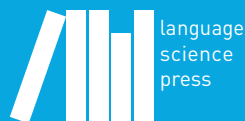


German clause structure: An analysis with special consideration of so-called multiple frontings

Stefan Müller

with contributions by Felix Bildhauer
and Philippa Cook

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Preface

This book motivates an analysis of the German clause in which the verb in initial position (verb first or verb second) is related to a trace in final position. Such analyses involving so-called verb movement are standard in Mainstream Generative Grammar but are frowned upon by all those researchers that want to avoid empty elements. Working in the framework of Head-Driven Phrase Structure Grammar I followed a linearization-based approach (Reape 1996; 1994) from 1993–2003. In the year 2000 I noticed data that looked as if more than one constituent was fronted, which is problematic for theories of German, since German is regarded as a verb second language, that is, there should be exactly one constituent in front of the finite verb in declarative clauses (leaving aside elliptical sentences). I developed analyses in the linearization-based framework I was working in, but for reasons that will be explained in this book, they were not satisfying. In the end I changed my mind and completely revised my theories and computer implementations and adopted a verb-movement analysis that is similar in spirit to the GB analysis. This analysis – which was developed by Meurers (1999), based on work of Kiss & Wesche (1991); Kiss (1995a) – is compatible with the analysis of multiple frontings that is developed in this book.

The present book is based on two articles that appeared in German in the journal *Linguistische Berichte* in 2005 (Müller 2005a,b). Since these two papers belong to those of my papers that are cited most often, I decided that it might be a good idea to make them available to a wider audience. The chapter 2 on German clause structure and the Chapter 3 on apparent multiple frontings and parts of Chapter 6 on alternative analyses of the German clause are based on these papers. The book ends with a chapter on empty elements, which is adapted from Müller (2004d). This chapter is meant to be a general discussion that shows what the cost is of alternative approaches that try to avoid empty elements. Finally, there is an Appendix containing a list of example sentences that are used as a test suite for testing the computer-processable grammar that covers the phenomena described in this book.

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I have presented the analysis developed in this book at Formal Grammar 2002 in Trento, Konvens 2002 in Saarbrücken, at an invited talk for the SFB 441 at the University of Tübingen in 2002, at the HPSG-Workshop for Germanic languages 2003 at the University of Bremen, the Workshop Deutsche Syntax: Empirie und Theorie 2004 in Gothenburg, at the Institute for Linguistics of the University Leipzig in 2004, at the Formal Grammar conference 2004 in Nancy, the Zentrum für Allgemeine Sprachwissenschaft, Typologie und Universalienforschung (ZAS) in Berlin 2006, at the Institute for German Language in Wuppertal in 2011, at the colloquium *Der Satzanfang im Deutschen: syntaktische, semantisch-pragmatische und informationsstrukturelle Integration vs. Desintegration* 2011 in Paris, and at the workshop *Satztypen und Konstruktionen im Deutschen: Satztypen: lexikalisch oder konfiguralional?* at the Johannes Gutenberg-Universität Mainz in 2013. Many thanks to those present at these events for the subsequent discussion and I would especially like to thank the respective people/institutions for inviting me.

The data discussed in this book come, in the most part, from my own collection of material I have read over the years. Examples from the Mannheimer Morgen, Frankfurter Rundschau, St. Galler Tagblatt, Tiroler Tageszeitung and the Züricher Tagesanzeiger were retrieved from the German Reference Corpus (Institut für Deutsche Sprache 2005–2015, <http://ids-mannheim.de/DeReKo>). Additional examples can be found at <http://hpsg.fu-berlin.de/~stefan/Pub/mehr-vf-ds.html> and in the database of annotated examples that was constructed from DeReKo data by Felix Bildhauer (2011) in the project A6 of the Collaborative Research Center/SFB 632 (accessible at <http://hpsg.fu-berlin.de/Resourcen/MVB/>).

I would like to thank Andrew Murphy for translating Müller (2005a) and Müller (2005b), which are the core of the Chapters 1–3 and for proofreading these parts.

Berlin, 12th May 2021

Stefan Müller

1 Introduction

The German sentence can be adequately described using the topological model of (Reis 1980; Höhle 1986; Askedal 1986). In the sentence (1), the verbs *hat* ‘has’ and *gegeben* ‘given’ form a ‘frame’ around the rest of the sentence. The finite verb *hat* ‘has’ occupies the left sentence bracket and the infinitive *gegeben* ‘given’ the right one.

- (1) Der Mann hat der Frau das Buch gegeben, das wir alle kennen.
the man has the woman the book given that we all know
‘The man gave the woman the book that we all know.’

Situated between the sentence brackets is the so-called ‘middle-field’ (*Mittelfeld*). The prefield (*Vorfeld*) precedes the left bracket, and the postfield (*Nachfeld*) follows the right bracket.

In subordinate clauses introduced by a conjunction, the conjunction takes the left sentence bracket and the finite verb is located with the rest of the non-finite verb forms in the right bracket:

- (2) dass der Mann der Frau das Buch gegeben hat
that the man the woman the book given has
‘that the man gave the woman the book’

In this book I develop an analysis which – like many analyses of German clause structure before – establishes a link between verb-first and verb-final sentences.

Constituents in the middle-field exhibit a relatively free ordering:

- (3) a. [weil] der Mann der Frau das Buch gibt
because the.NOM man the.DAT woman the.ACC book gives
‘because the man gives the book to the woman’
b. [weil] der Mann das Buch der Frau gibt
because the man.NOM the book.ACC the woman.DAT gives
c. [weil] das Buch der Mann der Frau gibt
because the.ACC book the.NOM man the.DAT woman gives
d. [weil] das Buch der Frau der Mann gibt
because the.ACC book the.DAT woman the.NOM man gives

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- e. [weil] der Frau der Mann das Buch gibt
because the.DAT woman the.NOM man the.ACC book gives
- f. [weil] der Frau das Buch der Mann gibt
because the.DAT woman the.ACC book the.NOM man gives

This is accounted for by assuming that a head may combine with its arguments in any order. Of course there are restrictions, but these restrictions are represented independently of the general combinatory mechanism.

The prefield can be occupied by one constituent (an adjunct, subject or complement), which is why German is viewed as a verb-second language (Erdmann 1886: Chapter 2.4; Paul 1919: 69, 77). Examples such as (4) show that occupation of the prefield cannot simply be explained as an ordering variety of an element dependent on the finite verb (in analogy to reorderings in the middle field):

- (4) [Um zwei Millionen Mark]_i soll er versucht haben, [eine
around two million Deutschmarks should he tried have an
Versicherung _{-i} zu betrügen].¹
insurance.company to defraud
'He supposedly tried to defraud an insurance company of two million
Deutschmarks.'

The head that governs the PP (*betrügen* 'defraud') is located inside of the infinitive clause. The PP as such is not directly dependent on the finite verb and can therefore not have reached the prefield by means of a simple local reordering operation. This shows that the dependency between *betrügen* and *um zwei Millionen* 'around two million Deutschmarks' is a long distance dependency: an element belonging to a deeply embedded head has been fronted over several phrasal borders.

Thiersch (1978), den Besten (1983: 55), Uszkoreit (1987) and others have suggested a connection between verb-second and verb-first sentences, and that verb-second sentences should be analyzed as verb-first sentences with an extracted constituent placed in the prefield.

- (5) a. Kennt er das Buch?
knows he the book
'Does he know the book?'

¹taz, 04.05.2001, p. 20.

- b. Das Buch kennt er.
the book knows he
'He knows the book.'

This is also the approach that I assume in this book.

The elements in the right bracket form a complex. I assume that such complexes are formed first and are then combined with the arguments that depend on the elements in the complex. For instance, *gegeben* 'given' and *hat* 'has' in (2) form one unit, which is then combined with *das Buch* 'the book', *der Frau* 'the woman', and *der Mann* 'the man' in later steps.

The left peripheral elements of this verbal complex can (in some cases together with the adjacent material from the middle field) be moved into the prefield:

- (6) a. Gegeben hat er der Frau das Buch.
given has he the woman the book
'He gave the woman the book.'
- b. Das Buch gegeben hat er der Frau.
the book given has he the woman
- c. Der Frau gegeben hat er das Buch.
the woman given has he the book
- d. Der Frau das Buch gegeben hat er.
the woman the book given has he

Since the fronted verbal projections in (6a–c) are partial, such frontings are called *partial verb phrase frontings*.

While there is a broad consensus among reasearchers from various frameworks that German is a V2 language, some challenging examples can be found that seem to contradict the V2 characteristic of German (see Müller (2003); Bildhauer (2011) and the literature discussed there). Some examples are given in (7) and further examples are discussed in Section 3.1.

- (7) a. [Dauerhaft] [mehr Arbeitsplätze] gebe es erst, wenn sich eine
constantly more jobs give it first when REFL a
Wachstumsrate von mindestens 2,5 Prozent über einen Zeitraum
growth.rate of at.least 2.5 percent over a time.period
von drei oder vier Jahren halten lasse.²
of three or four years hold lets
'In the long run, there will only be more jobs available, when a

²taz, 19.04.2000, p. 5.

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growth rate of at least 2.5 percent can be maintained over a period of three of four years.'

- b. [Unverhohlen verärgert] [auf Kronewetters Vorwurf] reagierte Silke
Blatantly annoyed by Kronewetter's reproach reacted Silke
Fischer.³

Fischer

'Blatantly annoyed, Silke Fischer reacted to Kronewetter's reproach.'

- c. [Hart] [ins Gericht] ging Klug mit dem Studienkontenmodell
hard in.the court went Klug with the tuition.account.model.
der Landesregierung.⁴
of.the state.government

'Klug roasted the state government's tuition account model.'

In Chapter 3 I show how these examples can be analyzed using a special variant of the lexical rule that is suggested for the analysis of verb-initial sentences in combination with verbal complex formation and partial verb phrase fronting.

³taz berlin, 23.04.2004, p. 21.

⁴taz nord, 19.02.2004, p. 24.

2 German clause structure

This chapter deals with the basic sentence structure of German. Section 2.1 introduces the phenomena that have to be covered. As Brigitta Haftka formulated it in the title of her paper, German is a verb second language with verb last order and free constituent order (Haftka 1996). This first sounds contradictory, but as will be shown in the following section, these three properties are indeed independent. I first motivate the categorization of German as an SOV language in Section 2.1.1, then I discuss the free constituent order (Section 2.1.2) and the V2 property (Section 2.1.3). Verbal complexes interact with free constituent order and are discussed in Section 2.1.5. Frontings of parts of the verbal complex and non-verbal arguments are discussed in Section 2.1.6.

Section 2.2 provides the analysis of these phenomena.

2.1 The phenomenon

(1) provides examples of the main clause types in German: (1a) is a verb last (VL) sentence, (1b) is a verb first (V1) sentence, and (1c) a verb second (V2) sentence:

- (1) a. dass Peter Maria ein Buch gibt
that Peter Maria a book gives
'that Peter gives a book to Maria'
- b. Gibt Peter Maria ein Buch?
gives Peter Maria a book
'Does Peter give a book to Maria?'
- c. Peter gibt Maria ein Buch.
Peter gives Maria a book
'Peter gives a book to Maria.'

The following subsections deal with all these sentences types and address the question whether one of them is basic.

2.1.1 German as a SOV language

It is assumed by many researchers that German is an SOV language, although this order is only visible in embedded clauses like (1a) and not in yes/no questions like (1b) and declarative main clauses like (1c). The reason for this assumption is that German patterns with many SOV languages and differs from SVO languages (for example Scandinavian languages). The analysis of German as an SOV language is almost as old as Transformational Grammar: it was first suggested by Bierwisch (1963: 34). Bierwisch attributes the assumption of an underlying verb-final order to Fourquet (1957). A German translation of the French manuscript cited by Bierwisch can be found in Fourquet (1970: 117–135). For other proposals, see Bach (1962), Reis (1974), Koster (1975), and Thiersch (1978: Chapter 1). Analyses which assume that German has an underlying SOV pattern were also suggested in GPSG (Jacobs 1986: 110), LFG (Berman 1996: Section 2.1.4) and HPSG (Kiss & Wesche 1991: Section 4.7; Oliva 1992b; Netter 1992; Kiss 1993; Frank 1994a; Kiss 1995a; Feldhaus 1997, Meurers 2000; Müller 2005a).

The assumption of verb-final order as the base order is motivated by the following observations:¹

1. Verb particles form a close unit with the verb.

- (2) a. weil er morgen an-fängt
because he tomorrow PRT-starts
'because he is starting tomorrow'
b. Er fängt morgen an.
he starts tomorrow PRT
'He is starting tomorrow.'

This unit can only be seen in verb-final structures, which speaks for the fact that this structure reflects the base order.

2. Verbs formed by backformation often cannot be separated.

Verbs which are derived from a noun by back-formation (e.g., *uraufführen* 'to perform something for the first time', can often not be divided into their component parts and V2 clauses are therefore ruled out (This was first mentioned by Höhle (1991) in unpublished work. The first published source is Haider (1993: 62)):

¹For points 1 and 2, see Bierwisch (1963: 34–36). For point 6 see Netter (1992: Section 2.3).

- (3) a. weil sie das Stück heute urauf-führen
because they the play today PRT-lead
'because they are performing the play for the first time today'
- b. * Sie uraufführen heute das Stück.
they PRT-lead today the play
- c. * Sie führen heute das Stück urauf.
they lead today the play PRT

The examples show that there is only one possible position for the verb. This order is the one that is assumed to be the base order.

3. Some constructions allow SOV order only.

Similarly, it is sometimes impossible to realize the verb in initial position when elements like *mehr als* 'more than' are present in the clause (Haider 1997; Meinunger 2001):

- (4) a. dass Hans seinen Profit letztes Jahr mehr als verdreifachte
that Hans his profit last year more than tripled
'that Hans increased his profit last year by a factor greater than three'
- b. Hans hat seinen Profit letztes Jahr mehr als verdreifacht.
Hans has his profit last year more than tripled
'Hans increased his profit last year by a factor greater than three.'
- c. * Hans verdreifachte seinen Profit letztes Jahr mehr als.
Hans tripled his profit last year more than

So, it is possible to realize the adjunct together with the verb in final position, but there are constraints regarding the placement of the finite verb in initial position.

4. Verbs in non-finite clauses and in finite subordinate clauses with a conjunction are always in final position (I am ignoring the possibility of extraposing constituents):

- (5) a. Der Clown versucht, Kurt-Martin die Ware zu geben.
the clown tries Kurt-Martin the goods to give
'The clown is trying to give Kurt-Martin the goods.'

2 German clause structure

- b. dass der Clown Kurt-Martin die Ware gibt
that the clown Kurt-Martin the goods gives
'that the clown gives Kurt-Martin the goods'

The English translation shows that English has VO order where German has an OV order.

5. If one compares the position of the verb in German to Danish (Danish is an SVO language like English), then one can clearly see that the verbs in German form a cluster at the end of the sentence, whereas they occur before any objects in Danish (Ørsnes 2009):

- (6) a. dass er ihn gesehen₃ haben₂ muss₁
that he him seen have must
b. at han må₁ have₂ set₃ ham
that he must have seen him
'that he must have seen him'

6. The scope relations of the adverbs in (7) depend on their order: the left-most adverb has scope over the two following elements.² This was explained with the following structure:

²At this point, it should be mentioned that there seem to be exceptions from the rule that modifiers to the left take scope over those to their right. Kasper (1994: 47) discusses examples such as (i), which go back to Bartsch & Vennemann (1972: 137).

- (i) a. Peter liest gut wegen der Nachhilfestunden.
Peter reads well because.of the tutoring
'Peter can read well thanks to the tutoring.'
b. Peter liest wegen der Nachhilfestunden gut.
Peter reads because.of the tutoring well

As Koster (1975: Section 6) and Reis (1980: 67) have shown, these are not particularly convincing counter-examples as the right sentence bracket is not filled in these examples and it must therefore not necessarily constitute normal reordering inside of the middle field, but could instead be a case of extraposition. As noted by Koster and Reis, these examples become ungrammatical if one fills the right bracket and does not extrapose the causal adjunct:

- (ii) a. *Hans hat gut wegen der Nachhilfestunden gelesen.
Hans has well because.of the tutoring read
b. Hans hat gut gelesen wegen der Nachhilfestunden.
Hans has well read because.of the tutoring
'Hans has been reading well because of the tutoring.'

However, the following example from Cysmann (2004: 383) shows that, even with the right

- (7) a. weil er [absichtlich [nicht lacht]]
 because he intentionally not laughs
 ‘because he is intentionally not laughing’
 b. weil er [nicht [absichtlich lacht]]
 because he not intentionally laughs
 ‘because he is not laughing intentionally’

If one compares (7) and (8) one can see that scope relations are not affected by verb position. If one assumes that sentences with verb-second order have the underlying structure in (7), then this fact requires no further explanation. (8) shows the structure for (7):

- (8) a. Er lacht_i [absichtlich [nicht _{-i}]].
 he laughs intentionally not
 ‘He is intentionally not laughing.’
 b. Er lacht_i [nicht [absichtlich _{-i}]].
 he laughs not intentionally
 ‘He is not laughing intentionally.’

