be elided as a by-product of an unrelated ellipsis, usually gapping. I have shown that the direction of gapping does not play a role for determiner sharing. The first-element generalization is derived via an interface requirement to interpret topics externally to foci. If the nominal with the missing determiner is topicalized, it will always occur higher than

the other remnants, as the initial element of the conjunct. Finally, I cautiously proposed a preliminary generalization about non-shareable elements that are too low in the nominal spine, that I admit needs further research.

6.5. An alternative analysis: Structure Removal

In recent years, there has been increasing interest in the old question of deleting structure in syntax proper. The idea that syntax cannot only built monotonically increasing hierarchical structures, but also remove parts of an existing representation goes back to transformational approaches like S-Pruning in Ross (1967), taken up again by e.g., É. Kiss (2008), Stepanov (2012). Two recent prominent proposals that emerged virtually at the same time are *exfoliation* Pesetsky (2016, 2019) and *structure removal* Müller (2016, 2017, 2018b), see also Murphy (2016), Schwarzer (2017), Zyman (2018), Murphy (2019).

Exfoliation is a derivational operation that is triggered when an element in a higher clause tries to attract an element a lower clause across a phase boundary, as defined in (6.113). The empirical focus in Pesetsky (2019) is on complementizer-trace effects and ECM constructions.

(6.113) *Exfoliation* (Pesetsky 2019:11)

a. Structural description: ... β ... [$_{\text{YP(phase)}}$ ... [$_{\gamma\text{P(non-phase)}}$ ... α ...]], where
   (i) YP is the phase that dominates α but not β,
   (ii) α occupies the edge of γP,
   (iii) a movement-triggering probe on β has located α as its goal.

b. Structural Change: Replace YP with γP, which takes the phasal property of its predecessor.

Structure removal relies on the hypothesis that there exists a structure modifying operation that is entirely parallel to Merge. In the same way that Merge

builds up structure, Remove can break it down. Remove is considered a derivational operation with the properties in (6.114).

(6.114) *Assumptions about Remove* (Müller 2015: 2f.)

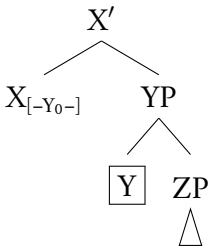
a. Remove is feature-driven. It is triggered by designated [–F–] features, which are ordered on lexical items.
b. Remove may apply to heads or phrases: [–F0–], [–F2–].
c. Remove obeys the Strict Cycle Condition.
d. Remove can be external or internal.

Exfoliation and Remove are similar, but different (see Pesetsky 2019: 12 for discussion). Most importantly, in contrast to Remove, Exfoliation is a repair. It is triggered as a Last resort process that salvages a movement dependency that could not happen otherwise. Remove is an operation that is triggered by designated features on certain heads, like Merge (Svenonius 1994, Grewendorf 2002, Abels 2012a, Stabler 2013, Müller 2014 a.o., but contra Chomsky 2013, 2014, Chomsky et al. 2019).

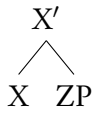
Structure Removal seems to lend itself ideally to the analysis of ellipsis. There are two possibilities at the operation gives us: deletion of a head and deletion of a phrase. We will first look at head removal. Abstractly, heads are removed as in (6.115).

(6.115) *Removal of complement heads* (Müller 2015: 4)

a. Merge ($X_{[\bullet Y \bullet > -Y_0-]}$,YP)



b. Remove (X_{-Y_0-},Y)



The structure modifying features are ordered on X^0. Merge features are intrinsically ordered before Remove features. First, X merges with YP. The structure-building features are surrounded by bullets in Müller's notation, [•Y•]. After they merged, the feature is checked and deleted. Then X removes YP immediately after. The removal features are notated as [–Y_0–]. The subscript 0 indicates that Remove targets the head. Removal of the whole phrase would be triggered by [–Y_2–]. The result of the checking of [–Y_0–] is that Y^0 and its projection are deleted from the syntax. As an effect, ZP slides up to become the direct complement of X.

6.5.1. Removal of Fin^0

Turning now to gapping and determiner sharing, Remove gives us the opportunity to delete only Fin^0, which would directly derive the Finite First Condition. For this outcome, $Force^0$ would have the feature structure in (6.116).

(6.116) [•Fin• > –Fin_0–]

At this point, no phrases have moved to the left periphery. We have to add movement features to the set in (6.116), as in (6.117).[64]

(6.117) [•Fin• > •EF• > •EF• > –Fin_0–]

The difference between this and the move-and-delete account developed above is that movement of the remnants is intuitively less motivated because they do not have to move to escape an ellipsis site. Movement of two independent phrases to the left periphery is not generally allowed in German (see also section 7.1). While intuitively move-and-delete appears very unlike a spot dele-

[64] The bullet notation is equivalent to the [uF] notation. The movement features are ordered before the Remove feature, but in this case ordering them after [–Fin_0–] would derive the same result.

tion via Remove, the implementations of exceptional movement associated with them may not be so dissimilar.

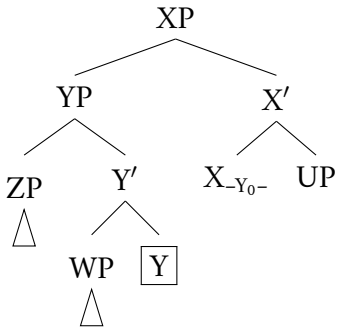
Graver problems arise when the ellipsis site is not minimal, but can contain more than just the finite verb. In order to achieve ellipsis as in the example in (6.118), we need a second Remove feature on a different head.

(6.118)a. Wir haben die Muffins gebacken und ihr ~~habt~~ den Kuchen
we have the muffins baked and you.PL have the cake
~~gebacken~~.
baked

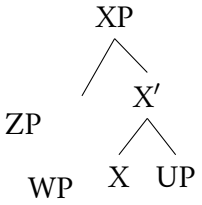
b. *Wir haben die Muffins gebacken und ihr habt den Kuchen
we have the muffins baked and you.PL have the cake
~~gebacken~~.
baked
"We have baked the muffins and you the cake."

To delete the non-finite verb, we need a [–V_0–] feature on v. The appearance of it must be restricted such that it can only occur if there is a head with [–Fin_0–] as well, since sentences like (6.118-b) in which only the non-finite, but not the finite verb is deleted are unattested. In a similar vein, we need a different approach to the deletion of the determiner. Under a head-removal approach, the ellipsis sites are so small that they cannot contain any material other than what was intended to be deleted. In order to delete a determiner, we need a feature [–D_0–] that is dependent on [–Fin_0–] in the same way as [–V_0–]. This approach requires assumptions about a proper licensing mechanism. Let us focus for a moment on the removal of D^0. The removal feature is on v. Removal of heads in specifiers is assumed to happen according to (6.115)–(6.116). If the specifier is complex, the phrases contained in it will not be removed. Instead, the phrases have to be re-associated to the remaining structure after removal, preserving their hierarchical relation prior to removal.

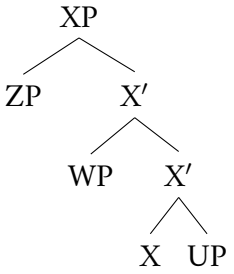
(6.119) Merge ($X'_{[\bullet Y \bullet > -Y_0-]}$,YP)



(6.120) Remove (X'_{-Y_0-},YP)



(6.121) Reassociation



As the former specifier of Y, ZP c-commanded WP. Thus, ZP must also c-command WP in the structure after removal. We can think of YP as DP and WP as NP. This kind of approach cannot derive why the nominal with the missing determiner is always the topic. It would be able to derive ungrammatical word orders like (6.122).

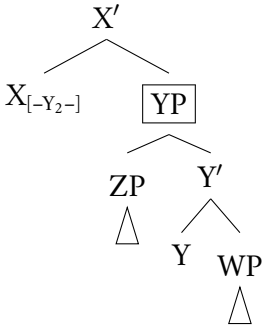
(6.122) *Jede Studentin spielt Klavier und Geige Schülerin.
every student plays piano and violin pupil

6.5.2. Removal of FinP

The other possibility would be to have Remove target entire phrases, as in (6.123).

(6.123) *Removal of complement phrases* (Müller 2015: 3)

a. Merge ($X_{[\bullet Y \bullet > -Y_2-]}$,YP)



b. Remove (X_{-Y_2-},YP)

X

The whole YP and everything it contains is removed from the computation, and only X remains. Note that ZP and WP cannot be targeted for removal by X without a violation of the SCC. Thus, the result is similar to that of the move-and-delete approach. In a way, removal of FinP is taking move-and-delete more seriously than the analysis developed above. Movement of the remnants i) must occur, otherwise the remnants are really not part of the structure anymore, and ii) must occur before deletion of FinP, suggesting the feature structure on $Force^0$ in (6.124).

(6.124) [•Fin• > •EF• > •EF• > $-Fin_2-$]

Just as above, we also get determiner sharing for free.

The only requirement that is missing from the removal account as of now is a way to restrict ellipsis to the environments in which it is attested. Nothing derives the fact that gapping only occurs in coordinations, sluicing in embedded interrogative clauses etc., but this is also a problem for the [E]-feature approach, as discussed above. [E]-bundles are also unrestricted and the licensing is only a technical tool and not particularly explanatory. However, a licensing mechanism can easily be constructed for a removal approach such that it covers the same empirical ground as the [E]-approach.

To sum up, I conclude that for the purposes of determiner sharing, the [E]-feature analysis as presented above and a phrasal Remove analysis of ellipsis are equivalent. The removal of phrases has the advantage of requiring fewer stipulations than the head-removal approach. In terms of empirical coverage as well as theoretical quality, I do not find significant distinctions between the [E]-feature approach and the Remove approach.