These properties have been taken as evidence for an underlying SOV order of German. That is, V1 and V2 sentences are assumed to be derived from or to be somehow related to SOV sentences. It is possible though to represent the clause types on their own right without relating them. Respective proposals will be

bracket occupied, one can still have an order where an adjunct to the right has scope over one to the left:

- (iii) Da muß es schon erhebliche Probleme mit der Ausrüstung gegeben haben, da
 there must it already serious problems with the equipment given have since
 wegen schlechten Wetters ein Reinhold Messmer niemals aufgäbe.
 because.of bad weather a Reinhold Messmer never would.give.up
 ‘There really must have been some serious problems with the equipment because someone
 like Reinhold Messmer would never give up just because of some bad weather.’

Nevertheless, this does not change anything regarding the fact that the corresponding cases in (7) and (8) have the same meaning regardless of the position of the verb. The general means of semantic composition may well have to be implemented in the way suggested by Crysmann.

Another word of caution is in order here: There are SVO languages like French that also have a left to right scoping of adjuncts (Bonami et al. 2004: 156–161). So, the argumentation above should not be seen as the only fact supporting the SOV status of German. In any case the analyses of German that were worked out in various frameworks can explain the facts nicely.

discussed in Chapter 6. I assumed such an analysis for ten years and I think the basic sentence structures can be explained quite well. However, the apparent multiple frontings, which will be discussed in the next chapter, do not integrate nicely into the alternative analyses. This caused me to drop my analysis and to revise my grammar in a way that is inspired by early transformational analyses.

2.1.2 German as a language with free constituent order

As was already mentioned in the introduction, German is a language with rather free constituent order. For example, a verb with three arguments allows for six different orders of the arguments. This is exemplified with the ditransitive verb *geben* in (9):

- (9) a. [weil] der Mann der Frau das Buch gibt
because the.NOM man the.DAT woman the.ACC book gives
'because the man gives the book to the woman'
- b. [weil] der Mann das Buch der Frau gibt
because the.NOM man the.ACC book the.DAT woman gives
- c. [weil] das Buch der Mann der Frau gibt
because the.ACC book the.NOM man the.DAT woman gives
- d. [weil] das Buch der Frau der Mann gibt
because the.ACC book the.DAT woman the.NOM man gives
- e. [weil] der Frau der Mann das Buch gibt
because the.DAT woman the.NOM man the.ACC book gives
- f. [weil] der Frau das Buch der Mann gibt
because the.DAT woman the.ACC book the.NOM man gives

Adjuncts can be placed anywhere between the arguments as the examples in (10) show.

- (10) a. [weil] jetzt der Mann der Frau das Buch gibt
because now the.NOM man the.DAT woman the.ACC book gives
'because the man gives the book to the woman now'
- b. [weil] der Mann jetzt der Frau das Buch gibt
because the.NOM man now the.DAT woman the.ACC book gives
'because the man gives the book to the woman now'
- c. [weil] der Mann der Frau jetzt das Buch gibt
because the.NOM man the.DAT woman now the.ACC book gives
'because the man gives the book to the woman now'

- d. [weil] der Mann der Frau das Buch jetzt gibt
because the.NOM man the.DAT woman the.ACC book now gives
‘because the man gives the book to the woman now’

(10) is the result of inserting the adverb *jetzt* ‘now’ into every possible position in (9a). Of course adverbs can be inserted into each of the other sentences in (9) in the same way and it is also possible to have several adjuncts per clause in all the positions. (11) is an example by Uszkoreit (1987: 145) that illustrates this point:

- (11) *Gestern hatte in der Mittagspause der Vorarbeiter in der*
yesterday had during the lunch.break the foreman in the
Werkzeugkammer dem Lehrling aus Boshaftigkeit langsam zehn
tool.shop the apprentice maliciously slowly ten
schmierige Gußeisenscheiben unbemerkt in die Hosentasche gesteckt.
greasy cast.iron.disks unnoticed in the pocket put
‘Yesterday during lunch break, the foreman maliciously and unnoticed,
put ten greasy cast iron disks slowly into the apprentice’s pocket.’

In transformational theories it is sometimes assumed that there is a base configuration from which all other orders are derived. For instance, there could be a VP including the verb and the two objects and this VP is combined with the subject to form a complete sentence. For all orders in which one of the objects precedes the subject it is assumed that there is a movement process that takes the object out of the VP and attaches it to the left of the sentence.

An argument that has often been used to support this analysis is the fact that scope ambiguities exist in sentences with reorderings which are not present in the base order. The explanation of such ambiguities comes from the assumption that the scope of quantifiers can be derived from their position before movement as well as their position after movement. When there has not been any movement, then there is only one reading possible. If movement has taken place, however, then there are two possible readings (Frey 1993:):

- (12) a. Es ist nicht der Fall, daß er mindestens einem Verleger fast
it is not the case that he at.least one publisher almost
jedes Gedicht anbot.
every poem offered
‘It is not the case that he offered at least one publisher almost every poem.’
b. Es ist nicht der Fall, daß er fast jedes Gedicht_i mindestens einem
it is not the case that he almost every poem at.least one

Verleger $_{-i}$ anbot.
 publisher offered

‘It is not the case that he offered almost every poem to at least one publisher.’

The position from which the NP *jedes Gedicht* ‘every poem’ is supposed to be moved is marked by a trace ($_{-i}$) in the example above.

It turns out that approaches assuming traces run into problems as they predict certain readings for sentences with multiple traces, which do not exist (see Kiss 2001: 146 and Fanselow 2001: Section 2.6). For instance in an example such as (13), it should be possible to interpret *mindestens einem Verleger* ‘at least one publisher’ at the position of $_{-i}$, which would lead to a reading where *fast jedes Gedicht* ‘almost every poem’ has scope over *mindestens einem Verleger* ‘at least one publisher’.

- (13) Ich glaube, dass mindestens einem Verleger_{*i*} fast jedes Gedicht_{*j*} nur
 I believe that at.least one publisher almost every poem only
 dieser Dichter $_{-i} \text{ }_{-j}$ angeboten hat.
 this poet offered has
 ‘I think that only this poet offered almost every poem to at least one publisher.’

This reading does not exist, however.

The alternative to a movement analysis is called *base generation* in transformational frameworks. The possible orders are not derived by movement but are licensed by grammar rules directly. Such a base-generation analysis, that is the direct licensing of orders without any additional mechanisms, is the most common analysis in non-transformational frameworks like HPSG (Pollard 1996), LFG (Berman 2003), Construction Grammar (Micelli 2012) and Dependency Grammar (Eroms 2000; Groß & Osborne 2009) and I provide such an analysis in Section 2.2.1.

2.1.3 German as a verb second language

German is a verb second (V2) language (Erdmann 1886: Chapter 2.4; Paul 1919: 69, 77), that is, (almost) any constituent (an adjunct, subject or complement) can be placed in front of the finite verb. (14) shows some prototypical examples again involving the ditransitive verb *geben* ‘to give’:

- (14) a. Der Mann gibt der Frau das Buch.
the man gives the woman the book
'The man gives the woman the book.'
- b. Der Frau gibt der Mann das Buch.
the woman gives the man the book
'The man gives the woman the book.'
- c. Das Buch gibt der Mann der Frau.
the book gives the man the woman
'The man gives the woman the book.'
- d. Jetzt gibt der Mann der Frau das Buch.
now gives the man the woman the book
'The man gives the woman the book now.'

If this is compared with English, one sees that English has XP SVO order, that is the basic SVO order stays intact and one constituent is placed in front of the sentence into which it belongs:

- (15) a. The woman, the man gives the book.
b. The book, the man gives the woman.
c. Now, the man gives the woman the book.

Languages like Danish on the other hand are V2 languages like German but nevertheless SVO languages (see the discussion of (6) on page 8). Although the verb in embedded sentences like (6) precedes the object and follows the subject, the finite verb appears initially and one of the constituents is fronted. The resulting orders are identical to the ones we see in German.

Examples such as (16) show that occupation of the prefield cannot simply be explained as an ordering variant of an element dependent on the finite verb (in analogy to reorderings in the middle field):

- (16) [Um zwei Millionen Mark]_i soll er versucht haben, [eine
around two million Deutschmarks should he tried have an
Versicherung _{-i} zu betrügen].³
insurance.company to defraud
'He supposedly tried to defraud an insurance company of two million
Deutschmarks.'

³taz, 04.05.2001, p. 20.

The head that governs the PP (*betrügen* ‘defraud’) is located inside of the infinitive clause. The PP as such is not directly dependent on the finite verb and can therefore not have reached the prefield by means of a simple local reordering operation. This shows that the dependency between *betrügen* and *um zwei Millionen* ‘around two million Deutschmarks’ is a long distance dependency: an element belonging to a deeply embedded head has been fronted over several phrasal borders.

Such long distance dependencies are often modeled by devices that assume that there is a position in the local domain where one would expect the fronted constituent. This is indicated by the $_i$, which is called a gap or a trace. The gap is related to the filler. The alternative to assuming such a gap is to establish some dependency between the filler and the head on which the filler is dependent. This is done in Dependency Grammar (Hudson 2000) and in traceless approaches in HPSG (Bouma, Malouf & Sag 2001) and LFG (Kaplan & Zaenen 1989). The question is whether it is reasonable to assume that even simple V2 sentences, that is sentences in which the filler does not belong to a deeply embedded head, also involve a filler-gap dependency. Approaches that assume that sentences like (17a) are just a possible linearization variant of the verb and its dependents will have problems in explaining the ambiguity of this sentence. (17a) has two readings, which correspond to the readings of (17b) and (17c):

- (17) a. Oft liest er das Buch nicht.
 often reads he the book not
 ‘It is often that he does not read the book.’ or ‘It is not the case that he reads the book often.’
 b. dass er das Buch nicht oft liest
 that he the book not often reads
 ‘It is not the case that he reads the book often.’
 c. dass er das Buch oft nicht liest
 that he the book often not reads
 ‘It is often that he does not read the book.’

If one assumes that there is a filler-gap dependency in (17a), one can assume that the dependency can be introduced before the negation is combined with the verb or after the combination. This would immediately explain the two readings that exist for (17a). Approaches that assume that the order is a simple ordering variant of the involved constituents would predict that (17a) has the reading of (17c) since (17a) and (17c) have the same order of *oft* ‘often’ and *nicht* ‘not’ and the order is important for scope determination in German.

2.1.4 Distribution of complementizer and finite verb

2.1.5 Verbal complexes

It is common to assume that verb and objects form a phrase in VO languages like English. However, for languages like German, it seems more appropriate to assume that verbs in the right sentence bracket form a verbal complex and that this verbal complex acts like one complex predicate when it is combined with the nonverbal arguments. The following examples support this view. If one would assume a structure like the one in (18a), it is difficult to explain the ordering of (18b) because the auxiliary *wird* ‘will’ is located between two elements of the verb phrase.

- (18) a. dass Karl [[das Buch lesen] können] wird
 that Karl the book read can will
 ‘that Karl will be able to read the book’
 b. dass Karl das Buch wird lesen können
 that Karl the book will read can
 ‘that Karl will be able to the read the book.’

Furthermore, the sentences in (19) are not ruled out by such an analysis since *das Buch lesen* ‘the book read’ forms a phrase which would be predicted to be able to scramble left in the middle-field as in (19a) or appear in a so-called pied-piping construction with a relative clause as in (19b).

- (19) a. * dass [das Buch lesen] Karl wird
 that the book read Karl will
 b. * das Buch, [das lesen] Karl wird
 the book that read Karl will

Hinrichs & Nakazawa (1994a) therefore suggest that (certain) verbal complements are saturated before non-verbal ones. This means that, in the analysis of (18a) and (18b), *lesen* ‘to read’ is first combined with *können* ‘can’ and the resulting verbal complex is then combined with *wird* ‘will’:

- (20) dass Karl das Buch [[lesen können] wird]
 that Karl the book read can will

wird ‘will’ can be placed to the right of the embedded verbal complex (as in (20)), or indeed to the left as in (18b). After the construction of the verbal complex *lesen*

können wird, it is then combined with the arguments of the involved verbs, that is with *Karl* and *das Buch* ‘the book’.⁴

There are also coordination data, such as the example in (21), which support this kind of approach.

- (21) Ich liebte ihn, und ich fühlte, daß er mich auch geliebt hat oder doch,
 I loved him and I felt that he me also loved had or PRT
 daß er mich hätte lieben wollen oder lieben müssen.⁵
 that he me would.have love want or love must.
 ‘I loved him and felt that he loved me too, or at least he would have wanted to love me or would have had to.’

If one assumes that modal verbs form a verbal complex, *lieben wollen* ‘love want’ and *lieben müssen* ‘love must’ are constituents and as such they can be coordinated in a symmetric coordination. The result of the coordination can then function as the argument of *hätte* ‘had’.

Arguments of the verbs that are part of a verbal complex may be scrambled as the following example from Haider (1991: 128) shows:

- (22) weil es ihr jemand zu lesen versprochen hat
 because it.ACC her.DAT somebody.NOM to read promised has
 ‘because somebody promised her to read it’

jemand ‘somebody’ depends on *hat* ‘has’, *ihm* ‘him’ depends on *versprochen* ‘promised’ and *es* ‘it’ depends on *zu lesen* ‘to read’. In principle all six permutations of these arguments are possible again and hence the verbal complex acts like a simplex ditransitive verb.

2.1.6 Partial verb phrase fronting

The left peripheral elements of this verbal complex can (in some cases together with the adjacent material from the middle field) be moved into the prefield:

- (23) a. Gegeben hat er der Frau das Buch.
 given has he the woman the book
 ‘He gave the woman the book.’
 b. Das Buch gegeben hat er der Frau.
 the book given has he the woman

⁴This kind of structure has already been suggested by Johnson (1986) in connection with an analysis of partial verb phrase fronting.

⁵(Hoberg 1981: 36)

- c. Der Frau gegeben hat er das Buch.
the woman given has he the book
- d. Der Frau das Buch gegeben hat er.
the woman the book given has he

Since the verbal projections in (24a–c) are partial, such frontings are called *partial verb phrase frontings*.

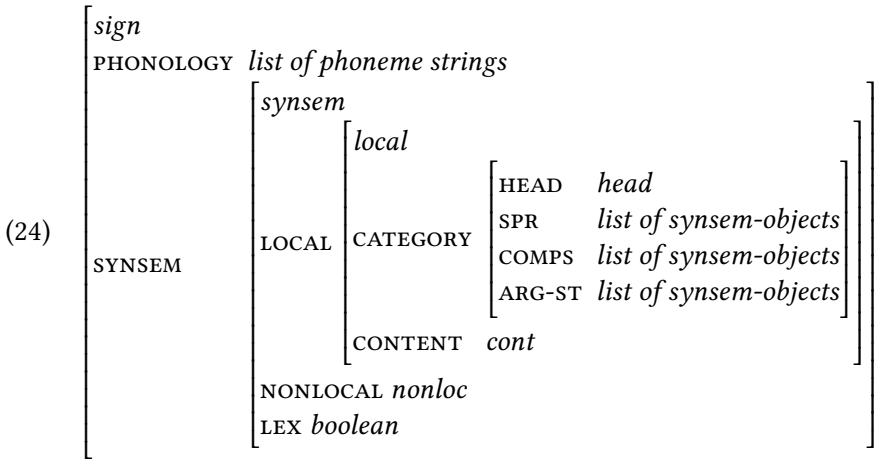
2.2 The analysis

The following analysis uses Head-driven Phrase Structure Grammar (HPSG) as its main framework (Pollard & Sag 1994). It is, of course, not possible to provide a comprehensive introduction to HPSG here, so a certain acquaintance with the general assumptions and mechanisms is assumed for the following argumentation. The interested reader may refer to Müller (2013b; 2015a) for introductions that are compatible with what is presented here. In Section 2.2.1, I will go over some basic assumptions to aid the understanding of the analysis, and will also show how the relatively free ordering of constituents in the German *Mittelfeld* can be analyzed. In Section 2.2.2, I will recapitulate a verb-movement analysis for verb-first word orderings and in Section 2.2.3 I discuss the analysis of verb-second sentences. Section 2.2.4 will deal with the analysis of predicate complexes and the fronting of partial projections.

2.2.1 Background assumptions

Every modern linguistic theory makes use of features in order to describe linguistic objects. In HPSG grammars, features are systematically organized into ‘bundles’. These bundles correspond to certain characteristics of a linguistic object: for example, syntactic features form one feature bundle, and semantic features form another. HPSG is a theory about linguistic signs in the sense of Saussure (Saussure16a). The modelled linguistic signs are pairs of form and meaning.

(24) shows the feature geometry of signs that I will assume in the following:



The value of PHONOLOGY is a list of phonological forms. Usually, the orthographic form is used to improve readability.

SYNSEM contains syntactic and semantic information. The feature LOCAL (LOC) is called as such because syntactic and semantic information in this path are those which are relevant in local contexts. In contrast, there is, of course, also non-local information. Such information is contained in the path SYNSEM|NONLOC. I will expand on this in Section 2.2.3. Information about the syntactic category of a sign (CATEGORY) and information about its semantic content (CONTENT) are ‘local information’. HEAD, SPR, COMPS, and ARG-ST belong to the features which are included in the path SYNSEM|LOC|CAT in the feature description. The value of HEAD is a feature structure which specifies the syntactic characteristics that a certain lexical sign shares with its projections, that is, with phrasal signs whose head is the corresponding lexical sign. The ARG-ST feature provides information about the argument structure of a particular sign. Its value is a list which includes the elements (possibly only partially specified) with which the sign has to be combined to produce a grammatically complete phrase. The elements are mapped to valence features like SPR and COMPS. I follow Pollard (1996) in assuming that finite verbs have all their arguments on the COMPS list, that is, there is no difference between subjects and complements as far as finite verbs are concerned. In SVO languages like English and Danish, the subject is represented under SPR and all other arguments under COMPS.

The LEX value has the value + with lexical signs and predicate complexes and – with phrasal projections.⁶ The lexical item in (25) is an example of the finite

⁶Muysken (1982) suggests a MIN feature in \bar{X} theory which corresponds to the LEX feature. A MAX feature, in the way that Muysken uses it, is not needed since the maximality of a projection

form of the verb *kennen* ‘to know’.

(25) Lexical item for *kennt* ‘knows’:

<i>word</i>			
PHON	$\langle kennt \rangle$		
SYNSEM	CAT	HEAD	$\begin{bmatrix} verb \\ VFORM\ fin \end{bmatrix}$
		SPR	$\langle \rangle$
		COMPS	$\langle NP[nom]_{[1]}, NP[acc]_{[2]} \rangle$
	LOC	$\begin{bmatrix} HOOK INDEX\ [3] \end{bmatrix}$	
	CONT	$\begin{bmatrix} RELS\ \langle \begin{bmatrix} kennen \\ ARG0\ [3] \\ ARG1\ [1] \\ ARG2\ [2] \end{bmatrix} \rangle \end{bmatrix}$	
	NONLOCAL	$\begin{bmatrix} INHERITED SLASH\ \langle \rangle \end{bmatrix}$	
		$\begin{bmatrix} TO-BIND SLASH\ \langle \rangle \end{bmatrix}$	
LEX +			

kennen ‘to know’ requires a subject (NP[*nom*]) and an accusative object (NP[*acc*]). NP[*nom*] and NP[*acc*] are abbreviations for feature descriptions which are similar to (25). This requirement is represented on the ARG-ST list, but since this list is identical to the COMPS list for finite verbs, it is not given here. It is in the lexical entry that the syntactic information is linked to the semantic information. The subscript box on the NPs indicates the referential index of that particular NP. This is identified with an argument role of the *kennen* relation. The semantic contribution of signs consist of an index and a list of relations that are contributed by the sign. The index corresponds to a referential variable for nouns and for an event variable for verbs. The referential index of a sign is usually linked to its ARG0. I assume Minimal Recursion Semantics (MRS; Copestake, Flickinger, Pollard & Sag 2005) as the format of the representation of semantic information. This choice is not important for the analysis of the syntax of the German clause that is discussed in this chapter and for the analysis of apparent multiple frontings

can be ascertained by the number of elements in its valence list: maximal projections are completely saturated and therefore have empty valence lists.

that is discussed in the following chapter. So the semantic representations are abbreviated in the following. However, the semantic representation is important when it comes to the representation of information structure and hence there will be a brief introduction to MRS in Section 5.3.1.

Heads are combined with their required elements by means of a very general rule, which (when applied to the conventions for writing phrase structure rules) can be represented as follows:

$$(26) \quad H[\text{COMPS } \boxed{1} \oplus \boxed{3}] \rightarrow H[\text{COMPS } \boxed{1} \oplus \langle \boxed{2} \rangle \oplus \boxed{3}] \quad \boxed{2}$$

The rule in (26) combines an element ($\boxed{2}$) from the COMPS list of a head with the head itself. The COMPS list of the head is split into three lists using the relation append (\oplus), which splits a list in two parts (or combines two lists into a new one). The first list is $\boxed{1}$, the second list is the list containing $\boxed{2}$ and the third list is $\boxed{3}$. If the COMPS list of the head contains just one element, $\boxed{1}$ and $\boxed{3}$ will be the empty list and since the COMPS list of the mother is the concatenation of $\boxed{1}$ and $\boxed{3}$, the COMPS list of the mother node will be the empty list. The H in the rule stands for ‘Head’. Depending on which syntactic category a rule is instantiated by, the H can stand for noun, adjective, verb, preposition or another syntactic category. Figure 2.1 is an example analysis for the sentence in (27).⁷

- (27) weil er das Buch kennt
 because he the book knows
 ‘because he knows the book’

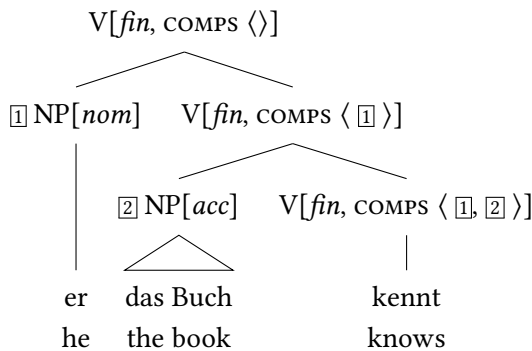


Figure 2.1: Analysis of *weil er das Buch kennt* ‘because he knows the book’

⁷In the following figures, H stands for ‘head’, C for ‘complement’, A for ‘adjunct’, F for ‘filler’ and CL for ‘cluster’.

Grammatical rules in HPSG are also described using feature descriptions. The rule in (26) corresponds to Schema 1:

Schema 1 (Head-Complement Schema)

head-complement-phrase \Rightarrow

$$\left[\begin{array}{l} \text{SYNSEM} \\ \text{HEAD-DTR} \\ \text{NON-HEAD-DTRS} \end{array} \left[\begin{array}{l} \text{LOC|CAT|COMPS } \boxed{1} \oplus \boxed{3} \\ \text{LEX } - \\ \text{SYNSEM|LOC|CAT|COMPS } \boxed{1} \oplus \langle \boxed{2} \rangle \oplus \boxed{3} \\ \left\langle \left[\text{SYNSEM } \boxed{2} \right] \right\rangle \end{array} \right] \right]$$

In this schema, the head daughter as well as the non-head daughters are represented as values of features (as value of HEAD-DTR and as element in the list under NON-HEAD-DTRS). Since there are also rules with more than one non-head daughters in HPSG grammars, the value of NON-HEAD-DTRS is a list. The surface ordering of the daughters in signs licensed by these kinds of schemata is not in any sense determined by the schemata themselves. Special linearization rules, which are factored out from the dominance schemata, ensure the correct serialization of constituents. Therefore, Schema 1 allows both head-complement as well as complement-head orderings. The sequence in which the arguments are combined with their head is not specified by the schema. The splitting of the lists with append allows the combination of any element of the COMPS list with the head. The only condition for the possibility of combining a head and an complement is the adjacency of the respective constituents. It is possible then to analyze (28) using Schema 1.

- (28) weil das Buch jeder kennt
 because the book everyone knows
 'because everyone knows the book'

This is shown in Figure 2.2. $\boxed{1}$ and $\boxed{3}$ can be lists containing elements or they can be the empty list. For languages that do not allow for scrambling either $\boxed{1}$ or $\boxed{3}$ will always be the empty list. For instance English and Danish combine the head with the complements in the order the elements are given in the COMPS list. Since $\boxed{1}$ is assumed to be the empty list for such languages, Schema 1 delivers the right result. The nice effect of this analysis is that languages that do not allow for scrambling have more constraints in their grammar (namely the additional constraint that $\boxed{1} = \langle \rangle$), while languages with less constrained constituent order have fewer constraints in their grammar. This should be compared with movement-

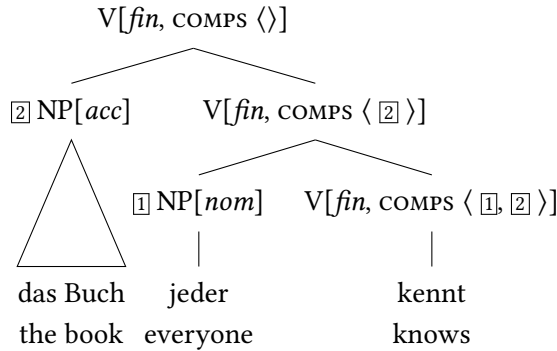


Figure 2.2: Analysis of *weil das Buch jeder kennt* ‘because everybody knows the book’

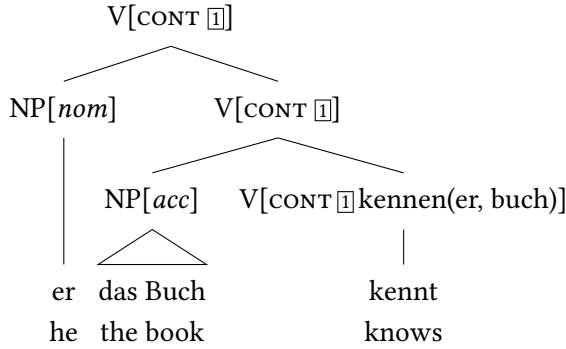
based analyses where less restrictive constituent order results in more complex analyses.

This analysis resembles Gunji’s analysis for Japanese (1986). Gunji suggests the use of a set-valued valence feature, which also results in a variable order of argument saturation. For a similar analysis in the terms of the Minimalist Program, see Fanselow (2001). Hoffman (1995: Section 3.1) and Steedman & Baldridge (2006) suggest respective Categorical Grammar analyses.

In the lexical item for *kennt* ‘knows’ in (25), the meaning of *kennt* is represented as the value of CONT. The Semantics Principle (Pollard & Sag 1994: 56) ensures that, in Head-Complement structures, the semantic contribution of the head is identified with the semantic contribution of the mother. In this way, it is ensured that the meaning of *er das Buch kennt* is present on the highest node in Figure 2.3. The association with the various arguments is already ensured by the corresponding co-indexation in the lexical entry of the verb.⁸

After considering the syntactic and semantic analysis of Head-Complement structures, I now turn to adjunct structures. Modifiers are treated as functors in HPSG. They select the head that they modify via the feature MOD. The adjunct can therefore determine the syntactic characteristics of the head that it modifies. Furthermore, it can access the semantic content of the head and embed this under its own. The analysis of adjuncts will be made clearer by examining the following example (29):

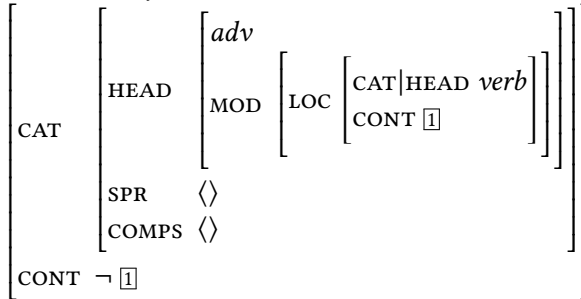
⁸The formula *kennen(er, buch)* is a radical simplification. It is not possible to go into the semantic contribution of definite NPs or the analysis of quantifiers here. See Copestake, Flickinger, Pollard & Sag (2005) for an analysis of scope phenomena in Minimal Recursion Semantics.

Figure 2.3: Analysis of *weil er das Buch kennt* ‘because he knows the book’

- (29) *weil er das Buch nicht kennt*
 because he the book not knows
 ‘because he doesn’t know the book’

nicht ‘not’ modifies *kennt* ‘knows’ and embeds the relation *kennen*(*er*, *buch*) under the negation. The semantic contribution of *nicht kennt* ‘not knows’ is therefore $\neg \text{kennen}(\text{er}, \text{buch})$. The lexical entry for *nicht* is shown in (30).

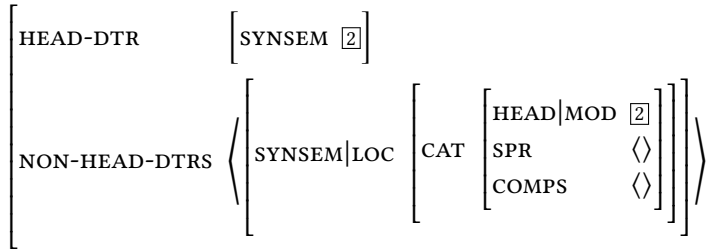
- (30) Lexical entry for *nicht* ‘not’:



This entry can modify a verb in head-adjunct structures which are licensed by Schema 2.

Schema 2 (Head-Adjunct Schema)

head-adjunct-phrase \Rightarrow



Pollard and Sag's Semantics Principle ensures that the semantic content in head-adjunct structures is contributed by the adjunct daughter. Figure 2.4 shows this analysis in detail.

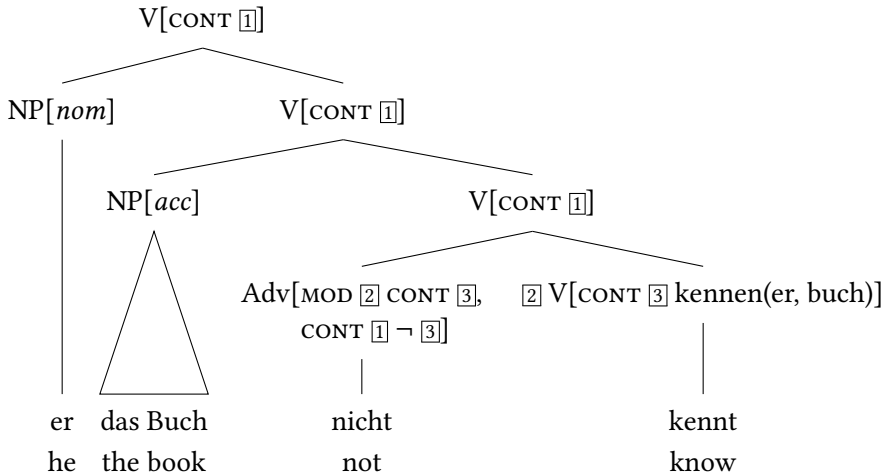


Figure 2.4: Analysis of *weil er das Buch nicht kennt* 'because he does not know the book'

The MOD value of the adjunct and the SYNSEM value of the verb are co-indexed by the Head-Adjunct Schema (2). Inside the lexical entry for *nicht*, the CONT value of the modified verb (3 in Figure 2.4) is co-indexed with the argument of \neg . The semantic content of *nicht* (1 \neg *kennen*(*er*, *buch*)) becomes the semantic content of the entire Head-Adjunct structure and is passed along the head path until it reaches the highest node.

After this recapitulation of some basic assumptions, the following section will present a verb-movement analysis for verb-initial word order in German.

2.2.2 V1

As is common practice in Transformational Grammar and its successive models (Bierwisch 1963: 34; Bach 1962; Reis 1974; Thiersch 1978: Chapter 1), I will assume that verb-first sentences have a structure that is parallel to the one of verb-final sentences and that an empty element fills the position occupied by the verb in verb-last sentences.⁹

A radically simplified variant of the transformational analysis of (31b) is presented in Figure 2.5.

- (31) a. dass er das Buch kennt
 that he the book knows
 ‘that he knows the book’
 b. Kennt_i er das Buch _{-i}?
 knows he the book
 ‘Does he know the book?’

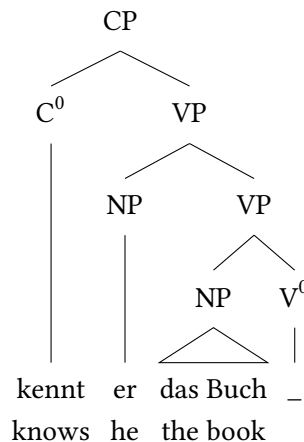


Figure 2.5: Analysis of *Kennt er das Buch?* ‘Does he know the book?’ with Move- α

⁹The alternative is that they are flat structures, which allow the verb to be positioned in both initial and final position (Uszkoreit 1987; Pollard 1996), or linearization analyses (Reape 1992; 1994; Müller 1999; 2002a; Kathol 1995; 2000). In linearization analyses, the domain in which constituents can be permuted is expanded so that, despite being a binary branching structure, verb-first and verb-final orderings can be derived. The differing possibilities will be discussed further in Chapter 6.

The verb is moved from verb-final position to C^0 .¹⁰ This movement can be viewed as creating a new tree structure out of another, i.e. as a derivation. In the analysis of (31b), two trees enter a relation with each other – the tree with verb-final ordering and the tree where the verb was moved into first position. One can alternatively assume a representational model where the original positions of elements are marked by traces (see Koster 1978: 1987: 235; Kolb & Thiersch 1991; Haider 1993: Section 1.4; Frey 1993: 14; Lohnstein 1993: 87–88, 177–178; Fordham & Crocker 1994: 38; Veenstra 1998: 58, for example). This kind of representational view is also assumed in HPSG. In HPSG analyses, verb-movement is modeled by a verb-trace in final position coupled with the percolation of the properties of the verb trace in the syntactic tree.