6.6. Chapter summary

In this chapter I have put forward a novel analysis of determiner sharing, and the first analysis of determiner sharing in German. I propose that the conspiracy of split topicalization and gapping, or other ellipses, can create the structures that have been labeled determiner sharing constructions. This analysis contributes to making the discussion of ellipsis phenomena less construction-specific by investigating broader contexts in which sharing may occur and formalizing these observations in the analysis. I have shown how this approach can account for the empirical properties of determiner sharing. I argue that the successful predictions of this analysis offer an argument for the move-and-delete approach to ellipsis.

7. Exceptional evacuation movement

This chapter addresses the movement that can seemingly only occur in ellipsis contexts, called exceptional movement (EM). First, section 7.1 investigates the empirical question of multiple movements to the prefield in German and reviews other empirical arguments that pose problems for a move-and-delete approach to ellipsis. Section 7.2 gives an overview of previous accounts of exceptional movement. In section 7.3, I propose another account that is more adequate for the general Minimalist framework the analysis is set in. Section 7.4 concludes.

7.1. Multiply filled prefields and other empirical problems for the MDA

In the analysis so far, I have simply assumed that there are two edge feature probes on Force^0 that attract two phrases into Spec,ForceP. However, this generates a structure that is not regularly available in German. The left periphery in German, traditionally known as the prefield, can generally only be filled by a single constituent. Multiply filled prefields as we find them in gapping structures are generally ruled out when no gapping occurs, (7.1).

(7.1) *[$_{\text{ForceP}}$ [$_{\text{DP}}$ Lehrerin] [$_{\text{DP}}$ Klavier] [$_{\text{Fin}}$ spielt [$_{v\text{P}}$ jede *t t*]]].
teacher piano plays every

Multiple fronting is attested in German only under specific discourse conditions (Bildhauer & Cook 2010, Müller et al. 2012), for specific combinations of elements (e.g., Müller 2003, Müller 2005), see (7.2).[65]

(7.2) a. [Dem Saft] [eine kräftigere Farbe] geben Blutorangen.
to.the juice a more.vivid colour give blood.oranges
"What gives the juice a more vivid color are blood oranges."
(Bildhauer & Cook 2010)

b. [Gar nichts mehr] [mit dem Tabakkonzern] hat Jan
PARTC nothing anymore with the tobacco.company has J.
Philipp Reemtsma zu tun [...]
Ph. R. to do
"J. Ph. Reemtsma has nothing to do with the tobacco company anymore [...]" (Müller 2003: 6)

Out of the blue, these sentences sound awkward at best, especially if the fronted elements are not indefinite and do not show base word order, as pointed out by Müller (2004), (7.3).

(7.3) *[Dieses billige Geschenk] [der Frau] sollte man nicht geben.
this cheap present to.the woman should one not give
intended: *"One shouldn't give this cheap present to one's wife."*
(Müller 2004)

Müller et al. (2012: 4) explicitly note that it is impossible to front a subject along with other arguments or adjuncts, even if all the syntactic and information-structural conditions are met (but see Müller 2018b: ex. (11) for a counterexample).

[65] However, there is some debate as to whether some of the elements in the prefield really are independent constituents, or rather a single complex one, see e.g., Fanselow (1993), Müller (2004), Jensen (2012), Müller (2018b,a).

It seems that one of the movements to fill the prefield I assumed in section 6.2 is truly exceptional in the sense that it can only occur in the context of ellipsis (see e.g., Thoms 2013). While one edge feature on Force^0 triggers regular topicalization, i.e., prefield-filling movement, in German, the other edge feature that I have assumed so far is only licit if Force^0 also triggers ellipsis. It is a well known property of ellipsis that it seems to license movements that are otherwise not available. Another example comes from elements that are generally immobile. Certain elements like Negative Polarity Items (NPIs) or bare (NP-less) quantifiers cannot undergo regular A′ movement (Merchant 2004, Valmala 2007, Weir 2014). However, they can be remnants of ellipsis. In (7.4), the NPI *any* is shown to resist topicalization and movement for cleft formation.

(7.4) a. ??Any wine, John didn't buy ___.
b. *It was any wine that John didn't buy. (Weir 2014)

It is perfectly possible as a fragment answer, however, as (7.5) illustrates.

(7.5) a. John has returned with the shopping for the party. A and B know that he bought cheese, olives, and juice, but suspect that he has forgotten something.
b. A: What didn't he buy? B: Any wine. (Weir 2014)

The fact that NPIs cannot undergo regular movement but seemingly can undergo obligatory A′ movement to escape an ellipsis site in a fragment answer poses a problem for a move-and-delete analysis of ellipsis.

For German, Struckmeier (2016), Ott & Struckmeier (2018) have argued that discourse particles (DiPs) cannot be moved, but can surface as a fragment answer. (7.6) shows that particles like *wohl* and *ja* usually occur in the middle field and cannot be fronted. Note that DiPs can neither move on their own (7.6-b), nor be pied-piped by a DP as in (7.6-c).

(7.6) a. Peter hat wohl/ja einige Leute eingeladen.
Peter has DIP/DIP some people invited
"(Probably/As you know) Peter has invited some people."

b. *Wohl/ja hat Peter __ einige Leute eingeladen.
DIP/DIP has Peter some people invited

c. *[Seine Freunde wohl] hat er __ eingeladen.
his friends DIP has he invited
(Ott & Struckmeier 2018)

Despite their apparent immobility, they can survive clausal ellipsis, e.g., as remnants of sluicing or fragments, (7.7) and (7.8).

(7.7) Peter invited a couple of people.

a. Wen denn?
who.ACC DIP (Ott & Struckmeier 2018: 397)

b. Peter hat jemanden eingeladen und ich frage mich wen
Peter has someone invited and I wonder REFL who.ACC
wohl.
DIP

(7.8) *Who did Peter invite?*

a. Seine Freunde wohl.
his friends DIP

b. Wohl seine Freunde.
DIP his friends (Ott & Struckmeier 2018: 397)

The authors argue that, since DIPs do not form a constituent with a DP, compare ((7.6-c)), the MDA would have to postulate that they must undergo exceptional movement themselves. However, since DIPs do not seem to be able to move, we are met with a paradox. The conclusion suggested by Struckmeier (2016), Ott & Struckmeier (2018) is that if elements that can never be moved can surface as remnants of ellipsis, this suggests that movement cannot be involved in the derivation of elliptical structures.

Broekhuis & Bayer (2020) note that the data that Ott & Struckmeier (2018) use are controversial. Clauses in which DIPs move to the clause-initial position are attested, contrary to what Ott & Struckmeier (2018: fn.7) claim, see (7.9) (see also Bayer & Obenauer 2011, Bayer 2018).

(7.9) a. [Wer denn] soll befehlen?
who.NOM DIP should command
"Who should be in command?"

b. [Warum bloss] ist ein Rauschenberg so teuer?
why DIP is a Rauschenberg so expensive
"Why is a (piece by) Rauschenberg so expensive?"

c. [Von wem schon] kann man das sagen?
of who.DAT DIP can one that say
"Who can you say that about?" (Broekhuis & Bayer 2020)

Since the prefield can be occupied only by exactly one constituent, they conclude that DIPs are contained in their associated DPs, and can be pied-piped in sluices or fragments. To stress this point, it seems that DIPs can never occur *without* an associated DP, as Ott & Struckmeier (2018) note themselves, see (7.10).

(7.10) *How likely is it that Peter invited Bob?*
*Wohl.
DIP
intended: *"It is likely/probably that Peter will invite Bob."*
(Ott & Struckmeier 2018: 396)

In sum, it seems that it is an open empirical question whether discourse particles can serve as an argument against a movement theory of ellipsis (see also Broekhuis & Bayer 2020: 27f. for further criticism of Ott and Struckmeier's account). We will set the problem of immobile elements aside for now. The puzzle of an additional, otherwise unavailable movement that only seems to

occur in ellipsis remains. The following section summarizes how previous proposals have tried to model this movement.

7.2. Previous accounts of exceptional movement

There are different families of approaches to exceptional movement in ellipsis. Many analyses propose that movement in ellipsis happens as a repair operation to avoid a violation of a PF-requirement. These have been implemented in optimality theory (e.g., Heck & Müller 2000a,b, 2003/2007), or in Chomskian phase theory (e.g., Thoms 2010, Weir 2014, 2015). Another approach is set in the Cyclic Linearization framework (e.g., Takahashi 2004, Fox & Pesetsky 2005a,b, Müller 2007, Boone 2014). Other families propose proper syntactic feature-driven movement to the left (e.g., Richards 2001, Park & Kang 2007, Temmerman 2013) or to the right (e.g., Jayaseelan 1990, Abe & Hoshi 1997, Nishigauchi 1998, Lasnik 1999, 2014, Ortega-Santos et al. 2014).

In the following, I will discuss the proposal that assumes a repair operation in Minimalist syntax, the Cyclic Linearization approach, and the feature-driven movement approach based on Richards (2001). I will not address the OT analysis, since this framework does not play a role here, and I will also leave out the rightward-moving analyses. In my opinion, Park & Kang (2007) and Boone (2014: 105–113) a.o. adequately show that this approach both under- and over-generates to an extent that it should be considered refuted.

7.2.1. EM as PF-movement for focus-marking

Weir (2014, 2015) proposes that evacuation movement is focus fronting, building on Boone (2014), Yoshida et al. (2015). This movement lands in a designated focus position in the left periphery, often called Spec,FocP. Constituents

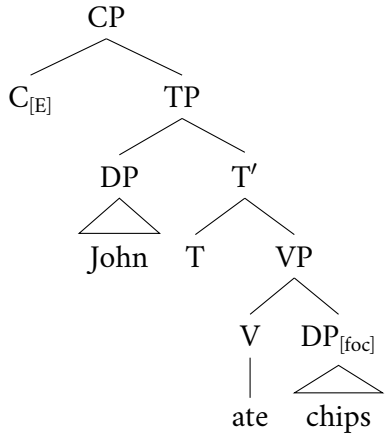
marked with a feature [foc] must receive pitch accent or must otherwise be marked as prosodically prominent, and therefore must not be deleted. Similar focus-movement analyses are proposed in Merchant (2004) and Nakao (2009). In all of these analyses, it is ultimately the requirement of the PF-interface to mark a focused constituent that drives EM, which is translated to syntax with the movement-inducing [foc]-feature.