In what follows, I discuss another option for modeling verb-movement. The C-head in Figure 2.5 has different syntactic characteristics from V^0 in verb-final orders: the valence of the verb in final position does not correspond to the valence of the element in C. The functional head in C is combined with a VP (an IP in several works), whereas the verb in final structures requires a subject and an object. In HPSG, the connection between the element in V1-position and the actual verb can be captured by an analysis which assumes that there is a verb trace in verb-initial structures that has the same valence properties and the same semantic contribution as an overt finite verb in final position and is also present in the same position.¹¹ The element in initial-position is licensed by a lexical rule,

¹⁰In more recent analyses the verb is adjoined to C^0 . While V-to-c-movement analyses work well for German and Dutch they fail for other V2 languages that allow for the combination of complementizers with V2 clauses (Fanselow 2009a). This will be discussed in more detail in Subsection 2.2.5.

¹¹In the grammar developed in this book, it is impossible to say that a head follows or precedes its dependents if the head is empty. The reason is that the head daughter and the non-head daughters are the values of different features: the head daughter is the value of HEAD-DTR and the non-head daughters are members of the NON-HEAD-DTRS list. It is only the PHON values of the daughters that are serialized (Höhle 1994). So in a structure like $[NP_1 [NP_2 t]]$ one cannot tell whether NP_2 precedes t or follows it since in the AVM these two objects are just presented on top of each other and the phonology does not show any reflex of t that would help us to infer the order. Note however that t has the INITIAL value ‘–’ and hence the phonology of t is appended to the end of the phonology of NP_2 . It does not matter whether we append the empty string at the end or at the beginning of a list, but the INITIAL value of the head matters when NP_1 is combined with $[NP_2 t]$: the complex phrase $[NP_2 t]$ has to be serialized to the right of NP_1 . If both NP_1 and NP_2 contain phonological material, the material contributed by NP_1 will precede the material from NP_2 . So, we will always know that the trace is in a unit that contains other material and this unit is serialized as if there would be a visible head in it. This means that despite Höhle’s claim to the contrary traces can (roughly) be localized in structures.

which licenses a verb that takes the initial position and selects for a projection of the verb trace. To make this clearer, we will take a closer look at the sentence in (31b): the syntactic aspects of the analysis of (31b) are shown in Figure 2.6. In the

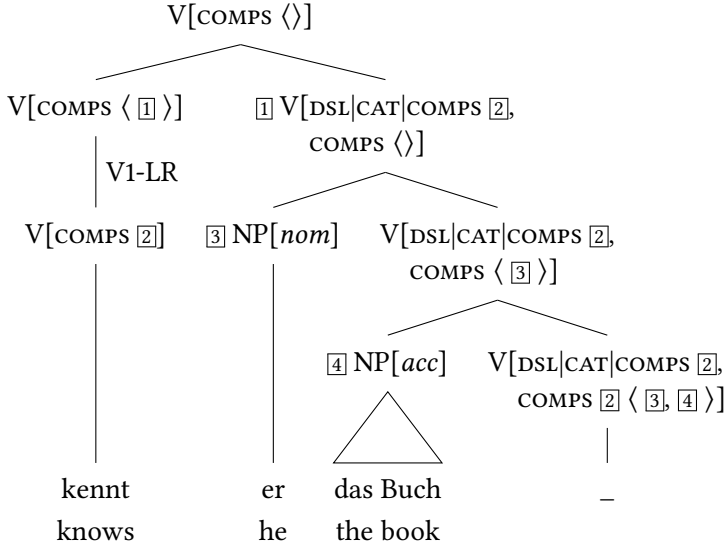


Figure 2.6: Analysis of *Kennt er das Buch?* ‘Does he know the book?’

verb trace, the COMPS value of the trace is co-indexed with the value of the COMPS feature under DSL. The feature DSL was introduced by Jacobson (1987) with the aim of describing head movement in inversion structures in English. DSL stands for *double slash* and is sometimes abbreviated as ‘//’ in figures.¹² Borsley (1989) adopted Jacobson’s idea and translated it into HPSG terms thereby showing how head movement in a HPSG variant of the CP/IP system can be modeled using DSL. The introduction of such a feature to HPSG in order to describe movement operations is motivated by the fact that this kind of movement is local, unlike the long-distance dependencies discussed in Section 2.2.3.

The verb trace in (32) takes on the role of the finite verb in the analysis of

Note that Ginzburg & Sag (2000) represent both head and non-head daughters in the same list. If one assumes that this list is ordered according to the surface order of the constituents, traces are linearized.

Traces will be shown in final position in the tree visualizations throughout this book.

¹²In addition to DSL, there is a SLASH feature that is used for the analysis of nonlocal dependencies. This will be explained in Section 2.2.3.

(31a).¹³

(32) Verb trace (valence information):

$$\left[\begin{array}{l} \text{PHON } \langle \rangle \\ \text{SYNSEM|LOC|CAT} \left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \textit{verb} \\ \text{DSL|CAT|COMPS } \boxed{1} \end{array} \right] \\ \text{COMPS } \boxed{1} \end{array} \right] \end{array} \right]$$

Since DSL is a head feature, it is passed on towards the top of the tree so that information about the valence of the verb trace is present at each projection. A special version of the finite verb takes the projection of the verb trace (($\boxed{1}$) in Figure 2.6) as its argument. As they are combined, it is checked whether the valence of the original verb ($\boxed{2}$) matches the valence of the verb trace (DSL|CAT|COMPS $\boxed{2}$).

The special lexical item for V1-ordering is licensed by the following lexical rule:¹⁴

¹³The SPR feature is ignored here. As will become clear later, the SPR value of the trace and the DSL feature are also shared. The SPR value of finite verbs is always the empty list in German and hence the SPR value of the trace is the empty list as well.

¹⁴I am adopting a view which integrates lexical rules into the formalism of HPSG and treats them as unary rules (Meurers 2001). Lexical rules are applied to stems or entire words (Müller 2002a). Verb-movement will – as in previous publications about verb-movement in HPSG – be described using lexical rules. The following data suggests, however, that it is appropriate to speak of unary syntactic rules rather than lexical rules:

- (i) Karl kennt und schätzt diesen Mann.
Karl knows and values this man
'Karl knows and values this man.'

(i) cannot be analyzed applying the verb-movement rule to each verb individually and then coordinating the result, since *kennen* 'to know' and *schätzen* 'to value' have different CONT values. The CONT value of the verb trace is determined by the CONT value of the verb in initial position. The coordination of two products of a lexical rule for verb-movement would not be allowed as the standard coordination theory of Pollard & Sag (1994: 202) states the valence requirements of both conjuncts be the same. Such a problem does not arise, however, if we apply a unary syntactic rule (parallel to (36)) to the result of the coordination.

(33) Lexical rule for verb in initial position (valence information):

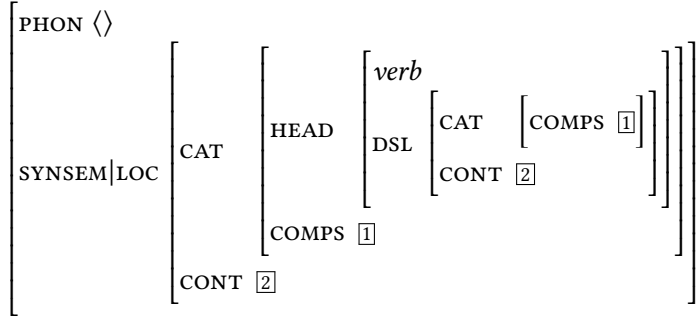
$$\left[\begin{array}{c} \text{SYNSEM} | \text{LOC } \boxed{1} \\ \left[\begin{array}{c} \text{CAT} | \text{HEAD} \left[\begin{array}{c} \text{verb} \\ \text{VFORM } \textit{fin} \\ \text{INITIAL } - \end{array} \right] \end{array} \right] \end{array} \right] \mapsto \\
 \left[\begin{array}{c} \text{SYNSEM} | \text{LOC} | \text{CAT} \\ \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{verb} \\ \text{VFORM } \textit{fin} \\ \text{INITIAL } + \end{array} \right] \\ \text{SPR } \langle \rangle \\ \text{COMPS } \left\langle \left[\begin{array}{c} \text{LOC} | \text{CAT} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{verb} \\ \text{DSL } \boxed{1} \end{array} \right] \\ \text{COMPS } \langle \rangle \end{array} \right] \right] \right\rangle \end{array} \right] \end{array} \right]$$

The verb licensed by this lexical rule selects the maximal projection of the verb trace which has the same local properties as the input verb.¹⁵ This is achieved by co-indexing the *LOCAL* value of the input verb and the *DSL* value of the selected verbal projection. Only finite verbs in final position (*INITIAL*–) can function as an input for this rule. The output is a verb in initial position (*INITIAL*+). Linearization rules make reference to the *INITIAL* feature and ensure the correct ordering of heads in local trees.

Nothing has been said about semantics so far. It is assumed that the verb trace also shares the semantic properties of the verb in initial position and that verb-initial clauses are interpreted like their verb-final counterparts (see the discussion of (8) on page 9). This can be modeled by threading the semantic contribution in parallel with the valence properties through the tree. (34) shows the verb trace enriched with semantic information:

¹⁵In principle one would have to specify the *SPR* value of the selected argument to be the empty list. However, since the *SPR* value of the trace is identical to the *SPR* value of the fronted verb and since fronted verbs are always finite and since finite verbs have the empty list as the *SPR* value, the *SPR* value of the complement may be left unspecified in the lexical rule. This is different for Danish and in the Danish equivalent of the lexical rule the *SPR* value has to be specified.

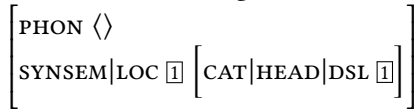
(34) Verb trace (Valence information and semantic content):



By co-indexing the CONT values, the trace behaves semantically just like the original verb, which is now in initial position.

If one allows cyclic feature structures, (34) can be represented in a more compact manner as in (35) (Meurers 2000: 207):

(35) Verb trace according to Meurers (2000: 207):



The fact that all LOCAL properties of a verb trace are represented under DSL is captured much more directly here. It is no longer necessary to have separate structural sharings or explicitly mention individual types and features under HEAD (as in (34)).

The Semantics Principle ensures that the CONT value is passed along the head projection during the combination of arguments towards the top of the tree. In the last step of the projection in Figure 2.6, the verb in initial position is the head and therefore the semantic content of this verb will be projected. In the lexical rule (36) for the verb in initial position, the semantic content of the projection of the trace in final position ([2]) is identified with the CONT value of the verb in initial position.

- (36) Lexical rule for verbs in initial position (valence und semantic contribution):

$$\left[\begin{array}{c} \text{SYNSEM|LOC } \boxed{1} \\ \left[\begin{array}{c} \text{CAT|HEAD} \\ \left[\begin{array}{c} \text{verb} \\ \text{VFORM } \textit{fin} \\ \text{INITIAL } - \end{array} \right] \end{array} \right] \end{array} \right] \mapsto \\
 \left[\begin{array}{c} \text{SYNSEM|LOC} \\ \left[\begin{array}{c} \text{CAT} \\ \left[\begin{array}{c} \text{HEAD} \\ \left[\begin{array}{c} \text{verb} \\ \text{VFORM } \textit{fin} \\ \text{INITIAL } + \end{array} \right] \\ \text{SPR } \langle \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \\ \left[\begin{array}{c} \text{LOC} \\ \left[\begin{array}{c} \text{CAT} \\ \left[\begin{array}{c} \text{HEAD} \\ \left[\begin{array}{c} \text{verb} \\ \text{DSL } \boxed{1} \end{array} \right] \\ \text{SPR } \langle \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \\ \text{CONT } \boxed{2} \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right]$$

Due to this combination, the semantic content of the verb trace projection is then taken over by the verb in initial position and, as per the Semantics Principle, becomes the semantic contribution of the entire construction. Figure 2.7 shows the semantic aspects of the verb-movement analysis with the trace in (35) and the lexical rule in (36).

Technically speaking, $\boxed{1}$ and $\boxed{2}$ in Figure 2.7 are identical. To make aid representation, they have been represented by different numbers. The identification of $\boxed{1}$ and $\boxed{2}$ is enforced by the identification of the information under *LOCAL* and *DSL* in the lexical entry of the trace (35), as *CONT* is a *LOCAL* feature.

The analysis in Figure 2.7 may seem somewhat complicated, since semantic information is passed on both via the *DSL* from the verb in initial position to the trace ($\boxed{1}$) and by the verb trace to the verb in initial position ($\boxed{2}$). However, once we consider examples with adjuncts, it will become clear that this seemingly complicated treatment is justified. The analysis of (37) is given in Figure 2.8.

- (37) Kennt er das Buch nicht?
 knows he the book not
 ‘Doesn’t he know the book?’

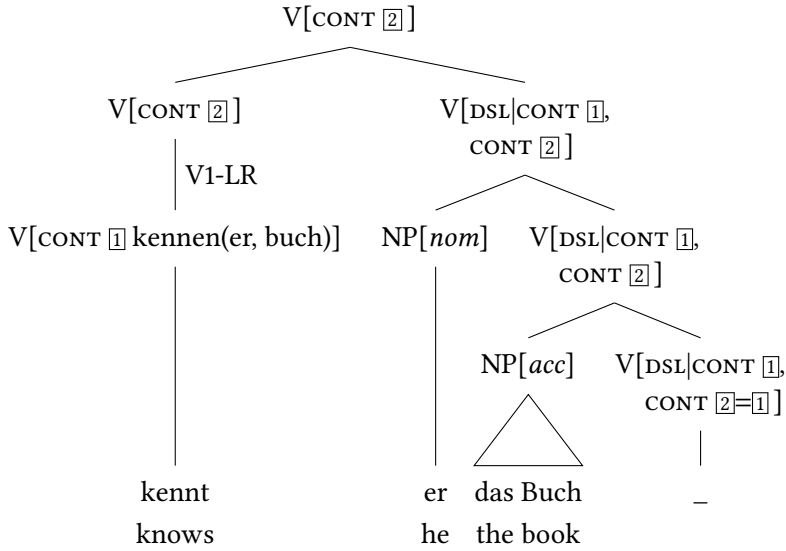


Figure 2.7: Analysis of *Kennt er das Buch?* 'Does he know the book?'

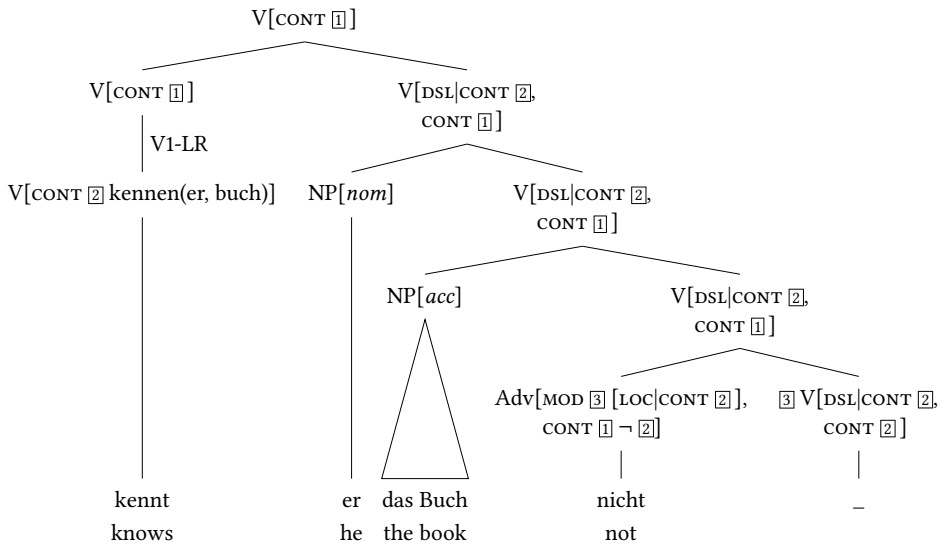


Figure 2.8: Analysis of *Kennt er das Buch nicht?* 'Doesn't he know the book?'

The initial verb *kennt*, which is licensed by a lexical rule, requires a verbal projection with a DSL|CONT value of *kennen*(x, y), where the x and y in the lexicon entries for *kennt* are already linked to arguments, which will later be filled by *er* and *das Buch*. The DSL|CONT value of the verbal projection is – due to DSL being a head feature – also restricted at the trace. At the trace, the CONT value is co-indexed with DSL|CONT value so that the trace has the same semantic representation as the verb *kennt*, which was the input for the verb-first lexical rule. The verb trace is then modified by the adjunct *nicht* and the meaning of the head-adjunct structure is passed up to the mother node (1). During the combination with its arguments, the meaning is then transmitted up to the maximal projection of the verb trace in Figure 2.8. The CONT value of this projection is identical to the CONT value of the initial verb due to the structure sharing in the lexical item for this verb, which is licensed by the lexical rule (36). Because the verb in first position is the head of the entire structure and it is a head-argument structure, the semantic content of the structure is identical to that of the V1-verb, i.e. 1 in Figure 2.8.

Finally, sentences such as (38) must be somehow ruled out:

- (38) * Kennt er das Buch kennt.
 knows he the book know

(38) could be analyzed in such a way that the first occurrence of *kennt* is the output of a verb-movement rule and the DSL value of the second *kennt* is unrestricted, so that the second *kennt* can take over the same role as the verb trace in our analysis. Generally speaking, it is not possible for all overtly realised verbs to demand that their DSL value be *none* since these verbs represent the input for the lexical rule for verb movement and the LOCAL value of the input verb is identified with the DSL value of the verb trace selected by the output verb. If all overt verbs had the DSL value *none*, it would lead to a contradiction during the combination with the verb trace since the trace has a specified DSL value (the trace is cyclic, therefore the value of LOC|CAT|HEAD|DSL|CAT|HEAD|DSL is not compatible with *none*). (38) is excluded by a restriction which states that a verb has to have the DSL value *none* when it is overtly realised and enters a syntactic structure. The desired result is achieved by the implication in (39):

$$(39) \left[\text{HEAD-DTR} \left[\begin{array}{l} \text{word} \\ \text{PHON } \textit{non-empty-list} \end{array} \right] \right] \Rightarrow \left[\text{SYNSEM|L|CAT|HEAD|DSL } \textit{none} \right]$$

This restriction differs from that of Meurers (2000: 207) and others in that the

HEAD-DAUGHTER in the antedecent must be of the type *word*. Without this restriction, the constraint could be applied to projections of the verb trace and thereby exclude well-formed sentences.

Following the discussion of the analysis of verb-first sentences, the next section focuses on the analysis of verb-second sentences.

2.2.3 V2

Verb-second sentences such as (40b) are, as we have already mentioned, related to verb-first sentences such as (40a) in most German grammars.¹⁶

- (40) a. Kennt er das Buch?
 knows he the book
 ‘Does he know the book?’
 b. Das Buch_i kennt _i er.
 the book knows he
 ‘He knows the book’

In the second example, *das Buch* is situated in the prefield. The position in the middle field, where the object could also occur, is empty. This position is most often represented by ‘_’. (41) shows that elements which are dependent on an embedded head can occur in the pre-field:

- (41) [Um zwei Millionen Mark]_i soll er versucht haben, [eine
 of two million Deutschmarks should he tried have an
 Versicherung _i zu betrügen].¹⁷
 insurance.company to defraud
 ‘He supposedly tried to defraud an insurance company of two million
 Deutschmarks’

Therefore, occupying the pre-field (fronting) creates a long-distance dependency. To deal with long-distance dependencies, Pollard & Sag (1994: Chapter 4)

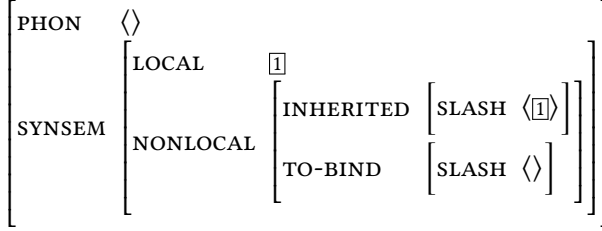
¹⁶Kathol (1995: Chapter 6.3), Groß & Osborne (2009), and Wetta (2011) are exceptions. These authors analyze short fronting as in (40b) as an alternative ordering for the constituents in (40a). They do, however, assume long-distance dependencies for sentences such as (41). Kathol (2001) revised his treatment and now assumes a uniform analysis of V2 phenomena in German.

Approaches that treat local frontings different are discussed in more detail in Section 6.

¹⁷taz, 04.05.2001, 20

suggest a silent element which introduces a non-local dependency:¹⁸

(42) Trace for the description of long-distance dependencies:



This kind of trace can stand for a complement or an adjunct depending on the context. The characteristics of the object, which are represented under `SYNSEM|LOCAL`, are entered into the `SLASH` list under `SYNSEM|NONLOCAL|INHERITED|SLASH`. The `NONLOC` Principle ensures the percolation of non-local features from the daughter nodes of complex signs to their mother nodes.

Principle 1 (Nonlocal Feature Principle)

The `NONLOC|INHERITED` value of a phrasal sign is the union of the `NONLOC|INHERITED` values of its daughters minus the `NONLOC|TO-BIND` value of the daughter of the head.

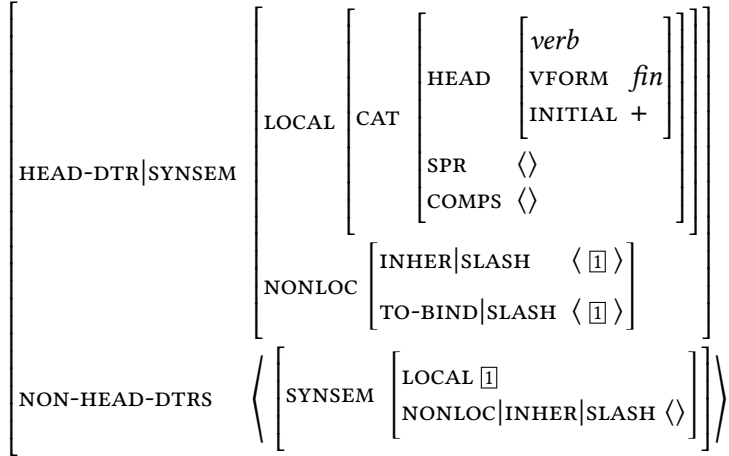
A `SLASH` element can be bound off by the Filler-Head Schema.

¹⁸In Chapter 9, Pollard & Sag (1994) introduce a lexical rule for complement extraction. It is possible to describe long-distance dependencies with this rule and avoid using a phonologically null element. A further alternative would be unary projections, as I suggest in (Müller 1999: Chapter 9, 10, 18). A discussion of the alternatives can be found in (Müller 2002a: Chapter 6.2.5.1) and in Chapter 7 of this book. In more recent works in HPSG, relational argument realization principles and lexical analyses are assumed for extraction (Bouma, Malouf & Sag 2001). See Levine & Hukari (2006) for a discussion of such relational approaches.

For phenomena such as relative and interrogative clauses, one needs the features `REL` and `QUE` in addition to `SLASH`. These features are omitted in what follows.

Schema 3 (Filler-Head Schema (for German))

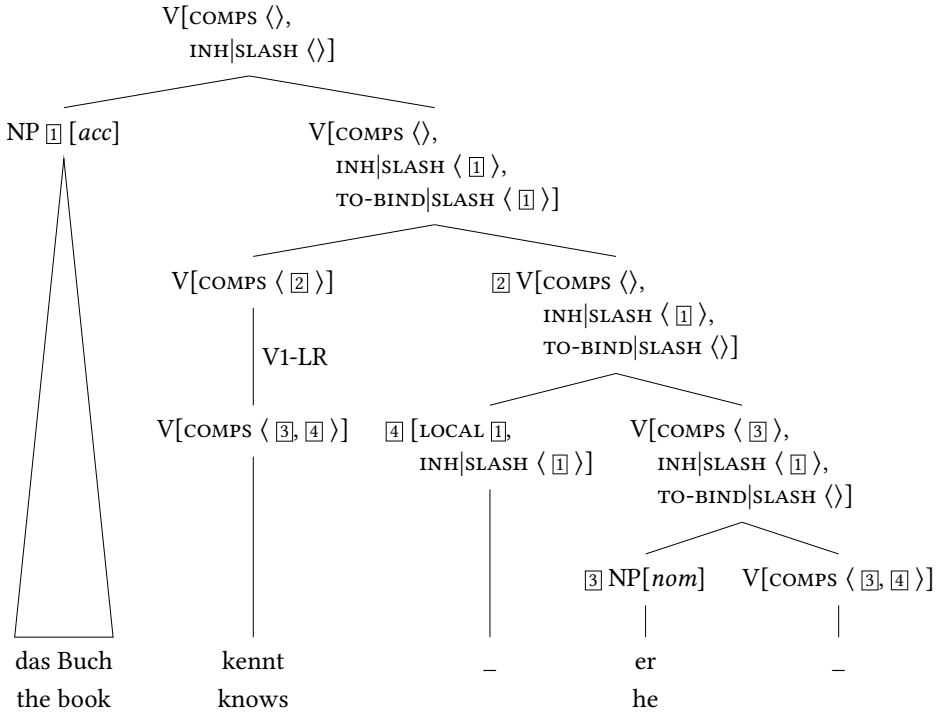
head-fillerphrase \Rightarrow



This schema describes structures in which finite clauses with the verb in initial position (INITIAL+) and with an element in INHER|SLASH ($\boxed{1}$) are combined with a phrase with matching LOCAL properties. In example (40b), *kennt er* ‘knows he’ is the finite clause with the corresponding element in SLASH and *das Buch* ‘the book’ is the filler. Figure 2.9 shows the analysis for (40b).

The verb movement trace for *kennt* ‘knows’ is combined with an extraction trace. The extraction trace in the example is the accusative object. The accusative object is described in the COMPS list of the verb and the information about the properties of the required NP are at the same time present in the extraction trace under LOC and INHER|SLASH. The SLASH information is passed up the tree until it reaches the point where the projection is combined with a filler (F). The Head-Filler Schema instantiates the TO-BIND|SLASH value of the head daughter. The Nonlocal Feature Principle then comes into play to cause the binding off of the SLASH value, which percolated from the extraction trace, that is, the SLASH value is no longer passed along up the tree. The Head-Filler Schema then makes sure that the filler daughter (the non-head daughter in the schema) has exactly the same LOC value as the extraction trace. It is only the accusative nominal phrase which is a possible candidate for a filler in our example.

It is worth noting that Schema 3 does not say anything about the valence of the filler daughter. The form of the filler daughter is only restricted by the specification of the properties of complements of lexical heads. Therefore, non-maximal projections are also licensed as fillers in long-distance dependencies by

Figure 2.9: Analysis of *Das Buch kennt er.* 'He knew the book.'

our schema. The theory presented here does not correspond to the rules of \bar{X} theory (Jackendoff 1977). This is however not necessarily a negative point, since \bar{X} theory does not restrict the generative capacity of grammars in any way as soon as empty elements are permitted (Pullum 1985; Kornai & Pullum 1990). The fact that non-maximal projections are possible in sentence-initial position plays a central role for the analysis of partial verb phrase fronting presented in the following section and also for the analysis of putative multiple fronting, which are discussed in Chapter 3.

Note also that the INH|SLASH value of the non-head daughter is specified to be the empty list. As Müller (1999: 96) pointed out, this excludes the analyses in (43):

- (43) a. * [Von wem]_i [_S [ein Bild _{-i}]_j hast du _{-j} gemalt]?
 of who a picture have you painted
 b. * [Von wem]_i denkst du, [_S [ein Bild _{-i}]_j habe ich _{-j} gemalt]?
 of who think you a picture have I painted

The impossibility to extract from constituents that are extracted themselves is sometimes referred to as *freezing*.¹⁹

In the following, I will present the analysis proposed by Hinrichs & Nakazawa (1994a) for predicate complexes as well as the analysis of fronting of partial constituents based on Müller (1997; 1999; 2002a); Meurers (1999). These analyses have become established within the HPSG paradigm and alternative HPSG analyses will not be discussed here. For such a discussion, the reader is referred to Müller (1999: Chapter 18.3) and Müller (2002a: Chapter 2.3).

2.2.4 On the verbal complex and partial verb phrase fronting

In various works (for instance Uszkoreit 1987), it is assumed that an auxiliary verb takes a verb phrase as its complement.

- (44) dass Karl [[das Buch lesen] können] wird]
 that Karl the book read can will
 ‘that Karl will be able to read the book’

However, if one assumes such structures, it is difficult to explain the ordering of (45) because the auxiliary *wird* is located between two elements of the verb phrase.

- (45) dass Karl das Buch wird lesen können
 that Karl the book will read can
 ‘that Karl will be able to read the book.’

Furthermore, the sentences in (46) are not ruled out by such an analysis since *das Buch lesen* forms a phrase which can be moved left in the middle-field or appear in a so-called pied-piping construction with a relative clause.

- (46) a. * dass das Buch lesen Karl wird
 that the book read Karl will

¹⁹Note that extraposition is also a nonlocal dependency phenomenon (Müller 2004b). As I showed in Müller (1999: 217), extraposition out of fronted constituents is possible.

(i) [Eine Geschichte erzählen] wird uns der Mann jetzt gleich, die viele von
 a story tell will us the man now immediately which many of
 Ihnen erstaunen wird.
 you surprise will

‘The man will tell us a story now which will surprise many of you.’ (Müller 1999: 217)

This is accounted for by assuming that extraposition is analyzed with the feature *EXTRA* (Keller 1994; 1995; Müller 1999: Section 13.2). Information in *EXTRA* can be passed up independently of specifications of *SLASH* values. See Section 6.10 for more on freezing.

- b. * das Buch, das lesen Karl wird
the book, that read Karl will

Hinrichs & Nakazawa (1994a) therefore suggest using a special dominance schema which ensures that (certain) verbal complements are saturated before non-verbal ones. This means that, in the analysis of (18a) and (18b), *lesen* is first combined with *können* and the resulting verbal complex is then combined with *wird*:

- (47) daß Karl das Buch [[lesen können] wird].
that Karl the book read can will

wird can be placed to the right of the embedded verbal complex (as in (18a)), or indeed to the left as in (18b). After the construction of the verbal complex *lesen können wird*, it is then combined with the arguments of the involved verbs, that is with *Karl* and *das Buch*.²⁰

There are also coordination data, such as the example in (48), which support this kind of approach.

- (48) Ich liebte ihn, und ich fühlte, daß er mich auch geliebt hat oder doch,
I loved him and I felt that he me also loved had or PRT
daß er mich hätte lieben wollen oder lieben müssen.²¹
that he me would.have love want or love must.
'I loved him and felt that he loved me too, or at least he would have wanted to love me or would have had to.'

The following schema, which is derived from the one suggested by Hinrichs and Nakazawa, licenses predicate complexes:

Schema 4 (Schema for predicate complexes)

head-clusterphrase \Rightarrow

$$\left[\begin{array}{l} \text{SYNSEM} \quad \left[\text{LOC} | \text{CAT} | \text{COMPS } \boxed{1} \right] \\ \text{HEAD-DTR} \quad \left[\text{SYNSEM} | \text{LOC} | \text{CAT} | \text{COMPS } \boxed{1} \oplus \langle \boxed{2} \rangle \right] \\ \text{NONHEAD-DTRS} \quad \left\langle \left[\text{SYNSEM } \boxed{2} \right] \right\rangle \end{array} \right]$$

²⁰This kind of structure has already been suggested by Johnson (1986) in connection with an analysis of partial verb phrase fronting.

²¹(Hoberg 1981: 36)

I will assume the representation in (49) for the auxiliary verb *werden*:²²

- (49) *werden* (Future auxiliary):
- $$\left[\begin{array}{l} \textit{cat} \\ \text{HEAD} \quad \textit{verb} \\ \text{COMPS} \quad \boxed{1} \oplus \langle V[\text{LEX+}, \textit{bse}, \text{COMPS } \boxed{1}] \rangle \end{array} \right]$$

werden selects a verb in its *bse* form, that is an infinitive without *zu* ‘to’.

In example (50), *wird* takes over the partial specification of the arguments *Karl* and *mir* ‘me’ from *helfen* ‘to help’.

- (50) *dass Karl mir helfen wird*
 that Karl me help will
 ‘that Karl will help me’

This argument attraction is made possible by the structural sharing expressed by the box $\boxed{1}$ in (49). The *COMPS* list of *wird helfen* ‘will help’ therefore is identical with the *COMPS* list for *hilft* ‘helps’. The combination of *helfen* ‘help’ and *wird* ‘will’ is shown in Figure 2.10.

Auxiliaries are like raising verbs: They do not assign semantic roles to either subjects or complements. For this reason, it is not surprising that $\boxed{1}$ in (49) can be instantiated by the empty list:

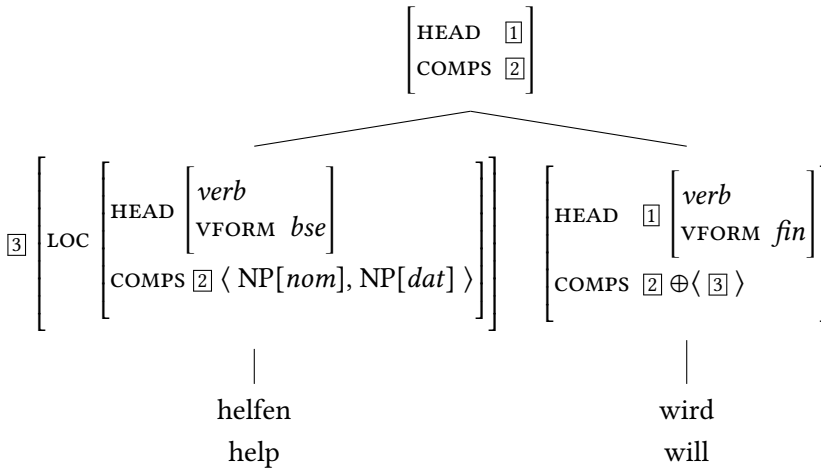
- (51) *Morgen wird getanzt werden.*
 tomorrow will danced become
 ‘There will be dancing tomorrow.’