However, Weir (2014) also explicitly stresses that in his view, EM is not feature-driven movement. He proposes that EM is not regular syntactic movement. Instead, remnants move only at PF to fulfill needs of the PF-interface and stay *in situ* at LF. The idea builds on work by Aoun & Benmamoun (1998) and Sauerland & Elbourne (2002), who propose that PF-movement exists as a parallel to LF-movement. While LF-movement only has an effect on interpretation but not on the form of a string, i.e., there is no overtly perceivable displacement, PF-movement influences only form, but not interpretation. This line of thinking makes a distinction between narrow syntax, and a later stage of syntax (Weir 2014:183). This subdivision is supposed to achieve that LF/PF-movement are still syntactic in the sense that they target syntactically defined constituents, they respect syntactic constraints to movement, PF-movement can trigger pied-piping, etc. By making the distinction in (7.10), Weir argues that EM can show all the (properly syntactic) signs of regular A′ movement, without being regular A′ movement.

A sample derivation involving EM would look like the following: for the fragment answer in (7.11), all narrow-syntax operations derive the structure in (7.12).

(7.11) What did John eat? Chips ~~John ate~~. (Weir 2014:184)

(7.12) *At the end of narrow syntax*

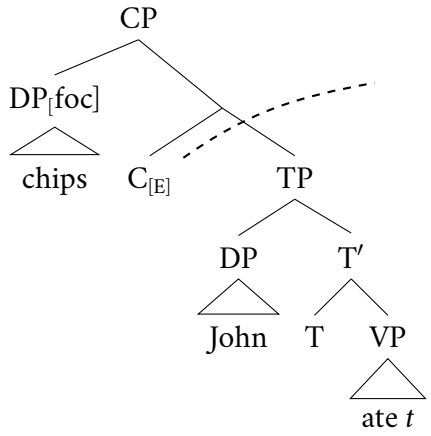


(Weir 2014:184)

The fragment answer *chips* is still *in situ* at the end of narrow syntax. It is marked with a focus feature. The complementizer carries an [E]-feature, licensing deletion of its TP complement.

When the later stage of syntax begins, these two features start to interact and create conflicting instructions to PF: the [E] feature instructs PF not to realize any terminal nodes in the hosting head's TP complement, which will be the ellipsis site. This instruction is at odds with the requirements of the focus feature contained in that TP. [foc] requires the assignment of stress or pitch accent to its phrase. The grammar cannot both delete and stress an XP at the same time. Weir (2014) proposes, following Yoshida et al. (2014), that a way to resolve this conflict is to allow PF to carry out last resort movement: by moving the focus-marked constituent out of the ellipsis site, the prosodic requirements of focus-marking can be fulfilled, (7.13). The fact that this conflict only arises when a constituent is marked for deletion derives that EM is restricted to elliptical contexts: exceptional PF-movement occurs only to repair effects of ellipsis.

(7.13) *PF*



(Weir 2014)

Syntactic features play a role in this approach, but the exceptional movement is not feature-driven. Rather, it is the requirements that the features put on the interfaces that motivate movement. Weir (2014:195) assumes that [foc] in general does not induce movement to the left periphery. He argues that PF-movement is restricted to elliptical contexts because of Economy considerations (Chomsky 1995 et seq.): as a last resort operation, it can only apply if the derivation would crash otherwise. In non-elliptical contexts, there is no conflict that could be resolved by PF-movement, therefore the movement is superfluous. Derivations that include superfluous PF-movement do not violate syntactic constraints *per se*, but are less economical than derivations with fewer movement steps. Thus, economy consideration prevent PF-movement outside of elliptical environments.

The key problem with the PF-movement approach is that it does not take into account that the initial motivation for movement in elliptical constructions also includes LF-effects. The MDA-literature argues that movement is involved in the derivation of ellipses based in part on semantic diagnostics. If exceptional movement is purely dislocation in PF, as Weir argues, then effects

of movement on the LF representation are (i) left unexplained, and (ii) should not be used as evidence for the MDA.

Weir (2014:13f.) brings up the ban on extraction out of noun-noun compounds as evidence for a movement dependency in fragment answers, citing Merchant (2004), see (7.14). The intention is to draw a parallel between regular A′ movement and evacuation movement in ellipsis: if a constituent cannot move regularly, and it also cannot act as a remnant of ellipsis, specifically a fragment answer in (7.14), then movement is involved in the derivation of ellipsis.

(7.14) Did Abby vote for a Green Party candidate?

a. *No, Reform Party ~~she voted for a *t* candidate~~

b. No, a Reform Party candidate ~~she voted for *t*~~

(Merchant 2004:688)

(7.14) exemplifies a violation of the Lexical Integrity Hypothesis (LIH, e.g., Lapointe 1979, Bresnan & Mchombo 1995, Spencer 2005, Booij 2009). It states that syntactic processes cannot access word-internal structures (see Lieber & Scalise 2006 for different formulations and an overview of the literature on the LIH). Consequently, extraction out of a complex head as in (7.14) is not allowed. While there no consensus on the exact reason *why* the LIH should hold, it seems unlikely to assume that it would merely violate a constraint on the PF-branch. Instead, extraction of part of a compound presumably causes problems for semantic composition as well. If extraction out of noun-noun compounds is banned generally because of a violation of LF-constraints, then the EM-as-PF-movement approach would predict that no such violation should occur under exceptional movement, and that (7.14-a) should be grammatical, contrary to fact.

Similarly, Weir (2014) cites a contrast between raising and control infinitives (Chomsky 1981: 62 via Merchant 2004: 696ff.). While a control infinitive

can be fronted (in some English varieties), a raising infinitive cannot, compare (7.15) and (7.16). This pattern persists in fragment answers, see (7.17) and (7.18).

(7.15) *Immobility of raising infinitivals*

a. (People don't often simply stop writing but) *[to procrastinate]$_1$, people do tend t_1.

b. (Mary seemed to be well but) *[to be sick]$_1$, John seemed t_1.

(7.16) *Mobility of control infinitivals*

a. (Mary wants to move to Europe, but) ?[to get a job in Europe]$_1$, she doesn't want t_1.

b. (It's not retiring early that Mary wants,) ?it's [to get a job in Europe]$_1$ that Mary wants t_1.

(7.17) *Impossibility of raising infinitival fragment answers*

a. How do people tend to behave? – *To procrastinate.

b. How did John seem? – *To be sick.

(7.18) *Possibility of control infinitival fragment answers*

a. What does she really want? – To get a job in Europe.

Again, the approach to evacuation movement as PF-movement explains the ungrammaticality of (7.17) with a violation on the PF-branch. It is unclear to me how the contrast between control and raising verbs should be explained by the violation of a PF-constraint. The same point can be made for the arguments for movement in gapping in German from section 4.3: it cannot be only a PF-violation that accounts for certain island effects, freezing, and the XP-vs.-X contrast, etc. Rather, these and other arguments in Weir (2014) for the existence of a movement dependency in fragment answers make reference not only to phonologic-prosodic but also to semantic and narrow-syntactic

constraints on movement. That is precisely what makes them so compelling: exceptional movement really looks like regular A′ movement with respect to many standard diagnostics. Weir pays so much attention to the empirical problems of the MDA[66] that his analysis cannot account for the initial data anymore.

7.2.2. EM as covert movement triggered by weak features

This approach builds on the notion of feature strength and its correlation with the overtness of movement. Chomsky (1995) proposes that syntactic features come in two flavors, weak and strong. Strong features must be checked before Spell-out and therefore trigger phonologically detectable displacement. Checking of weak features can be procrastinated until after Spell-out. Checking weak features only after the structure has been spelled out has the effect of covert movement. Richards (1997, 2001) proposes that evacuation movement is triggered by weak features (see also e.g., Gärtner 2002a, Nakao 2009, Temmerman 2013, Abels & Dayal 2017 for similar implementations). Importantly, Chomsky (1995) notes that the early checking of weak features prior to Spell-out is in principle possible, i.e., weak features *can* be treated like strong features. Richards (1997, 2001) builds on this and collects case studies where he argues weak features are exceptionally checked before Spell-out. He proposes that the correlation of feature strength and (c)overtness of movement is due to a constraint on the pronunciation of the relevant elements, given in (7.19). Adopting the Copy Theory of movement, he assumes that movement involves the creation of copies of the moved element in all intermediate and

[66] In Weir (2014), general focus movement is ruled out by economy. The data concerning immobile elements are compatible with Weir's analysis. Weir (2014) argues that in general, movement of such elements incurs a violation at LF. They can be fragment answers, however, since exceptional movement only happens on the PF-branch of syntax, while the LF representation is identical to its non-elliptical counterpart. The offending violation that normally rules out movement of NPIs, bare quantifiers and such thus does not occur.

the final landing site(s). The maximal set of copies is called a chain. Chains are subject to the wellformedness condition in (7.19).

(7.19) *PF-wellformedness constraints for chains*
(Richards 1997 via Temmerman 2013)

a. PF must receive unambiguous information about which part of a chain to pronounce.
b. A strong feature instructs PF to pronounce the copy in a chain with which it is in a feature-checking relation.

In the general case, (7.19) rules out the checking of weak features before Spell-out, because weak features do not give PF unambiguous information about which copy to pronounce, see (7.20). If weak features were checked before Spell-out, PF would receive a string with two copies and no instruction to favor one over the other. There is an implicit assumption that PF must choose one copy and cannot pronounce both: XP cannot both precede and follow Y in (7.20). Thus, given (7.19-a), the derivation crashes. In the general case, weak feature checking has to be delayed until after Spell-out.