In (51), subjectless construction created by passivization (*getanzt werden*) has been embedded under a future auxiliary.

Spurious ambiguities are ruled out by the specification of the *LEX* value of the embedded verbal complex in (49). Without such a specification all three structures in (52) would be admitted:

- (52) a. *er seiner Tochter ein Märchen [erzählen wird]*
 he his daughter a fairy.tale tell will
 ‘he will tell his daughter a fairy tale’

²²Pollard (1996) and Kiss (1992) have suggested that the subject of non-finite verbs is better represented as an element in a separate list (*SUBJ*) rather than in the *COMPS* list of the verb. For reasons of simplicity, I have placed the subjects of both finite and non-finite verbs in the *COMPS* list. The separate representation of infinite subjects predicts that subjects cannot occur in projections of non-finite verbs, unless one formulates special rules which would license such combinations.

Figure 2.10: Analysis of *helfen wird* ‘will help’

- b. er seiner Tochter [[ein Märchen erzählen] wird]]
- c. er [[seiner Tochter ein Märchen erzählen] wird]]

The LEX feature ensures that *erzählen* is combined with *wird* before *erzählen* is combined with its arguments. Since the mother node in head-complement structures is specified as LEX–, the projections of *erzählen* in (52b–c) cannot be combined with *wird*.

The LEX value of the mother in predicate complex structures – unlike in head-argument structures (see Schema 1 on page 21) – is not quite as restricted since predicate complexes can be embedded under different verbs and subsequently form a predicate complex with these, as shown by (53).

- (53) dass er dem Mann [[geholffen haben] wird]
 that he the man helped have will
 ‘that he will have helped the man’

If we want to rule out spurious ambiguities, we have to make sure that sentences such as (53) can only be analyzed as shown in (53) and that an analysis such as (54) is not possible.

- (54) dass er dem Mann [geholffen [haben wird]]
 that he the man helped have will

In the analysis of (54), the verbal argument of *haben* ‘have’ is raised to the argument of the complex *haben wird* ‘have will’. The complex *haben wird* ‘have will’

is then combined with *geholffen* ‘helped’ via the Head-Argument Schema. The analysis in (54) can be ruled out if one restricts the kind of elements which can be raised in the lexicon entries for raising predicates. Furthermore, we need an additional condition for (49), namely that [1] only contains fully saturated, non-predicative elements with the LEX value –. In formal terms, this can be expressed as a restriction on [1]:²³

$$(55) \text{ list_of_non_c_forming_synsems}(\langle \rangle).$$

$$\text{list_of_non_c_forming_synsems}\left(\left\langle \left[\begin{array}{l|l} \text{LOC} & \text{CAT} \\ \hline \text{HEAD} & \text{PRD} - \\ \text{COMPS} & \langle \rangle \end{array} \right] \mid [2] \right\rangle \right) :=$$

$$\text{list_of_non_c_forming_synsems}([2]).$$

A list consists of elements which do not form a predicate complex when the list is empty (first clause), or when the list starts with an element that has an empty COMPS list, a LEX value and PRD value of ‘–’ and when the rest of the list ([2]) is itself a list_of_non_c_forming_synsems.²⁴ The PRD feature was introduced by Pollard & Sag (1987: 64–67) for means of differentiating predicative and non-predicative elements.

At a later point, I will explain why this restriction not only plays a role for excluding spurious ambiguities, but also for the exclusion of certain impossible frontings. Figure 2.11 shows in detail how the analysis of (53) works.

²³Bouma & van Noord (1998) formulate an equivalent restriction. They differentiate between an *Inner Zone* and *Outer Zone* in a sentence. The *Inner Zone* is the predicate complex. Elements which are marked as belonging to the *Inner Zone* by the governing head may not be raised.

In light of this restriction for raised elements, my criticism (Müller 1999: 351–352) of Kiss’ treatment of obligatory coherence as a subcase of optional coherence (Kiss 1995a: 183) is rendered obsolete: One lexical item suffices for optionally coherent verbs in the present analysis.

²⁴It is not possible to avoid mentioning the LEX value, as embedded intransitive verbs have an empty valence list since the subject of non-finite verbs is represented separately. The LEX value of intransitive verbs is not specified in the lexicon. They can therefore occur in positions, where only phrases are permitted (in so-called incoherent constructions (Bech 1955)) as well as in positions in which only lexical elements are allowed (in coherent constructions). This is also the reason for the fact that the LEX value of the mother in predicate complex structures is not specified as LEX+ (as is the case in the analyses of Hinrichs & Nakazawa 1994a; De Kuthy & Meurers 2001) since combinations of verbs which embed an intransitive verb may be fully saturated. Such fully saturated verbal complexes may form an incoherent construction with a matrix verb. The LEX value of verbal complexes is therefore only constrained by the superordinate verb.

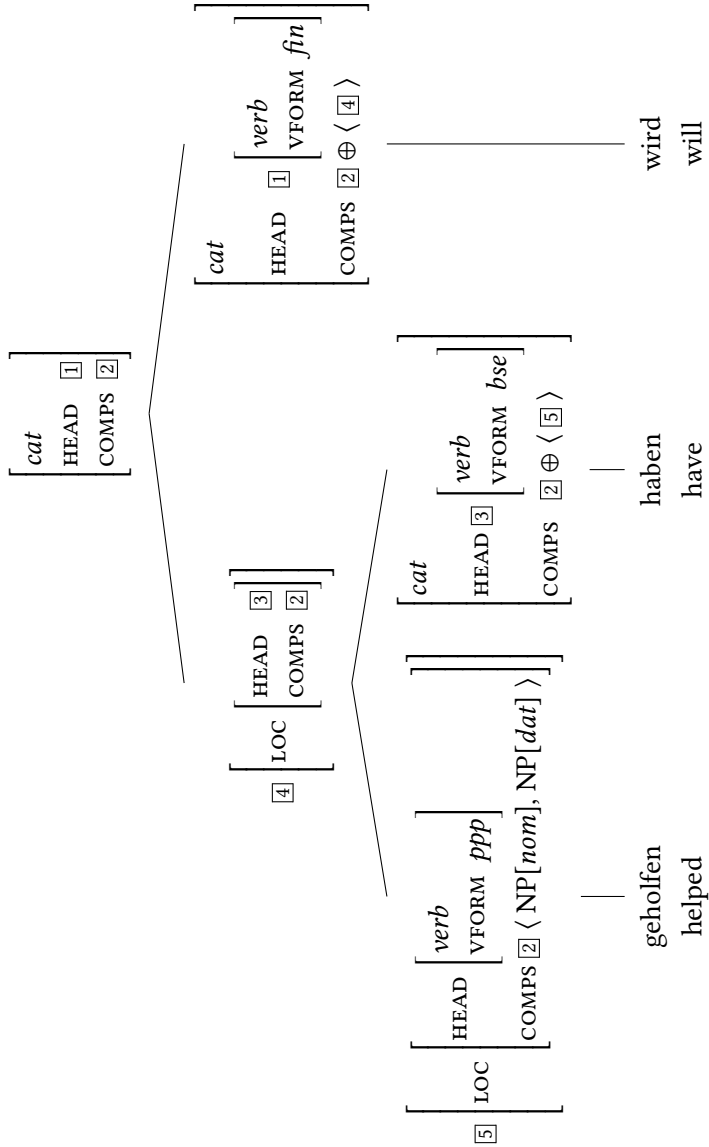


Figure 2.11: Analysis of the verbal complex in *dass Karl dem Mann geholfen haben wird* ‘that Karl will have helped the man’

The perfect auxiliary *haben* embeds the past participle *geholffen* (a verb with *vFORM ppp*). It adopts the arguments of this verb ([2]) as its own. The resulting verbal complex has the same valence as *geholffen*. This complex is embedded under *wird*. *wird* also attracts the arguments of the embedded complex so that the entire complex *geholffen haben wird* requires the same arguments as *geholffen*.

At first glance, it may seem problematic that we need phrases such as *ein Märchen erzählen* ‘to tell a fairy tale’ for sentences in which this group of words appears in first position. While we want to exclude this phrase as a complement in (52b), it needs to act as a binder for the long-distance dependency of fronting in (56):

- (56) Ein Märchen erzählen wird er ihr müssen.
 a fairy.tale tell will he her must
 ‘He will have to read her a fairy tale’

Sentences such as (56) are unproblematic if *LEX* is represented under *SYNSEM*, i.e. outside of *LOCAL*, unlike Pollard & Sag (1987) where *LEX* was represented under *CAT* – that is, inside *LOCAL* (Höhle 1994; Müller 1997; 1999; 2002a; Meurers 1999).

Due to the fact that a filler in a long-distance dependency only shares the features of the trace which are under *LOCAL*, a verb can require an embedded trace to have the *LEX* value +. The *LEX* value of the trace does not have to be identical to the *LEX* value of the constituent in initial position. This means that word groupings with a *LEX* value of – are possible fillers as well.²⁵ Figure 2.12 shows the analysis of (57).

- (57) Seiner Tochter erzählen wird er das Märchen.
 his daughter tell will he the fairy.tale
 ‘He will read his daughter the fairy tale’

Ungrammatical sentences such as (58) are ruled out by the condition in (55).

- (58) * Müssen wird er ihr ein Märchen erzählen.
 must will he her a fairy.tale tell

²⁵This means that it is not wise to formulate a structure preserving principle for grammars of HPSG, which states that a moved constituent has to be identical to its trace. (See e.g., Emonds (1976) for his formulation of this kind of principle for transformations). This kind of structure preserving principle does not make sense for HPSG-grammars, as overt realizations mostly differ from their traces in that the overt realizations have daughters, whereas traces do not. In HPSG grammars, only information under *LOCAL* is normally separated. Traces and fillers can have different values with respect to everything else (*PHON*, *HEAD-DTR*, *NON-HEAD-DTR*, *SYNSEM|NONLOCAL*, *SYNSEM|LEX*, ...). In order to prevent overgeneration, there are general conditions on extraction which make reference to local contexts.

Wird requires an infinitive in the *bse* form and then attracts its arguments. The attracted elements must be LEX−. Since *müssen* selects *erzählen* and requires it to be LEX +, it cannot be attracted. This explains why a structure such as (59) is ruled out:

- (59) *Müssen_i wird_j er ihr ein Märchen [erzählen [_i _j]].
 must will he her a fairy.tale tell

For more on this, see the discussion of (54) on page 41.

The analysis in (60) is ruled out by a general condition which bans extraction traces in head positions.

- (60) *Müssen_i wird_j er ihr ein Märchen [[erzählen _i] _j].
 must will he her a fairy.tale tell

The contrast in (61) can be explained by the fact that in (61a) a predicative PP has to be attracted, which is not the case in (61b).

- (61) a. #Halten wird er ihn für den Präsidenten.
 hold will he him for the president
 ‘He will think he is the president’
 b. Interessieren wird er sich für den Präsidenten.
 be.interested will he REFL for the president
 ‘He will be interested in the president’

The analysis presented is most certainly compatible with the analysis presented in Müller (2002a: Chapter 2) of constructions such as *halten für* as complex predicates.

In the Principles and Parameters Framework, fronting of incomplete projections is often analyzed as remnant movement (see G. Müller 1996a; 1998; 2014). De Kuthy (2002), De Kuthy & Meurers (2001) and Fanselow (2002) have shown however that remnant movement analyses face empirical problems which argument composition approaches as the one suggested here do not.

2.2.5 Verb movement and extraction in other Germanic languages

2.2.5.1 Verb movement

The Subsections 2.2.2 and 2.2.3 provide an analysis of the verb position in German. It is in some sense similar to the GB analysis of Reis (1974), Koster (1975), (Thiersch 1978: Chapter 1) and (denBesten) where it is assumed that the finite

verb moves into the C position. See also Figure 2.5. The V-to-C movement analysis of verb initial sentences in German and Dutch was motivated by the observation that the finite verb and the complementizer are in complementary distribution: if the complementizer is present the verb may not be fronted. So it was assumed that the verb moves into the complementizer position, provided it is empty. The drawbacks of this proposal will be discussed in Section 2.3.1 in more detail. This section deals with one aspect: there are other V2 languages that have complementizers that appear together with V2 sentences (Vikner95a; Bhatt99a; Fanselow 2009a: 87). Analyses that assume that a finite verb moves into the position of a complementizer do not extend to such languages. This shows that the V-to-C analysis does not capture the verb placement phenomenon in its whole breadth. In Section ?? claimed that the HPSG analysis is similar to the GB analysis but the similarity does not extend to the problematic aspects. The HPSG analysis captures the similarity between complementizers and finite verbs in German by assigning verbs in initial position a valence frame that is almost identical to the one of a complementizer. Both complementizer and initial finite verb select a verb final finite clause. The only difference between complementizer and initial finite verb is that the former requires that the finite verb is realized within the selected clause (DSL *none*) while the latter requires the verb to be missing (DSL is an object of type *local*).

Now, the analysis suggested here is different from the V-to-C analysis in that it is compatible with languages like Yiddish in which a complementizer is combined with a V2 sentence. (62) shows a Yiddish example:

- (62) Ikh meyn az haynt hot Max geleyent dos bukh.²⁶ (Yiddish)
 I think that today has Max read the book
 ‘I think that Max has read the book today.’

The analysis of the CP in the example is shown in Figure 2.13. I assume that adverbs attach to VPs in SOV languages like English and Danish. The adverb is extracted in (62), so Figure 2.13 shows a trace in the adverb position following the VP. The information about the adverb gap is passed up in the tree until it is bound off by the adverb in front of the finite verb. The perfect auxiliary is realized adjacent to the VP it embeds but since the sentence in (62) is a verb second sentence, the verb appears in initial position, that is, to the left of the subject. The normal position of the verb is taken by the verb trace. Information about the missing verb is projected from the verb trace to the VP and the S level. The finite verb in initial position takes a clause from which itself is missing. The

²⁶Diesing (1990: 58).

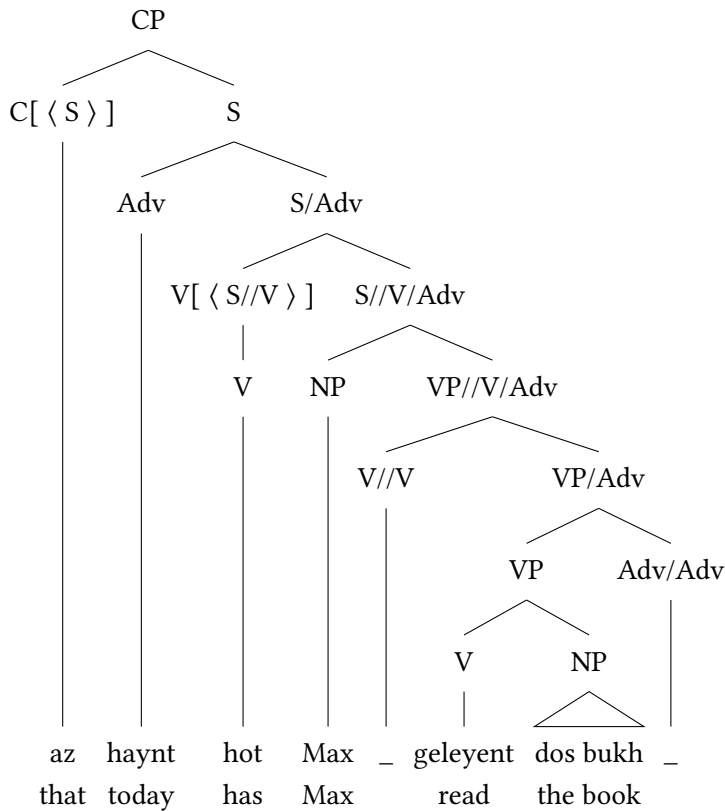


Figure 2.13: Analysis of the Yiddish sentence *az haynt hot Max geleyent dos bukh* ‘that Max has read the book today’

result of the combination is S/Adv, that is, a sentence with an adverb gap. The adverb is combined with the S/Adv and binds off the gap information. The result of the combination is an S. This S is the argument of the complementizer and the result of the combination of complementizer and S is a CP.

The difference between the German and the Yiddish complementizer is that the German complementizer selects a finite clause with the verb in final position, while the Yiddish complementizer selects a V2 clause. As is clear from Figure 2.13 an analysis that assumes that the finite verb moves to C would run into trouble unless one assumes that *az* ‘that’ embeds a CP. The analysis developed here does not have this problem and extend easily to other V2 languages. I discuss the analysis of other Germanic languages in more detail in Müller (2021).