(7.20) *[$XP_{[F]}$ $Y_{[weak-F]}$ [... $XP_{[F]}$ ...]] (Richards 2001:105)

In ellipsis, however, checking of weak features is made possible prior to Spell-out. The early checking of weak features creates ambiguous linearization statements similar to (7.20). However, ellipsis can make these statements unambiguous by deleting the lower copy, as in (7.21). The string that is outside the ellipsis site only contains the higher copy. Thus the ambiguity which is the reason for the ungrammaticality of (7.20) can be repaired by ellipsis. Richards (1997, 2001) concludes that ellipsis makes certain movements possible that are ruled out in the absence of ellipsis, i.e., exceptional movements.

(7.21) [$XP_{[F]}$ $Y_{[weak-F]}$ ~~[... $XP_{[F]}$ ...]~~]

The advantage of this approach is that exceptional movement is modeled as proper syntactic movement which affects both the PF- and the LF-branch, and can therefore account for contrasts like (7.17) vs. (7.18) above.

However, this type of account of exceptional movement, which proposes that this movement always happens (covertly), but is only made visible by ellipsis, faces other empirical problems. For one, as shown by LaCara (2017), it makes the prediction that exceptional movement should be possible in VP-ellipsis, contrary to fact. Take the following examples as a starting point: while languages like English do not allow multiple *wh*-movement in general, (7.22), they do allow multiple *wh*-remnants in ellipsis, as in the sluicing example in (7.23).

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

(7.23) Mary donated a different book to each charity, but I don't know [[which book] [to which charity] __] (LaCara 2017:208)

Under a covert-movement account, the second *wh*-remnant moves to the left periphery covertly, and has to be spelled out exceptionally if the tail of the movement chain is inside an ellipsis site. As for VP-ellipsis sites, they allow simple *wh*-movement out of them, see (7.24) (Schuyler 2001).

(7.24) MARY should buy that puppy, but I don't know [which one]$_i$ BILL should ~~[$_{VP}$ buy t$_i$]~~. (LaCara 2017:211)

However, multiple *wh*-movement out of an elided VP is unattested, (7.25).

(7.25) *Each student must buy something, but I don't know who what SHOULD. (LaCara 2017:211)

The unacceptability of (7.25) is unaccounted for in a covert-movement approach to EM. (7.25) contains a covert *wh*-movement dependency with a tail inside an ellipsis site. Ellipsis of the tail should trigger the exceptional pronunciation of the higher copy at the left periphery. In this case, LaCara (2017) argues, the covert movement analysis of EM over-generates.

As a second example, let us look at focus phrases in German. We have seen that German allows focused phrases to stay *in situ*. The following data show that an *in situ* focus interpretation does not involve (covert) movement in German (consistent with e.g., May 1985, Pesetsky 1987). Therefore, the basis of the covert-movement account of EM, i.e., the general availability of covert dependencies that can be made overt by ellipsis, is missing in German. The diagnostics are adapted from Amaechi & Georgi (2020). Amaechi & Georgi (2020) show for Igbo that both *ex situ* and *in situ* focus involve a syntactic movement dependency. If a covert-movement analysis of exceptional movement is on the right track, we should be able to detect covert movement in German. The first test concerns islands. The focus marked object is contained in a complex NP or an adjunct island. If focus interpretation involved movement, such sentences should be ungrammatical, since the focus-operator cannot move across an island boundary. However, we see that the sentences are perfectly acceptable. The focus interpretation is forced by a *wh*-question in (7.26). Answers to *wh*-questions receive narrow focus. An alternative context could produce corrective focus, such as (7.27).

(7.26) *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.FOC bought has

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

(7.27) *Context: Ada met someone who bought flowers, right?*

a. Nein, Ada hat eine Frau getroffen die RÜBEN
no Ada has a woman met who turnips.FOC
gekauft hat.
bought has

b. Nein, Ada hat eine Frau getroffen bevor sie RÜBEN
no Ada has a woman met before she turnips.FOC
gekauft hat.
bought has
"Ada met a woman who/before she bought turnips."

The second diagnostic are parasitic gaps. Parasitic gaps can only be licensed by proper A′-movement (e.g., Engdahl 1983, Chomsky 1986). In Igbo, *in-situ wh*-phrases can license parasitic gaps. In German, parasitic gaps can only be licensed by overt A′-movement, (7.28).

(7.28) a. Context: Was hat Ada gekauft ohne *pg* zu inspizieren?
context what has Ada bought without to inspect
"What did Ada by without inspecting?"

b. *Ada hat die RÜBEN gekauft ohne *pg* zu inspizieren.
Ada has the turnips.FOC bought without to inspect

c. Die RÜBEN hat Ada gekauft ohne *pg* zu inspizieren.
the turnips.FOC has Ada bought without to inspect

Lastly, Amaechi & Georgi (2020) show that the occurrence of negation or a focus-sensitive particle can induce ungrammaticality in *in situ wh*-questions, known as a Beck intervention effect (Beck 1996, 2006, Kobele & Torrence 2006, Kotek 2017a,b). If a particle or negation intervenes between the *wh*-

phrase and its potential landing site, ungrammaticality arises. This is illustrated in (7.29). The focus-particle *man* co-occurs with a *wh*-phrase *in situ*, which leads to ungrammaticality. This can be prevented by moving the *wh*-element across the intervener. In (7.29-b), the *wh*-phrase moved to a position in which it is no longer c-commanded by the particle, and the intervention effect vanishes.

(7.29) a. *Minsu-man nuku-lûl po-ss-ni?
Minsu-only who-ACC see-PST-Q

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

In Igbo, *in situ wh*-phrases behave as if they have undergone movement. Even though a negation c-commands an *in situ wh*-phrase in (7.30), the sentence is grammatical, i.e., Igbo does not show Beck intervention effects. The lack of the effect suggests that *in situ wh*/focus elements move covertly.

(7.30) Àdá á-gụ̄-ghị́ gị́nị̄?
Ada NMLZ-read-NEG what
"What did Ada not read?" (*Igbo*, Amaechi & Georgi 2020:311)

German exhibits Beck effects with alternative questions, see (7.31). The focus particle *nur* blocks an alternative question interpretation when it c-commands the disjoint phrase (a yes/no reading is still available). Similarly, (7.32) 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.

(7.31) 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)

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

This all 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. I conclude that accounts of EM based on covert movement cannot be applied to German.

7.2.3. Cyclic linearization approaches to EM

This approach relies on the theory of movement based on Cyclic linearization (Fox & Pesetsky 2005a,b, see also *Theoretical Linguistics* 31 (2005) and Müller 2000, Williams 2003, Müller 2007, 2014). It is a theory that derives conditions on movement from restrictions of PF-shape. Fox and Pesetsky propose that Spell-out applies to entire phases including edges, not just the complement of a phase head as in the Chomskian tradition (Chomsky 2000, 2001 *et seq*.). This means that spelled-out phrases cannot be unavailable for syntactic operations, and Spell-out does not flatten structure, since elements in the edge that move on to a higher phase are also spelled out. Thus, the Chomskian motivation for successive-cyclic movement is not licit anymore. Movement must occur successive-cyclically, but not because the moved elements have to stay accessible for syntactic operations by escaping the Spell-out domain. Instead, Fox and Pesetsky propose that successive-cyclic movement is forced because Spell-out must be information-preserving, a condition they call Order Preservation, (7.33).

(7.33) *Order Preservation* (Fox & Pesetsky 2005a: 6)
Information about linearization, once established at the end of a given Spell-Out domain, is never deleted in the course of a derivation.

They consider vP/VP, CP and DP to be Spell-out domains. Thus, the linear order of elements that is established in vP must be preserved all the way until CP is complete. If the ordering statements of vP and CP mismatch, the derivation crashes at PF because the structure cannot be linearized. In order to create structures that exhibit coherent ordering statements, Fox and Pesetsky argue that movement via the edge is unavoidable. What drives successive-cyclic movement via edges is the need to keep ordering statements consistent throughout the derivation. If an element moves to the phase edge, it will precede all material inside that phase. This is needed since, in the final representation, the moving element precedes the phase that it exited. Compare the schema in (7.34).

(7.34) *Successive-cyclic movement through phase edges*

a. $[_{\text{YP}}\ \alpha\ [_{\text{PhaseP}}\ \langle\alpha\rangle\ \beta\ [_{\text{XP}}\ \langle\alpha\rangle\ ]]]$ $[_{\text{YP}}\ \alpha < \beta], [_{\text{PhaseP}}\ \alpha < \beta]$

b. $*[_{\text{YP}}\ \alpha\ [_{\text{PhaseP}}\ \beta\ [_{\text{XP}}\ \langle\alpha\rangle\ ]]]$ $[_{\text{YP}}\ \alpha < \beta], [_{\text{PhaseP}}\ \beta < \alpha]$

Under a cyclic linearization view, exceptional movement in ellipses is countercyclic, since it is only triggered once a higher phrase is elided, thereby violating the SCC. The moved element must move from a non-edge position. This results in contradictory linearization statements which would normally lead to a crash. However, ellipsis provides a unique possibility to resolve contradictory linearization: the ordering statements of elements contained in the ellipsis site can be deleted (Fox & Pesetsky 2005a, see also Takahashi 2004

for an application to pseudogapping, Boone 2014 for gapping and fragment answers). Thus, there is nothing to compare the final position of the exceptionally moved remnant to, no contradiction arises at PF and the structure is rescued.

Let us consider an example for illustration. (7.35) shows the derivation of VP-ellipsis proposed by Takahashi (2004).

(7.35) John has traveled to Spain and Bill has $[_{PP}$ to India $]$ ~~$[_{VP}$ traveled t_{PP} $]$~~

a. *completion of VP*
$[_{VP}$ traveled to India$]$ *traveled < to India*

b. *exceptional movement of* $[_{PP}$ *to India*$]$
$[_{CP}$ Bill has $[_{PP}$ to India$][_{VP}$ traveled t_{PP} $]]$
↯*to India < traveled, traveled < to India*

c. *VP-ellipsis and deletion of ordering statement*
$[_{CP}$ Bill has $[_{PP}$ to India$]$ ~~$[_{VP}$ traveled t_{PP} $]$~~$]$
✓*to India < traveled,* ~~*traveled < to India*~~

This "Salvation by Deletion" (Fox & Pesetsky 2005a: 14) is a successful implementation of repair by ellipsis in the cyclic linearization approach to movement. In the next section I want to offer an account of exceptional movement that fits in the Chomskian phase-based cyclic spell-out framework that the analysis of determiner sharing was developed in in the previous chapter.