2.2.5.2 Extraction

Fanselow (2009a) compares English with German and notes that a full sentence like *John came* in (63a) can be combined with the adverbial *yesterday*, while the same is impossible in German, as (63b) shows:

- (63) a. Yesterday, John came. (English)
 b. * Gestern John kam.
 yesterday John came

Fanselow, working in a Minimalist setting, argues that the difference in (63) is due to the fact that *John came* is a TP while *John kam* is a CP in German. In the analysis suggested here, *kam* ‘came’ is a sentence with fully saturated valence requirements and one element in SLASH. This is bound off by *John* to form the V2 clause *John kam*. Since the Head-Filler Schema allows for exactly one element in SLASH and binds off this element, the SLASH list of the mother is the empty list and hence there is no way to combine *gestern* as a filler with *John kam*. Since adverbials modify verbs in final position (INITIAL –) and since *John kam* is head-initial (INITIAL +) a combination via Head-Adjunct Schema is also ruled out.

Pollard & Sag (1994) suggested analyzing *John came* as a fully saturated verbal projection. It may contain a gap and if it does it is possible to combine *John came* with the filler *yesterday*. The Filler-Head Schema is rather similar for English and German. The difference between the two languages lies in the way of building verb initial projections that can be used in Filler-Head structures: while German and other Germanic languages involve verb movement, English is SVO and the combination of the head with its objects and subjects is licensed directly. For German it is sufficient to require the verbal projection to be INITIAL +. Since only verbs that underwent verb fronting are INITIAL + this captures the data correctly. For SVO+V2 languages this would not be sufficient since verbs are classified as INITIAL + in VO languages anyway. Here an additional distinction INVERTED+/- is needed. In V2 Filler-Head structures the head daughter must be a verbal projection with a fronted verb, that is, INVERTED+.

While the modification of *John kam* by *gestern* is excluded in German due to the fact that adjuncts modify INITIAL – verbal projections, this sequence is excluded for SVO languages since adjuncts modify VPs rather than complete sentences in these languages.

2.3 Alternatives

2.3.1 V to (I to) C movement

The preceding subsections provide an analysis for constituent order in German. It is in some sense similar to the GB analysis of (Thiersch 1978: Chapter 1) and (denBesten) where it is assumed that the finite verb moves into the C position. See also Figure 2.5. While this somehow captures the idea that complementizers and finite verbs in initial position share certain properties (Höhle 1997) the V-to-C analysis has several problematic aspects, as Fanselow (2009b) points out.

2.3.2 Squeezing in

Bierwisch (1963: 34) suggested that V2 sentences are accounted for by assuming that the verb is “squeezed in” into the sentence after the first constituent. As Fanselow (2009b) notes, this nicely explains the observation by Haider, Frey and Fanselow that the element in the *Vorfeld* basically has the same information structural status as it could have in the left-most *Mittelfeld* position. However, as also noted by Fanselow (2009a) there is a problem with examples like (64). While certain elements may take the first position in the *Mittelfeld*, they are excluded from appearing in the *Vorfeld*.

(64) a.

In a fronting proposal like the one suggested here, one can exclude certain elements from entering nonlocal dependencies. This is impossible in a squeezing-in approach since the *Mittelfeld* constituent would not move. It would stay in its original position and it would just be the finite verb that would be inserted between the first and the second element in the *Mittelfeld*.

This is an empirical argument against Bierwisch’s analysis. There is also a technical argument. If it could be shown that the squeezing in analysis is the only sensible analysis of the phenomenon is the squeezing in analysis, non-transformational frameworks would be in trouble since they usually do not assume that there are certain structures that can be broken up by other material that is inserted in the middle in later steps of an analysis.

Furthermore, Reis (1980: Section 2.2) noted that certain elements can be fronted without being able to occur in the left-most position in the *Mittelfeld*:

(65) a. Verehrt hat er ihn.
 adored has he him
 ‘He has adored him.’

- b. * [dass] verehrt er ihn hat
that adored he him has
- c. Das alles erwähnte der Autor. Nicht hat er hingegen
this all mentioned the author not has he however
berücksichtigt, dass ...
taken.into.account that
'The author mentioned all this, but he did not take into account that ...'
- d. * [dass] nicht er hingegen berücksichtigt hat, dass ...
that not he however taken.into.account has that
- e. [dass] er hingegen nicht berücksichtigt hat, dass ...
that he however not taken.into.account has that

In a squeezing in approach the order *verehrt er ihn hat* 'adored he him has' would have to be derived and then the auxiliary would move between *verehrt* and *er*. Similarly, the sequence *nicht er hingegen berücksichtigt hat* 'not he however taken.into.account has' would be the basis for squeezing the auxiliary between *nicht* and *er*. This sequence is inappropriate with the intended reading. The only reading that is acceptable for (65d) is the constituent negation of *er* 'he'. The correct order with the verb in final position is (65e).

2.3.3 Reprojection

As Fanselow (2009a: 93) and others noted, the adjunction to C analysis that was suggested in GB is excluded in Minimalist accounts for theory internal technical reasons.

What is suggested instead is something that is called *reprojection* or *Remerge* (Surányi 2005; Fanselow 2009a). It is assumed that a head is realized at a different location, leaving a trace at the original position. In the new position the head selects the projection from which it was moved. One such analysis is provided in Figure 2.14. The proposals are never worked out in detail. For instance it is unclear why the fronted head selects for the phrase it is missing from or if it is not selection what else would license the combination of fronted element and projection of the trace of the head. It is not explained why the head is governing in another direction once fronted. Fanselow (2009a: 105) suggests that "The verb possesses the checking feature and feature to be checked at the same time (the probe and the goal are identical)". But it is unclear what "at the same time" means. The two instances of *aime* in Figure 2.15 cannot be identical. If they were both

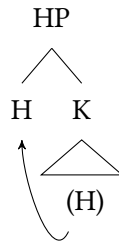


Figure 2.14: Head movement as reprojection according to Surányi (2005)

had to have a checking feature and a feature to be checked. This would result in a situation in which half of the features of the lower instance and half of the features of the upper instance could not be used in the derivation. So there

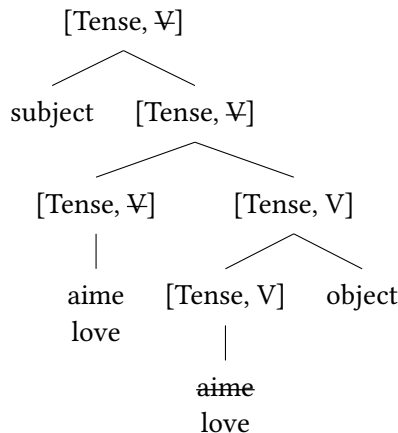


Figure 2.15: Fanselow's analysis of head-movement as reprojection (2009a: 105)

have to be two different instances of *aime*, in fact of all verbs that undergo head movement and of course any account should capture the fact that these instances are somehow related.

Surányi (2005: 14) suggests that inflectional affixes attach to stems directly “prior to the point where the fully inflected stem merges with another (independent) element”. So he assumes the representation in Figure 2.16 for fully inflected verbs.²⁷ This structure is combined with the object DP as shown in Figure 2.17.

²⁷Interestingly this is very similar to what is assumed in HPSG: HPSG does not assume a de-

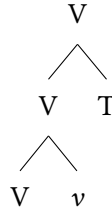


Figure 2.16: Verbal stem plus affixes according to Surányi (2005: 15)

Surányi assumes that the verb tree in Figure 2.17 moves to the left. Since the fea-

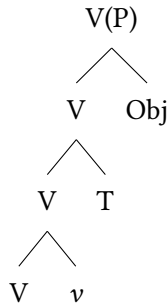


Figure 2.17: Combination of verb and object according to Surányi (2005: 15)

tures of *V* are checked already it is not the functor in the verbal tree any longer. Therefore the labels in the fronted tree are not determined by *V* but by *v*. The result of the head reprojection is provided in Figure 2.18. The left subtree of *v*(*P*) is the moved verb from Figure 2.16. *v* provides the label of this subtree. It selects a *V*(*P*) and the result of the combination is a *v*(*P*), which may be combined with a subject in a later step.

As with Fanselow’s analysis one has to say that the details are not worked out. What does *V* select? An incomplete projection of *v* as seems to be needed to justify trees like the one in Figure 2.16? If this is the case, why is *v* the functor in Figure 2.18 taking a *V* to its left, a *T* to its right and a *V*(*P*)?

All of this is provided by the proposal presented in this book: there is a lexical

composition in terms of verb shells. Instead decomposition is done lexically. A verb contains the information contributed by *V* and by *v* in Minimalist approaches. Inflection is also done presyntactically in HPSG. HPSG assumes lexical rules for inflection. They are equivalent to the *V*-*T* combination in Figure 2.16.

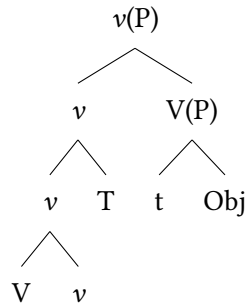


Figure 2.18: Combination of verb and object according to Surányi (2005: 15)

rule/unary schema that maps the verb in final position to a verb in initial position that acts as a head-initial head that selects for a projection in which a respective verb is missing. I think that the Minimalist reprojection approaches are notational variants of the HPSG analyses, which were developed several years earlier (Kiss & Wesche 1991: Section 4.7; Kiss 1993; Frank 1994a; Kiss 1995a; Feldhaus 1997, Meurers 2000) but while the Minimalist proposals remain on the level of sketches like the one in Figure 2.14, the HPSG analyses are worked out in detail.

2.4 Summary

In this chapter, I have presented a model of German sentence structure which can explain the relatively free ordering of constituents in the Mittelfeld, the position of the finite verb, the predicate complex, and fronting. I have argued against alternative analyses with variable linearization/variable branching. The analysis put forward in this chapter forms the basis for the explanation of the previously discussed cases of supposed multiple fronting that is discussed in the next chapter.

3 Multiple fronting

In the brief introductory Chapter 1, I mentioned that German is a V2 language. This means that declarative sentences and certain interrogative sentences are formed by placing a constituent in front of the finite verb. Thiersch (1978), den Besten (1983: 55), Uszkoreit (1987), among others, have suggested that verb-second sentences are in fact verb-initial sentences from which one constituent has been extracted and placed in the prefield. In the case of (1b), it would be *das Buch* which has been extracted from the verb-initial clause.

- (1) a. Kennt er das Buch?
 knows he the book
 ‘Does he know the book?’
 b. Das Buch kennt er.
 the book knows he
 ‘He knows the book.’

This chapter deals with apparent exceptions to the V2 property of German of the type exemplified in (2):

- (2) [Trocken] [durch die Stadt] kommt man am Wochenende auch
 dry through the city comes one at.the weekend also
 mit der BVG.¹
 with the BVG
 ‘With the BVG, you can be sure to get around town dry at the weekend.’

Neither *trocken* ‘dry’ depends on *durch die Stadt* ‘through the city’ nor the other way round. Rather both constituents depend on *kommt* ‘comes’.

Viewing fronting as the extraction of one element has become the most established analysis up to now. Examples in which more than one constituent occupies the prefield have been discussed from time to time in the more theoretical literature. To account for these data, certain analyses have been developed where

⁰This chapter is based on Müller (2005b).

¹taz berlin, 10.07.1998, p. 22.

3 Multiple fronting

the constituents preceding the finite verb are viewed as a single constituent, i.e. it is assumed there is only a single constituent in the prefield (Haider 1982: 17; Wunderlich 1984: 79; Fanselow 1987: 99–100; 1993: Chapter 3; Hoberg 1997: 1634; G. Müller 1998: Chapter 5.3).

The exceptions to this are Grubačić (1965), Lee (1975), Lötscher (1985), Eisenberg (1994: 412), Jacobs (1986), Buring & Hartmann (2001), and Speyer (2008). Jacobs (1986) and Buring & Hartmann (2001) argue that it is necessary to assume V3 order for sentences with focus particles such as *nur*, *auch* and *sogar* or rather a special position for focus particles preceding verb-second clauses.

- (3) Nur die Harten kommen in den Garten.
only the hard come into the garden
'Only the tough ones make it into the garden.'

For a discussion of these suggestions, see Reis (2002; 2005) and Müller (2005c). Jacobs also assumes that several of the so-called 'sentence adverbs' can occur in sentences with V3 constituent order. He demonstrates this with *leider* 'unfortunately' und *vermutlich* 'probably' (p.107, p.112). The examples which will be discussed in what follows are of a different kind. Grubačić (1965) offers some examples which I will view as cases of (apparent) multiple fronting. However, some of her examples are also of the same kind as discussed by Lee (1975).

- (4) a. Piachi, als ihm der Stab gebrochen war, verweigerte sich
Piachi when him the stick broken was refused SELF
hartnäckig der Absolution.²
persistent the absolution
'Piachi persistently refused the absolution, when the stick was broken over him.'
- b. Der Junge, sobald er den Alten nur verstanden hatte, nickte und
the boy once he the old only understood had nodded and
sprach: o ja, sehr gern.³
said o yes very gladly
'As soon as the boy understood the old man, he nodded and said: O yes, I like to do this very much.'
- c. Und damit, ehe ich noch recht begriffen, was sie sagt, auf
nad there.with before I yet right understood what she said on

²Kleist, *Der Findling*, p. 214.

³Kleist, *Der Findling*, p. 21 I.

dem Platz, vor Erstaunen sprachlos, läßt sie mich stehen.⁴
 the place before astonishment speechless let she me stand
 ‘After this she abandons me on the place speechless and before I fully
 understood what she was saying.’

I do not consider Lee’s examples V3-clauses in the sense that is relevant here. Some of the examples are parenthetical insertions and some are of the type that is discussed in Section 3.3. For further discussion of Lee’s data, see Müller (2003: 33).

For expository purposes, I will discuss some data in the following section where it seems (at least on the surface) that more than one constituent precedes the finite verb. Section 3.2 presents the analysis of apparent multiple frontings. In Section 3.3, I will show that many of the multiple fronting analyses suggested thus far make predictions that are incompatible with the data in Section 3.1 and additional data from German. In Section 3.4, I draw some conclusion.

3.1 The phenomenon

The assumption that only a single constituent can occur before the finite verb is well established and descriptively correct for the vast majority of German sentences. In certain circumstances, however, several constituents, that is, multiple phrases which are not syntactically dependent on each other, can occur there together. The following sentences are examples of the occurrence of different types of constituents in the prefield. I have ordered the examples according to the type of the fronted elements. The division into constituents is shown by the corresponding bracketing notation. In cases where multiple divisions are possible, I have omitted the brackets.

Many of the following examples were published in a descriptive paper that appeared in *Deutsche Sprache* (Müller 2003). I found most of these examples by careful reading. After the publication of the paper in 2003 I continued to collect data and made it available to the community on my webpage (Müller 2013a). A further resource that is also available online is a database put together by Felix Bildhauer (2011) in the DFG project *Theorie und Implementation einer Analyse der Informationsstruktur im Deutschen unter besonderer Berücksichtigung der linken Satzperipherie* (MU 2822/1-1 and SFB 632, A6). He collected 3.200 examples mainly from the corpora that are available from the Institut für Deutsche

⁴Kleist, *Kohlhaas*, p. 92.

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Sprache in Mannheim at <https://clarin.ids-mannheim.de/SFB632/A6>.⁵ These examples are annotated with respect to part of speech, grammatical function and information structural status.

The following examples were discussed in many German publications but until now they were not available with glossing and translation.

3.1.1 Subject and adverb

In (5a), an adjective used adverbially is present in the prefield with the subject of a passive clause. The same is true for the construction in (5b): The subject has been fronted along with an adjective.

- (5) a. [Richtig] [Geld] wird aber nur im Briefgeschäft verdient.⁶
right money is PRT only in postal.services earned
'It's only in postal services where you earn serious money.'
- b. [Alle Träume] [gleichzeitig] lassen sich nur selten
all dreams simultaneously let REFL only seldom
verwirklichen.⁷
realized
'All our dreams can only seldomly be realized at the same time.'

There are examples such as (6) where one may be tempted to count the temporal adjunct *täglich* 'daily' as part of the NP, but we are not dealing with these kinds of constructions in (5b) as the adverb obviously refers to *verwirklichen* 'to realize'.

- (6) ein weiteres Großcenter [...], das mit [20.000 Besuchern täglich] zu
a further big.centre that with 20,000 vistors daily to
den beliebtesten gehört.⁸
the most.popular belongs
'another large scale centre, which – with its total of 20,000 visitors daily – counts as one of the most popular.'

Note that the fronted elements in (5) are logical objects. The fronting of logical subjects together with other constituents does – if we ignore examples like (3)

⁵Winkler (2014) uses almost exclusively data from Müller (2003; 2005b; 2013a); Müller et al. (2012); Bildhauer & Cook (2010); Bildhauer (2011) without proper acknowledgment of the source. Researchers who want to cite examples properly are urged to check the mentioned papers before attributing data to Winkler.