7.3. A Feature Co-occurrence Restriction for exceptional movement

It is not clear how exceptional movement can be implemented in the framework of the present analysis. As we have seen, exceptional movement is often assumed not to be feature-driven, but instead happens as a *last resort* or *re-*

pair in order to satisfy an extra-syntactic requirement (e.g., Boone 2014, Weir 2014). Classic examples of repair phenomena include *do*-support in English (e.g., Grimshaw 1997), island repair by ellipsis and island repair by clitic doubling (e.g., Ross 1969, Chomsky 1972, Fox & Lasnik 2003, Boeckx & Lasnik 2006, Den Dikken 2013, Saab & Zdrojewski 2012, but the body of literature on repair and last resort operations is much larger than that (e.g., Koopman & Sportiche 1986, Shlonsky 1992, Corver 1997, Richards 1997, Bošković & Takahashi 1998, Harley & Noyer 1998, Schütze 2002, Heck & Müller 2000b, 2003/2007, Benincà & Poletto 2004, Schmid 2005, Franks & Lavine 2006, Řezáč 2008, 2011, Béjar & Řezáč 2009, Bjorkman 2011, Kalin 2012, 2014, Coon et al. 2014, Preminger 2014, Sichel 2014, Richards 2016, Pesetsky 2016, Hein 2017, 2018, Martinović 2017, see Collins (2001) for an overview).

While intuitively compelling, many analyses remain implicit on the details of the repair process. There is no obvious way to implement the intuition of repairs of this kind in a Minimalist framework. As Grimshaw (2013: 270) points out, last-resort-analyses "*generally appeal to the last resort idea by word and not by deed*", "*the words 'last resort' are employed but the concept plays no role in the analysis*." True repair is only available in frameworks which make use of violable constraints (such as Grimshaw 1997, Heck & Müller 2000b,a, 2003/2007, Heck & Müller 2013, Schmid 2005, Stiebels 2006, Müller 2015). In these, the process that instantiates a repair is blocked by a certain constraint C_1 in most context. In most contexts, the process never applies. However, the process can apply if it serves to satisfy a higher ranked constraint C_2, even if it violates C_1.

Empirically, we have seen in chapter 4 that movement in ellipsis has syntactic and semantic effects, and thus must be proper syntactic movement and cannot only apply at the PF-interface. We have also seen that German does not exhibit generalized (covert) focus fronting. A successful account of exceptional movement must model it in a way that is properly syntactic but restrict its application to elliptical contexts without referring to intuitions.

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, Müller 2010: 42, Müller 2011: 3). Müller's updated version of the EFC is given in (7.36).[67]

(7.36) *Edge Feature Condition* (Müller's 2011 version)
The head X of phase XP may be assigned an edge feature before the phase XP is otherwise complete, but only if there is no other way to produce a balanced phase.

To constrain edge features to ellipsis contexts, we can postulate a Feature Co-occurrence Restriction, a principle borrowed from HPSG (Gazdar et al. 1985).[68] 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 (7.37).

(7.37) *Feature Co-Occurrence Restriction for exceptional movement*
The head Force^0 of ForceP may be assigned an additional edge feature if and only if it already contains the [E]-feature bundle [*u*&,**u*–SP,+SP].

[67] The original EFC is given in (i).

(i) *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.

Müller's (2010, 2011) version has the advantage of respecting the Inclusiveness Condition by assigning edge features before the syntactic computation begins, and does not face the look-ahead problems of the original EFC.

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

(7.37) ensures that multiple instances of movement to the prefield only occur when clausal ellipsis happens. (I assume that one EF, which triggers topicalization, is always present on Force^0, following Fanselow & Lenertová (2011).) I assume that Force heads with many different feature combinations exist. Some of them have a feature composition such that they derive interrogative clauses, others have one for non-finite clauses etc. For our purposes, I have assumed a Force head that consisted of an EF and an [E]-feature bundle, (7.38-a), to which then the rule in (7.37) could apply, (7.38-b), which results in a head that triggers clausal ellipsis with two instead of one instances of movement into its specifier, (7.38-c).[69]

[69]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. I propose that for every contrastive phrase in the ellipsis site there exists a corresponding attracting [EF] on Force^0. Thus, if we have three remnants, Force^0 must contain three instances of [EF]. Working out how exactly it can be ensured that the number of contrasting phrases match the number of attracting features on Force^0 is beyond the scope of this work. One starting point for a technical implementation could be Phase Balance (Heck & Müller 2000b, 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 monodirectional: 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 Force^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.

(7.38) *Feature composition of Force*^{0}

a. {[EF],[*u*&,**u*−SP,+SP],...}$_{\text{Force}}$

b. {[EF],[*u*&,**u*−SP,+SP],...}$_{\text{Force}}$ ⇐ [EF]

c. {[EF],[EF],[*u*&,**u*−SP,+SP],...}$_{\text{Force}}$

It is clear that a feature co-occurrence condition like (7.37) 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.[70] 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 MDA is based on the observation that remnants exhibit symptoms of movement in the regular case (as in ch. 4), and it generalizes this movement to other cases in which it is not independently motivated. This is the biggest criticism of the MDA: 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

[70]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.

processes can be found in many areas of language, as the extensive list of references above suggests. 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 labeling purposes (Blümel 2012, Ott 2011, 2015). Still, stipulations in the implementation of EM are a valid point of criticism. However, as far as I know, the adversaries of the MDA fail to provide an alternative account that does not rely on some form of stipulation.[71]

A further criticism of exceptional movement by Struckmeier (2016), Ott & Struckmeier (2018) concerns the architecture of the system: they criticize that the evacuation movement that is used to distinguish remnants from deleted phrases is redundant, since the remnants have to be distinguished from other material as a prerequisite for movement, e.g., by focus features. This criticism applies only to such MDA accounts that rely on focus movement (e.g., Boone 2014, Ortega-Santos et al. 2014, Weir 2014, Yoshida et al. 2015). In the present analysis of determiner sharing, focus interpretation is not a prerequisite of, but a result of movement.

7.4. Chapter summary

This chapter investigated one of the crucial features of a move-and-delete approach to ellipsis, the evacuation movement that seems to apply only in elliptical contexts. I first summarized empirical problems for the MDA, followed by a review of previous analyses of exceptional movement. I proposed an approach to EM that is based on a constraint of feature-bundle construction. I argue that such a constraint can account for all the instances in which exceptional movement occurs without over-generalizing. This concludes the

[71] 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.

analytical part of this thesis. The next chapter offers some concluding remarks.

8. Conclusion

In this dissertation, I have proposed an analysis of determiner sharing in German. I argue that determiner sharing arises as the result of applying of two processes to the same structure: *split topicalization* separates the determiner from its NP, and (clausal) *ellipsis*, commonly in the form of gapping, deletes the constituent that contains the determiner. I show how the present analysis of this type of non-constituent ellipsis derives the empirical properties and restrictions of determiner sharing. The success of this account serves as an argument for movement-based approaches to ellipsis, thereby contributing to the ongoing debate in the research of ellipsis (see e.g., contributions in Güneş & Lipták 2022 vs. e.g., Griffiths 2019, Broekhuis & Bayer 2020).

8.1. Main results

8.1.1. Empirical contribution

Empirically, this thesis provides the first thorough investigation and formal description of determiner sharing in German. In this way, it aims to fill a gap in the cross-linguistic ellipsis literature. The results of three experimental investigations suggest that determiner sharing is a possible output of the grammar of a significant amount of German speakers. Experiment 2 solidified the observation by Ackema & Szendrői (2002) that determiner sharing is possible in embedded clauses without verbal gapping. If there is gapping in an embedded clause, the direction of gapping has been shown to have no

influence on the acceptability of determiner sharing: sharing is possible with both forward and backward gapping. Backward gapping is one of two new environments in which determiner sharing has been found to be possible. The second new environment is stripping: determiner sharing is accepted not only in gapping, but also in stripping contexts. This result is the basis for a revision of the generalization made in the previous literature that determiner sharing is parasitic specifically on gapping. In addition to stripping, it seems that sharing is also possible with clausal ellipsis in what Abels (2019) calls the *swamp* construction. One of the contributions of this thesis is the detection of more contexts in which determiner sharing is possible. In the analysis, these contexts are unified: they all involve clausal ellipsis. In this way, this thesis contributes to making the discussion of ellipsis phenomena significantly less construction-specific.

As for the shared elements, the experiments found that sharing of the tested quantifiers *jeder* 'every' and *irgendein* 'some' was equally accepted by speakers. This suggests that the difference between the types of quantifiers that can be shared and that cannot be shared does not coincide with a difference of existential vs. universal quantification. This is only a preliminary result. More quantifiers should be tested to strengthen this conclusion.

Based on the results of these studies and on previous treatments of determiner sharing, I propose the empirical generalizations 6.52, repeated as (8.1).

(8.1) *Determiner sharing generalizations*

a. The ellipsis generalization: determiner sharing is only possible in ellipsis.

b. The complementizer generalization: in embedded clauses, determiner sharing does not require deletion of the verb, but instead of the complementizer.

c. The first-element generalization: the element with the omitted determiner must be the first constituent of the conjunct.

d. The no-constituents generalization: if more than a single determiner is shared, the deleted elements need not form a constituent.
e. The no-low-elements generalization: elements that occupy a low position in the nominal spine cannot be shared.

(8.1-a–c) are the central observations from the previous literature. (8.1-d) and (8.1-e) are novel generalizations made on the basis of experimental investigations in German.

8.1.2. Movement in gapping

I argue that gapping obligatorily involves a movement dependency (at least in German). As evidence, I cite tests from the literature and apply them to gapping, e.g., tests for island sensitivity and freezing effects, an argument from the shape of the remnants, tests for P-stranding, moving particles, and the types of embedding predicates. In addition to these, I propose a new diagnostic: certain case markers on nominals indicate that the bare nouns in determiner sharing structures were once in a sufficiently local relation with a case marked determiner such that the nouns are licensed to carry a case marker. All of these seven diagnostics suggest that the remnants of gapping are parts of a movement dependency. I take this to indicate that movement is an integral part of the derivation of ellipsis generally, and as evidence against *in-situ* analyses of ellipsis.

I follow previous proposals in analyzing German gapping as clausal ellipsis. Evidence for the large size of conjuncts in gapping comes from the relative word order of particles, the impossibility of cross-conjunct binding, the restricted scope of negation, and object fronting. I argue that gapping should be analyzed as deletion of a lower clausal projection, which I call FinP. Viewing gapping as clausal ellipsis allows us to unify it with other constructions like

stripping and sluicing. This makes the theory of determiner sharing significantly less complex: I show that determiner sharing is possible in gapping, stripping, and a clausal ellipsis that is similar to sluicing (the *swamp* construction). Unifying all of these context as clausal ellipsis allows us to apply the same analysis to all of these seemingly distinct ellipsis phenomena.

8.1.3. Determiner sharing as a conspiracy

I propose a novel analysis of determiner sharing in German that can account for the generalizations above. I propose that determiner sharing is the accidental outcome of the joint application of two operations: split topicalization and (clausal) ellipsis. Split topicalization can separate a noun from other material in its DP and move it to the prefield. All other material, such as determiners and quantifiers, stays in the middle field. If the middle field happens to be an ellipsis site, all material inside it will be deleted. The result is a structure with a bare nominal in the left periphery, which is descriptively referred to as determiner sharing. In short, split topicalization and ellipsis can conspire to create determiner sharing.

This approach to sharing can account for the generalizations in the following way. The parasitism of determiner sharing on ellipsis (8.1-a) is explained by the lack of a deletion operation that targets determiners specifically. Instead, the ellipsis involved in sharing is standard clausal ellipsis that can be observed in gapping, stripping, sluicing, fragments etc. It targets a larger constituent that may contain material that is left behind by split topicalization. The complementizer generalization (8.1-b) falls out from the analysis of gapping as clausal ellipsis. Gapping is not the deletion of a (finite) verb, but of a clausal projection that may contain the verb or complementizer. The first-element requirement (8.1-c) is met by the interaction of the *Foc-Top filter and the information-structural properties of split topicalization: the fronted noun in split topicalization has independent topic properties, and must be in-

terpreted in the designated topic position, i.e., it must be the highest of multiple specifiers in ForceP. Only derivations in which this is achieved can converge. If determiner sharing comes about by split topicalization, the noun with the missing determiner will always be in the initial position in the conjunct. Similarly, split topicalization predicts that the deleted elements need not form a constituent (8.1-d): only the noun is fronted, while all other material contained in the DP, such as determiners, relative clauses, or adjectival modifiers, is left in middle field and subsequently elided. This material does not have to form a constituent, since no syntactic process applies to it in particular. Ellipsis targets the constituent that contains all of that material. I tentatively proposed the no-low-elements generalization (8.1-e). Deriving it requires a more thorough investigation of the lexical variation of determiner sharing and an explicit analysis of split topicalizations. I submit it here as a hypothesis to be pursued by future research.

Finally, I propose a different account of exceptional movement based on a feature co-occurrence restriction. The advantage of this rule-based approach to exceptional movement is that it does not rely on implicit intuitions. It is an explicit mechanism to derive and properly restrict exceptional movement, albeit a stipulative one.

8.2. Outlook and suggestions for further research

8.2.1. Cross-linguistic application of the account

This thesis started with a review of the literature on sharing in English and Spanish. While German shares most empirical generalizations with these languages, it is clear that the analysis proposed here cannot be applied to English and Spanish. These languages lack a movement type like split topicalization.

Furthermore, the clausal size of gapping conjuncts is not motivated (but see e.g., Frazier 2015, Potter et al. 2017). The analysis of sharing argued for in German cannot be trivially transferred to other languages in which sharing has been described. I do not see this as a weakness of this proposal. Rather, it suggests that there are many combinations of processes that can derive similar structures on the surface. German seems to lack ellipsis on the vP/VP level (see e.g., Fanselow 1987: 87–91), whereas English and Spanish do exhibit this type of ellipsis. Therefore it may be expected that in VPE-languages, there are other processes available that can derive a structure that is similar to the one discussed for German, such as ellipsis low in the structure combined with across-the-board movement (as in Johnson 2000a, Lin 2002). The challenge for such analyses then lies in the adequate restriction of determiner sharing to gapping/stripping contexts, excluding VPE (Lin 2002), although further empirical research is welcome.

Further typological research could aid in the testing of existing analyses. I have argued that German, English and Spanish show a superficially similar phenomenon that is derived by different processes. With more case studies and the discovery of (more) cross-linguistically robust generalizations, we can straightforwardly test whether the similarity is truly accidental, or whether there is evidence that suggests that all instances of determiner sharing should receive the same analysis, and that a split-topicalization-based approach might not be on the right track.

8.2.2. Types of shared elements

One of the main question raised in this thesis concerns the natural class of elements that can occur in determiner sharing. Recall that in German, quantifiers like *jeder* "every" and *alle* "all" tended to be accepted by speakers, while e.g., articles and numerals were not. While I have proposed the tentative hypothesis for future research in sections 3.2.5 and 6.4.5 that such elements are

in some sense too low in the nominal spine to be split off in split topicalization, this cannot be true for all elements that resists sharing. As a basis for an account of the lexical variation, future research could use experimental investigations to systematically investigate which elements can be shared and which cannot. The results of such a study can be used to test the analysis I have proposed here: the present analysis predicts that if an element can be shared, it should also be able to occur as REM in split topicalizations. Furthermore, the present analysis raises a question concerning an asymmetry discussed in section 5.2: if an element can be in REM, but cannot be shared (such as numerals), is there an additional constraint that blocks sharing in this case, and what could it be?

Typologically, future research might explore if there is a trend in the types of elements that can be shared cross-linguistically, or if each language that exhibits determiner sharing behaves idiosyncratically, and what that might tell us about an adequate analysis of the phenomenon. Similarly, it may be interesting to investigate whether the cross-linguistic differences between shared elements (e.g., possessive pronouns can be shared in English but not in German) can be accounted for on the basis of different processes that underlie sharing in each language.

8.2.3. Theoretical implications

The analysis proposed in this thesis raises questions about the nature of processes that can apply in the lexicon and in the numeration. One open question concerns the modeling of repair operations in Minimalism. If one adopts a system without violable constraints, the intuitive justification of a last resort process is lost. Instead, such processes must be formalized as being triggered only in a very specific context. As Griffiths (2019: 4) notes, processes that are modeled in this way are at risk of being untestable. The formalization of re-

pairs in Minimalism remains an extremely interesting open issue for future research.

The solution I chose in section 7.3 is an inviolable constraint on the combinatorial possibilities of features in the lexicon. While this can accurately derive the observations without over-generalizing, it is of course highly stipulative. As far as I know, the questions of if, how, and where (non-inherent) features can combine to form complexes, and what principles regulate and restrict this feature-complex formation are under-researched and in need of further investigation (see e.g., Adger 2010, Boeckx 2014 for pertinent discussion). Advances in this domain would also benefit the modeling of optional processes such as ellipsis.

Additional theoretical questions that this thesis has touched upon regard the adequate restriction of the distribution of ellipsis. The explanatory adequacy of ellipsis theories is subject of a long and ongoing debate. As mentioned in section 6.1.2, ellipsis can only occur in the complement of (certain) functional heads, yet no approach to date has been able to account for this distribution without stipulations, as far as I know. It remains an open question. Lastly, there is yet no consensus on an identity condition for ellipsis, and specifically, how it can be modeled to fit a local-derivational framework. The move-and-delete approach (MDA) to ellipsis that I argue for here would require that the condition is flexible enough to allow antecedent and ellipsis site to mismatch syntactically in the presence of movement dependencies: the ellipsis site exhibits movement, while there is no movement in the antecedent. If the MDA is on the right track, the identity condition must allow this type of difference between antecedent and ellipsis site. An investigation of identity requirements could be a fruitful area of further research.

8.2.4. Further issues

Further issues that have been left open in this thesis relate to (i) the interaction between determiner sharing and disjunctions, as described briefly in section 2.1.4; (ii) the interaction between sharing and the scope of negation and other scope taking elements, which was mentioned towards the end of section 2.2.1.1; (iii) the differences between subgapping and gapping, especially with regard to (non-)restructuring infinitives (see section 4.4); (iv) an empirical question whether the determiner can be missing in an object when a subject precedes it (fn. 53); and finally (v) the analysis of sharing in stripping with different types of polarity particles.

A. Appendix

A.1. Experiment 1

Item 1

(A.1) *Kontext: Ein begnadeter Bergsportler und ein ausgewiesener Kletterexperte liefern sich einen Wettkampf. Sie erklettern viele größere und kleinere Kletterfelsen, sogenannte Boulder. Stefan hat den Wettkampf leider verpasst und erkundigt sich bei seinen Freunden, wer welche Felsen und Boulder erklettert hat. Seine Freunde erinnern sich aber nicht mehr ganz genau und sagen ihm nur:*
Irgendeinen Boulder hat der Bergsportler erklommen und Felsen der Kletterexperte.

(A.2) *Kontext: Ein begnadeter Bergsportler und ein ausgewiesener Kletterexperte liefern sich einen Wettkampf. Sie erklettern alle größeren und kleineren Kletterfelsen, sogenannte Boulder.*
Jeden Boulder hat der Bergsportler erklommen und Felsen der Kletterexperte.

(A.3) *Kontext: Beim Kletterwettkampf konzentrieren sich die Bergsportler auf kleinere Felsen, sogenannte Boulder. Alle Kletterexperten erklettern die richtig hohen Felsen.*
Ich hab gehört, dass jeder Bergsportler einen Boulder und Kletterexperte einen Felsen erklommen hat.

(A.4) *Kontext: Ein begnadeter Bergsportler und ein ausgewiesener Kletterexperte liefern sich einen Wettkampf. Sie erklettern viele größere und kleinere Kletterfelsen, sogenannte Boulder. Stefan hat den Wettkampf leider verpasst und erkundigt sich bei einem Freund, wer welche Felsen und Boulder erklettert hat. Der Freund erinnert sich aber nicht mehr ganz genau*

und sagt ihm nur:
Ich glaube, dass irgendein Bergsportler einen Boulder und Kletterexperte einen Felsen erklommen hat.

Item 2

(A.5) *Kontext:Meine Geschwister streicheln gern die Hunde im Park. Meine Schwester mag besonders die kleinen Hunde, wie Chihuahuas oder Möpse, mein Bruder mag eher Jagdhunde.*
Irgendeinen Chihuahua hat meine Schwester gestreichelt und Jagdhund mein Bruder.

(A.6) *Kontext: Meine Geschwister streicheln gern die Hunde im Park. Meine Schwester mag besonders die kleinen Hunde, wie Chihuahuas oder Möpse, mein Bruder mag eher Jagdhunde.*
Jeden Chihuahua hat meine Schwester gestreichelt und Jagdhund mein Bruder.

(A.7) *Kontext: Meine kleinen Geschwister spielen und toben gerne mit den Hunden im Park. Meine Schwester mag besonders kleine Hunde und mein Bruder mag Jagdhunde.*
Meine Mutter hat erzählt, dass jeder Chihuahua meine Schwester und Jagdhund meinen Bruder angesprungen hat.

(A.8) *Kontext: Meine kleinen Geschwister spielen und toben gerne mit den Hunden, die sie im Park sehen.*
Meine Mutter hat erzählt, dass irgendein Chihuahua meine Schwester und Jagdhund meinen Bruder angesprungen hat.

Item 3

(A.9) *Kontext: Zum Schulfest führt die 9. Klasse Musikstücke auf, die sich das Publikum wünscht. Besonders die Songs der Beatles und der Rolling Stones wurden gewünscht.*
Irgendeinen Beatlessong wollte der Schulleiter hören und Stonessong der Elternvertreter.

(A.10) *Kontext: Zum Schulfest führt die 9. Klasse Musikstücke auf, die sich das Publikum wünscht. Besonders die Songs der Beatles und der Rolling Stones wurden gewünscht.*
Jeden Beatlessong wollte der Schulleiter hören und Stonessong der Elternvertreter.

(A.11) *Kontext: Zum Schulfest führt die 9. Klasse Musikstücke auf, die sich das Publikum wünscht. Besonders die Songs der Beatles und der Rolling Stones wurden gewünscht.*
Es ist so, dass jeder Lehrer einen Beatlessong und Elternvertreter einen Stonessong hören wollte.

(A.12) *Kontext: Zum Schulfest führt die 9. Klasse Musikstücke auf, die sich das Publikum wünscht. Besonders die Songs der Beatles und der Rolling Stones wurden gewünscht.*
Es ist so, dass irgendein Lehrer einen Beatlessong und Elternvertreter einen Stonessong hören wollte.

Item 4

(A.13) *Kontext: In der Turnhalle geht aus unerklärlichen Gründen manchmal das Licht aus. Der Hausmeister und ein Elektriker versuchen gemeinsam herauszufinden, ob das Problem ein Schaltkreis oder ein Lichtschalter ist.*
Irgendeinen Schaltkreis hat der Elektriker getestet und Lichtschalter der Hausmeister.

(A.14) *Kontext: In der Turnhalle geht aus unerklärlichen Gründen manchmal das Licht aus. Der Hausmeister und ein Elektriker versuchen gemeinsam herauszufinden, ob das Problem die Schaltkreise oder die Lichtschalter sind.*
Jeden Schaltkreis hat der Elektriker getestet und Lichtschalter der Hausmeister.

(A.15) *Kontext: In der Turnhalle geht aus unerklärlichen Gründen manchmal das Licht aus. Die beiden Hausmeister und einige Elektriker versuchen gemeinsam herauszufinden, ob das Problem die Schaltkreise oder die*

Lichtschalter sind.
Es ist so, dass jeder Elektriker die Schaltkreise und Hausmeister die Lichtschalter getestet hat.

(A.16) *Kontext: In der Turnhalle geht regelmäßig aus unerklärlichen Gründen das Licht aus. Die Hausmeister versuchen mit einigen Elektrikern gemeinsam herauszufinden, ob das Problem die Schaltkreise oder die Lichtschalter sind.*
Es ist so, dass irgendein Elektriker die Schaltkreise und Hausmeister die Lichtschalter getestet hat.

Item 5

(A.17) *Kontext: Im Zirkus Caravello haben einige Tierdompteure die Grippe bekommen und können nicht auftreten. Da der Zirkus nicht auf die Tierkunststücke verzichten will, müssen die anderen Mitarbeiter aushelfen.*
Irgendeinen Elefanten hat der Zirkusdirektor reingeführt und Löwen der Clown.

(A.18) *Kontext: Im Zirkus Caravello haben einige Tierdompteure die Grippe bekommen und können nicht auftreten. Da der Zirkus nicht auf die Tierkunststücke verzichten will, müssen die anderen Mitarbeiter aushelfen.*
Jeden Elefanten hat der Zirkusdirektor reingeführt und Löwen der Clown.

(A.19) *Kontext: Im Zirkus Caravello können die Tiere wunderbare Kunststücke vollführen.*
Wir haben gesehen, wie jeder Elefanten einen Handstand und Löwe ein Salto gemacht hat.

(A.20) *Kontext: Im Zirkus Caravello können manche Tiere wunderbare Kunststücke vollführen.*
Wir haben gesehen, wie irgendein Elefanten einen Handstand und Löwe ein Salto gemacht hat.

Item 6

(A.21) *Kontext: Das Brautpaar hat sich für ein Hochzeitsmenü entschieden. Beim Hauptgericht waren sie sich einig, bei Vor- und Nachspeise allerdings nicht. Ich weiß nicht mehr, welche Vorspeise und welche Nachspeise serviert werden sollen, aber...*
Irgendeine Vorspeise hat die Braut ausgewählt und Nachspeise der Bräutigam.

(A.22) *Kontext: Nach einigen Streiterein über das Hochzeitsmenü hat das Brautpaar nun beschlossen, die Auswahl der Vor- und Nachspeisen unter sich aufzuteilen. Beim Hauptgang waren sie sich einig.*
Jede Vorspeise hat die Braut ausgewählt und Nachspeise der Bräutigam.

(A.23) *Kontext: Bei der Auswahl des Hochzeitsmenüs lässt das Brautpaar keinen Luxus aus.*
Es ist so, dass jede Vorspeise Kaviar und Nachspeise Blattgold enthalten soll.

(A.24) *Kontext:Bei der Auswahl des Hochzeitsmenüs lässt das Brautpaar keinen Luxus aus.*
Es ist so, dass irgendeine Vorspeise Kaviar und Nachspeise Blattgold enthalten soll.

Item 7

(A.25) *Kontext: Dem Regisseur und einer talentierten aber schwierigen Schauspielerin gefällt das Bühnenbild für das neue Stück nicht. Die Schauspielerin hat an irgendeiner Requisite etwas auszusetzen und der Regisseur an einer Kulisse.*
Irgendeine Requisite hat die Schauspielerin kritisiert und Kulisse der Regisseur.

(A.26) *Kontext: Dem Regisseur und einer talentierten aber schwierigen Schauspielerin gefällt das Bühnenbild für das neue Stück nicht. Die Schauspielerin hat an allen Requisiten etwas auszusetzen und der Regisseur an allen Kulissen.*

Jede Requisite hat die Schauspielerin kritisiert und Kulisse der Regisseur.

(A.27) *Kontext: Dem Regisseur und einer talentierten aber schwierigen Schauspielerin gefällt das Bühnenbild für das neue Stück nicht. Die Schauspielerin hat an allen Requisiten etwas auszusetzen und der Regisseur an allen Kulissen.*
Es ist so, dass jede Requisite von der Schauspielerin und Kulisse vom Regisseur kritisiert wurde.

(A.28) *Kontext: Dem Regisseur und einer talentierten aber schwierigen Schauspielerin gefällt das Bühnenbild für das neue Stück nicht. Die Schauspielerin hat an irgendeiner Requisite etwas auszusetzen und der Regisseur an einer Kulisse.*
Es ist so, dass irgendeine Requisite von der Schauspielerin und Kulisse vom Regisseur kritisiert wurde.

Item 8

(A.29) *Kontext: Eric sammelt außergewöhnliche Pflanzen. Er hat mittlerweile seine Mutter und seine Verlobte mit seiner Leidenschaft angesteckt. Er hat einige exotische Tulpen und besondere Orchideen bekommen, aber nicht für alle hat er Platz.*
Irgendeine Tulpe hat er seiner Mutter geschenkt und Orchidee seiner Verlobten.

(A.30) *Kontext: Eric sammelt außergewöhnliche Pflanzen. Er hat einige exotische Tulpen und besondere Orchideen bekommen, aber nicht für alle hat er Platz.*
Jede Tulpe hat er seiner Mutter geschenkt und Orchidee seiner Verlobten.

(A.31) *Kontext: Eric sammelt außergewöhnliche Pflanzen. Er hat einige exotische Tulpen und besondere Orchideen bekommen, aber nicht für alle hat er Platz.*
Er hat gesagt, dass er jede Tulpe seiner Mutter und Orchidee seiner Verlobten geschenkt hat.

(A.32) *Kontext: Eric sammelt außergewöhnliche Pflanzen. Er hat einige exotische Tulpen und besondere Orchideen bekommen, aber nicht für alle hat er Platz.*
Er hat gesagt, dass er irgendeine Tulpe seiner Mutter und Orchidee seiner Verlobten geschenkt hat.

Fillers

(A.33) *Kontext: Lisas Freund Paul hat sich erschrocken, als Lisas Katze ihm plötzlich auf den Kopf gesprungen ist, um einer Fliege nachzujagen.*
Die Katze hat den Freund erschrocken.

(A.34) *Kontext: Als nach und nach alle Wanderer krank wurden, vermuten sie, dass die alte Waldhexe, deren Gemüsebeet sie zerstört haben, sich rächen will.*
Die Hexe hat die Wanderer während ihrer langen Reise vergiftet.

(A.35) *Kontext: Als nach dem großen Ball die Scherben der heruntergefallenen Gläser immer noch nicht weggeräumt waren, hat die Zarin sehr mit einer Magd geschimpft.*
Die Magd wurde beschimpft nach dem großen Ball.

(A.36) *Kontext: Eine Bekannte hat dich und einen deiner Freunde zu ihrer Feier eingeladen.*
Dein Freund und du bist eingeladen.

(A.37) *Kontext: Paula sagt zu ihrer Schwester:*
Du und dein Freund habt oft Besuch.

(A.38) *Kontext: Lukas hat vermutet, dass sein Rad gestohlen wurde, als er es nicht vor dem Haus stehen sah. Später erzählt ihm seine Mitbewohnerin, dass sie das Rad nur in den Keller gestellt hat.*
Das Fahrrad stehte im Keller.

(A.39) *Kontext: Die Firma braucht dringend jemanden, der mit den bulgarischen Kunden kommunizieren kann. Nun haben sie jemanden eingestellt, der Bulgarisch spricht.*
Bulgarisch haben sie jemanden eingestellt der spricht.

(A.40) *Kontext: Antje möchte ihrer Freundin Paula gern ein Buch schenken, das sie tief beeindruckt hat. Da sie einen ähnlichen Geschmack haben, macht Antje sich Sorgen, dass Paula das Buch vielleicht schon gelesen haben könnte.*
Das Buch hat Antje sich gefragt ob Paula bereits gelesen hat.

A.2. Experiment 2

Each version was presented with the same context.

Item 1

(A.41) *Kontext: Die fünfte Klasse des Jungeninternats macht einen Ausflug in den Streichelzoo. Die Kinder haben andere Lieblingstiere als die Lehrer.*

a. Ich glaube, dass jeder Junge die Ziegen und Lehrer die Gänse am besten findet.
b. Ich glaube, dass jeder Junge die Ziegen am besten findet und Lehrer die Gänse.
c. Ich glaube, dass jeder Junge die Ziegen und dass Lehrer die Gänse am besten findet.
d. Ich glaube, dass jeder Junge die Ziegen am besten findet und dass Lehrer die Gänse.

Item 2

(A.42) *Kontext: Zum Schulfest will die 9. Klasse Musikstücke aufführen, die sich das Publikum wünscht. Sie haben unter der Lehrer- und Schülerschaft eine Umfrage durchgeführt.*

a. Das Ergebnis ist, dass jeder Lehrer ein klassisches Stück und Schüler einen Rocksong hören möchte.
b. Das Ergebnis ist, dass jeder Lehrer ein klassisches Stück hören möchte und Schüler einen Rocksong.
c. Das Ergebnis ist, dass jeder Lehrer ein klassisches Stück und dass Schüler einen Rocksong hören möchte.
d. Das Ergebnis ist, dass jeder Lehrer ein klassisches Stück hören möchte und dass Schüler einen Rocksong.

Item 3

(A.43) *Kontext: In der Turnhalle geht ständig das Licht aus. Die Hausmeister sollen nun zusammen mit einigen Elektrikern feststellen, wo der Schaden ist.*

a. Der Plan ist, dass jeder Elektriker eine Sicherung und Hausmeister einen Lichtanschluss prüft.
b. Der Plan ist, dass jeder Elektriker eine Sicherung prüft und Hausmeister einen Lichtanschluss.
c. Der Plan ist, dass jeder Elektriker eine Sicherung und dass Hausmeister einen Lichtanschluss prüft
d. Der Plan ist, dass jeder Elektriker eine Sicherung prüft und dass Hausmeister einen Lichtanschluss.

Item 4

(A.44) *Kontext: Das Sterne-Restaurant serviert nur Gerichte mit den besten Zutaten.*

a. Es ist dort Vorschrift, dass jede Nachspeise Blattgold und Vorspeise Kaviar enthalten muss.
b. Es ist dort Vorschrift, dass jede Nachspeise Blattgold und dass Vorspeise Kaviar enthalten muss.
c. Es ist dort Vorschrift, dass jede Vorspeise Kaviar enthalten soll und Nachspeise Blattgold.
d. Es ist dort Vorschrift, dass jede Vorspeise Kaviar enthalten soll und dass Nachspeise Blattgold.

Fillers

(A.45) *Kontext: Karl weiß, dass Anja etwas mit ihrer Tante geplant hat, aber er weiß nicht genau, was.*
Karl denkt, dass Anja ihrer Tante die Briefmarken zeigt oder die Puppen verkauft.

(A.46) *Kontext: Felix ist verreist und hat seine Tante und seinen Nachbarn gebeten, sich um seine Haustiere zu kümmern. Als der Nachbar die Tiere füttern will, sieht er, dass eins von ihnen schon Futter bekommen*

hat, aber er weiß nicht genau, welches.
Felix' Tante muss den Hund gefüttert haben oder den Kater.

(A.47) *Kontext: Marla verteilt die Souvenirs aus ihrem letzten Urlaub.*
Ich glaube, sie hat ihrer Tante das Porzellan geschenkt und ihrem Onkel das Gemälde.

(A.48) *Kontext: Georg war mit dem Vorschlag einverstanden.*
Georg stimmte zu und nickte

(A.49) *Kontext: Leonie sagt zu ihrer Schwester:*
Du und dein Freund habt oft Besuch.

(A.50) *Kontext: Als eine ältere Frau auf dem Eis ausrutschte, kam niemand, um ihr zu helfen.*
Da standen ein paar Leute rum, aber rührten keinen Finger

(A.51) *Kontext: Ein Mitarbeiter erledigt seine Aufgabe etwas nachlässig.*
Der Mitarbeiter hat den Bericht ohne zu lesen archiviert.

(A.52) *Kontext: Die Grundschullehrerin berichtet Pauls Eltern über seinen Fortschritt:*
Die Fibeltexte versteht er und kann sie mit etwas Übung flüssig lesen.

(A.53) *Kontext: Lukas hat vermutet, dass sein Rad gestohlen wurde, als er es nicht vor dem Haus stehen sah. Später erzählt ihm seine Mitbewohnerin, dass sie das Rad nur in den Keller gestellt hat.*
Das Fahrrad stehte im Keller.

(A.54) *Kontext: Antje möchte ihrer Freundin Paula gern ein Buch schenken, das sie tief beeindruckt hat. Da sie einen ähnlichen Geschmack haben, macht Antje sich Sorgen, dass Paula das Buch vielleicht schon gelesen haben könnte.*
Das Buch hat Antje sich gefragt ob Paula bereits gelesen hat.

(A.55) *Kontext: Karl hat eine Briefmarkensammlung und Porzellanpuppen geerbt und möchte die Erbstücke gern verschenken.*

Dem Onkel zeigt Karl der Tante die Briefmarken und verkauft Heinz die Puppen.

(A.56) *Kontext: Kirsten und Lukas haben sich mit Freunden getroffen.*
Am Morgen traf Kirsten ihren Freund und ging Lukas bis zum Abend mit Fritz spazieren.

A.3. Experiment 3

Item 1

(A.57) *Kontext: Karl hat fast jedes Gericht in seinem Lieblingscafé bestellt.*

a. Er hat jede Vorspeise probiert und Nachspeise auch.
b. Er hat jede Vorspeise probiert und jede Nachspeise auch.

(A.58) *Kontext: Karls einjähriger Sohn ist normalerweise sehr wählerisch beim Essen. Heute war er aber mutig und hat verschiedene Gerichte probiert.*

a. Er hat mindestens eine Vorspeise probiert und Nachspeise auch.
b. Er hat mindestens eine Vorspeise probiert und mindestens eine Nachspeise auch.

Item 2

(A.59) *Kontext: Marianne ist eine leidenschaftliche Botanikerin.*

a. Sie kennt jede Orchideenart, und Rosenart auch.
b. Sie kennt jede Orchideenart, und jede Rosenart auch.

(A.60) *Kontext: Marianne möchte mehr über Botanik lernen. Sie beschäftigt sich zuerst mit Orchideen und Rosen, über die sie schon einiges weiß.*

a. Sie kennt mindestens eine Orchideenart, und Rosenart auch.
b. Sie kennt mindestens eine Orchideenart, und mindetsens eine Rosenart auch.

Item 3

(A.61) *Kontext: Antonia geht zum ersten Mal in den neueröffneten Teesalon.*

a. Sie möchte mindestens einen Grüntee probieren, und Kräutertee auch.
b. Sie möchte mindestens einen Grüntee probieren, und mindestens einen Kräutertee auch.
c. Sie möchte jeden Grüntee probieren, und Kräutertee auch.
d. Sie möchte jeden Grüntee probieren, und jeden Kräutertee auch.

Item 4

(A.62) *Kontext: Die Kneipentour für Erstis war ein voller Erfolg.*

a. Ich habe an dem Abend jede Studentin kennengelernt, und Dozentin auch.
b. Ich habe an dem Abend jede Studentin kennengelernt, und jede Dozentin auch.
c. Ich habe an dem Abend mindestens eine Studentin kennengelernt, und Dozentin auch.
d. Ich habe an dem Abend mindestens eine Studentin kennengelernt, und mindestens eine Dozentin auch.

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