⁶taz, 28./29.10.2000, p. 5.

⁷Broschüre der Berliner Sparkasse, 1/1999.

⁸taz berlin, 11.10.2002, p. 13.

which are sometimes analyzed as V3 (Jacobs 1986) – not seem to be possible (see Eisenberg (1994: 413)).

As Lenerz (1986: 316), Fanselow (1987: 99), and Dürscheid (1989: 32) noted, examples like (7) are absolutely unacceptable.

- (7) a. * Ich das Wienerschnitzel habe bestellt.⁹
 I.NOM the.ACC wiener.schnitzel have ordered
 ‘I ordered the Wiener schnitzel.’
 b. * Einen interessanten Vortrag der Sascha dürfte gehalten haben.¹⁰
 an interesting talk the Sascha might hold have
 ‘Sascha probably gave an interesting talk.’

However, examples like (8) – which are quoted from Bildhauer & Cook (2010: 72) and Bildhauer (2011: 371), respectively, – and the additional example in (9) show that it is possible in principle:

- (8) a. [Weiterhin] [Hochbetrieb] herrscht am Innsbrucker Eisoval.¹¹
 further high.traffic reigns at.the Innsbruck icerink
 ‘It’s still all go at the Innsbruck icerink.’
 b. Die Kinder haben eigene Familien gegründet und wohnen alle
 einigermaßen in der Nähe, so daß die Jubilarin ihre 19 Enkel- und 17
 Urenkelkinder häufig sehen kann.
 „[Alle] [gleichzeitig] können mich nicht besuchen, weil ich
 all simultaneously can me not visit because I
 gar nicht so viel Platz habe“, lacht sie.¹²
 not.at.all so much space have laughs she
 ‘The children raised their own families and live close enough so that
 the jubilarian can see her 19 grandchildren and 17 great-
 grandchildren often. It is not possible that all grandchildren and
 great-grandchildren visit me simultaneously because I do not have
 that much space, she says laughingly.’

- (9) Zusätzlich Geld in Klimaschutz fließt dadurch allerdings
 additionally money in climate.protection flows there.because however

⁹Lenerz (1986: 316).

¹⁰(Fanselow 1987: 99).

¹¹Bildhauer & Cook (2010: 72)

¹²DeReKo corpus, V99/JAN.02701. Quoted from Bildhauer (2011: 371).

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nicht.¹³

not

‘However, this does not cause additional money to flow into climate protection.’

3.1.2 Accusative objects and prepositional phrases

In (10), the prefield consists of a noun phrase and a prepositional phrase.

- (10) a. [Nichts] [mit derartigen Entstehungstheorien] hat es natürlich zu
nothing with these.kind theories.of.origin has it of.course to
tun, wenn ...¹⁴
do if
‘It has, of course, nothing to do these kinds of theories of origin, if ...’
- b. [Zum zweiten Mal] [die Weltmeisterschaft] errang Clark 1965 ...¹⁵
to.the second time the world.championship won Clark 1965
‘Clark won the world championship for the second time in 1965.’
- c. [Die Kinder] [nach Stuttgart] sollst du bringen.¹⁶
the children to Stuttgart should you bring
‘You should take the children to Stuttgart.’

In (10a), we are dealing with *cohesion*¹⁷: The word *nichts* ‘nothing’ is a semantic fusion of *nicht* ‘not’ and *etwas* ‘something’. *etwas* is the accusative object. The *mit* PP is a complement of *zu tun haben* ‘to do have’. The PP *zum zweiten Mal* ‘for the second time’ in (10b) is, on the other hand, an adjunct.

3.1.3 Accusative objects and adverbs

In (11), we are dealing with sentences where the accusative object occurs in initial position together with an adverb or an adjective used as an adverb.

¹³taz, 25.08.2020, p. 8

¹⁴K. Fleischmann, *Verbstellung und Relieftheorie*, München, 1973, p. 72. quoted from van de Velde (1978: 135).

¹⁵Der deutsche Straßenverkehr, 1968, Heft 6, p. 210, quoted after Neumann (1969: 224).

¹⁶(Engel 1970: 81)

¹⁷See Bech (1955: 77) for more on the term cohesion.

- (11) a. [Gezielt] [Mitglieder] [im Seniorenbereich] wollen die Kendoka
specifically members in pensioner.area want the Kendoka
allerdings nicht werben.¹⁸
PRT not gain
'The kendoka are not looking to gain members specifically in the
pensioner demographic.'
- b. [Dauerhaft] [mehr Arbeitsplätze] gebe es erst, wenn sich eine
constantly more jobs gives it first when REFL a
Wachstumsrate von mindestens 2,5 Prozent über einen Zeitraum
growth.rate of at.least 2.5 percent over a time.period
von drei oder vier Jahren halten lasse.¹⁹
of three or four years hold let
'In the long run, there will only be more jobs available when a
growth rate of at least 2.5 percent can be maintained over a period of
three or four years.'
- c. [Kurz] [die Bestzeit] hatte der Berliner Andreas Klöden [...]
briefly the best.time had the Berliner Andreas Klöden
gehalten.²⁰
held
'Andreas Klöden from Berlin had briefly held the best time.'

In (11a), the prefield is possibly even occupied by three elements since it is more likely that the prepositional phrase refers to *werben* 'to solicit' rather than to *Mitglieder* 'members'. The sentence does not have the interpretation that they want to gain 'members in the pensioner demographic' but rather that the people who the advertising measures are trying to attract are in fact seniors – that is, they are advertising to the 'demographic of seniors'.

The example (11a) cannot be analyzed in the same way that Jacobs (1986) suggested for sentences such as (12) since *gezielt* 'specifically' only has scope over *werben* 'to solicit' but not over the modal verb.

- (12) [Vermutlich] [Brandstiftung] war die Ursache für ein Feuer in einem
supposedly arson was the cause for a fire in a

¹⁸ taz, 07.07.1999, p. 18

¹⁹ taz, 19.04.2000, p. 5.

²⁰ Märkische Oderzeitung, 28./29.07.2001, p. 28.

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Waschraum in der Heidelberger Straße.²¹

washroom in the Heidelberger Street

‘Arson was supposedly the cause of a fire in a washroom in the Heidelberger Straße.’

In Jacob’s analysis, *gezielt* ‘specifically’ would be connected to the rest of the sentence and one would therefore get a structure where the adverbial has scope over the modal verb.

3.1.4 Präpositinalobjekt und Adverb

(13) shows an example of a fronting of an adverb together with a prepositional object:

- (13) [Besonders] [an Profil] gewinnt Kathrin Passig allerdings in der
especially at profile wins Kathrin Passing but in the
Auseinandersetzung mit Jonathans Franzens technikkritischen
argument with Jonathans Franzen’s tecnics.critically
Essays.²²
essays

‘Kathrin Passig gains profile especially in the competition with those essays of Jonathans Franzen that are critical of technology.’

3.1.5 Dative objects and prepositional phrases

(14) is an example of simultaneous fronting of a dative object and a prepositional object.

- (14) [Der Universität] [zum Jubiläum] gratulierte auch
the university to.the anniversary congratulated also
Bundesminister Dorothee Wilms, die in den fünfziger Jahren in
state.minister Dorothee Wilms who in the fifties years in
Köln studiert hatte.²³
Cologne studied had

‘State minister Dorothee Wilms – who studied in Cologne in the 1950s – also congratulated the university on its anniversary.’

²¹Mannheimer Morgen, 04.08.1989, Lokales; Pflanzendieb.

²²taz 20./21.07.2019, p. 16

²³Kölner Universitätsjournal, 1988, p. 36, quoted from Dürscheid (1989: 87).

3.1.6 Dative and accusative object

The following examples are constructed examples from the literature that show that dative NPs can be fronted together with accusative NPs:

- (15) a. Der Maria einen Ring glaube ich nicht, dass er je schenken
the Maria a ring believes I not that he ever give
wird.²⁴
will
'I don't think that he would ever give Maria a ring.'
- b. Ihm den Stern hat Irene gezeigt.²⁵
him the star has Irene shown
'Irene showed him the star.'
- c. (Ich glaube) Kindern Bonbons gibt man besser nicht.²⁶
I think children candy gives one better not
'I think it's better not to give candy to children.'
- (16) Studenten einem Lesetest unterzieht er des öfteren.
students a reading.test subjects.to he the often
'He often makes his students do a reading comprehension test.'

(16) is due to Anette Frank (p. c. 2002).

I discussed these sentences in Müller (2005b). Back then I did not have any attested examples apart from the one in (17), which involves an idiom.

- (17) [Dem Zeitgeist] [Rechnung] tragen im unterfränkischen Raum die
the.DAT Zeitgeist account carry in.the lower.Franconian area the
privaten, städtischen und kommunalen Musikschulen.²⁷
private, urban and communal music.schools

But a more systematic corpus exploration by Bildhauer (2011) resulted in attested examples like the one in (18a). (18b) was found by chance by Arne Zeschel.

²⁴Fanselow (1993: 67).

²⁵Eisenberg (1994: 412).

²⁶G. Müller (1998: 260).

²⁷Fränkisches Volksblatt, quoted from Spiegel, 24/2002, p. 234.

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- (18) a. Dem Saft eine kräftige Farbe geben Blutorangen.²⁸
 the.DAT juice a.ACC strong color give blood.oranges
 ‘Blood oranges give the juice a strong color.’
 b. [Ihnen] [für heute] [noch] [einen schönen Tag] wünscht Claudia
 you.DAT for today still a.ACC nice day wishes Claudia
 Perez.²⁹
 Perez
 ‘Claudia Perez wishes you a nice day.’

(19) also from Bildhauer (2011: 369) again involves an idiomatic example:

- (19) [Den Kölnern] [einen Bärendienst] erwies nach etwas
 the inhabitants.of.Cologne a disservice did after some
 mehr als einer Stunde ausgerechnet Nationalspieler Podolski, der
 more than an hour of.all.people national.player Podolski who
 wegen einer Fußblessur zunächst auf der Bank Platz nehmen
 because.of his foot.wound initially on the bench seat take
 musste.³⁰
 must

‘Podolski did a disservice to the Cologne team after a little more than an hour since he had to seat himself on the bench due to a foot wound.’

See (28) and (30c) for further examples that involve the fronting of idiom/collocation parts or parts of support verb constructions.

These examples show that such frontings may include two NPs and hence the syntax has to account for such structures. This does not mean that all structures involving two fronted NPs will be predicted to be possible. For instance frontings like the one in (20) which I discussed in Müller (2005b) are hardly possible without a context.

- (20) ?* Maria Peter stellt Max vor.
 Maria Peter introduces Max PART
 ‘Max introduces Peter to Maria.’

²⁸Bildhauer & Cook (2010) found this example in the *Deutsches Referenzkorpus* (DeReKo), hosted at Institut für Deutsche Sprache, Mannheim: <http://www.ids-mannheim.de/kl/projekte/korpora>

²⁹Claudia Perez, Länderreport, Deutschlandradio.

³⁰<http://www.haz.de/Nachrichten/Sport/Fussball/Uebersicht/FC-Augsburg-gelingt-Coup-gegen-acht-Koelner>, 10.02.2010.

As Winkler (2014: 48) suggested the markedness of examples like (20) is probably due to the lack of case marking of the noun phrases. Because of this it is unclear who introduces whom to whom. The sentence greatly improves if determiners are used with nouns since the determiners are case marked and help to identify which noun fills which grammatical role.

- (21) a. ? Die Maria dem Peter stellt der Max vor.
 the.ACC Maria the.DAT Peter introduces the.NOM Max PART
 ‘Max introduces Maria to Peter.’
 b. ? Der Maria den Peter stellt der Max vor.
 the.DAT Maria the.ACC Peter introduces the.NOM Max PART
 ‘Max introduces Peter to Maria.’

So, the unacceptability of (20) may be due to processing difficulties.

3.1.7 Instrumental prepositional phrases and temporal prepositional phrases

In (22), there is both a temporal prepositional phrase as well as an instrumental prepositional phrase in the pre-field.

- (22) [Zum letzten Mal] [mit der Kurbel] wurden gestern die
 to.the last time with the crank were yesterday the
 Bahnschranken an zwei Übergängen im Oberbergischen Runderoth
 train.barriers at two crossings in Oberbergisch Runderoth
 geschlossen.³¹
 closed
 ‘The barriers at a train station in Runderoth, Oberberg were closed using
 a crank for the last time yesterday.’

I have also found many other examples for most of the types of examples discussed here. Furthermore, we find multiple fronting with adjectives used adverbially and directional/local prepositional phrases, noun phrases in copula constructions with adverbials, prepositional phrases in copula constructions with adverbs, predicative conjunction phrase with adverbs, directional prepositional phrases with adverbs as well as local prepositional phrases with adverbs. For space considerations, not all examples have been included here. A comprehensive discussion of the data can be found in (Müller 2003), which appeared in

³¹Kölner Stadtanzeiger, 26.04.1988, p. 28, quoted from Dürscheid (1989: 107).

Deutsche Sprache. Further data from newspaper can be found at <https://hpsg.hu-berlin.de/~stefan/Pub/mehr-vf-ds.html>. A more systematic data collection was done in the project A 6 of the SFB 632. The database is documented in Bildhauer (2011). The database is hosted at the IDS Mannheim and can be accessed via <http://hpsg.fu-berlin.de/Resources/MVB/>.

3.1.8 Support verb constructions and idiomatic usages

In examples (23) – (25), we are dealing with support verb constructions/idiomatic usages, where either a set phrase or some fixed lexical element has been fronted together with a complement or adjunct. In (23), there is an element in the prefield which is not part of the phraseologism. On the other hand, there are only parts of a phraseologism in the prefield in example (24). The most notable feature of the examples in (25) is that more than two constituents are occupying the prefield.

- (23) a. [Den Kürzungen] [zum Opfer] fiel auch das vierteljährlich
 the cuts to.the victim fell also the quarterly
 erscheinende Magazin *aktuell*, das seit Jahren als eines der
 appearing magazine *aktuell* which since years as one of.the
 kompetentesten in Sachen HIV und Aids gilt.³²
 most.competent in things HIV and Aids counts
 ‘The magazine *aktuell*, which appears quarterly and has for years had
 a reputation as being one of the most competent when it comes to
 HIV and Aids, has also fallen victim to the cuts.’
 b. [Eine lange Kolonialgeschichte] [hinter sich] hat das einst britische
 a long colonial.history behind REFL has the once British
 Warenhaus Lane Crawford³³
 warehouse Lane Crawford
 ‘The former British warehouse Lane Crawford has a long colonial
 history behind it’
 c. [Ernsthaft] [in Schwierigkeiten] geriet Koch deshalb nur am
 seriously in difficulties came Koch therefore only at.the
 Anfang, als es um den drohenden Irakkrieg ging.³⁴
 start when it around the threatening Iraq.war went
 ‘Koch therefore only encountered serious problems at the start when

³²zitty, 8/1997, p. 36.

³³Polyglott-Reiseführer „Hongkong Macau“, München 1995, p. 28.

³⁴taz, 28.01.2003, p. 6.

dealing with the impending Iraq war.’

- d. [Ihm] [zur Seite] steht als stellvertretender Vorstandschef Gerd
him to.the side stands as temporary committee.boss Gerd
Tenzer.³⁵

Tenzer

‘Gerd Tenzer is on his side as temporary head of the committee.’

- e. Sex ist je besser, desto lauter. [Am lautesten] [„zur Sache“]
Sex is the better, the louder at.the loudest to.the thing
gehe es in Köln und Düsseldorf mit einem Spitzenwert von
goes it in Cologne and Düsseldorf with a top.value of
jeweils 25 %.³⁶
each 25 %

‘When it comes to sex: the better, the louder. The loudest when
“getting down to business” can be found in Cologne and Düsseldorf
with both topping 25 %.’

- f. [Damit] [im Zusammenhang] steht auch eine Eigenschaft der
with.it in.the relation stands also a property of.the
paarweisen Konjunkte³⁷
in.pairs conjuncts

‘A property of the conjuncts in pairs is also related to this.’

- g. [Endgültig] [auf den TV-Geschmack] kam Anne Will bei den
finally on the TV-taste came Anne Will at the
olympischen Spielen 2000.³⁸
Olympic Games 2000

‘Anne Will finally got a taste of television at the 2000 Olympic
Games.’

- h. [Stark] [unter Druck] geriet der Pharmawert Schering.³⁹
strong under pressure came the pharmaceutical Schering
‘The pharmaceutical company Schering came under extreme
pressure.’

³⁵taz, 18.07.2002, p. 7.

³⁶taz, 19.04.2000, p. 11.

³⁷In the main text of Haider (1988: 40).

³⁸taz, 16.03.2001, p. 12.

³⁹taz, 28./29.09.2002, p. 9 (dpa).

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- (24) a. [Mit den Hühnern] [ins Bett] gehen sie dort.⁴⁰
 with the chickens in.the bed go they there
 ‘They go to bed very early there.’
- b. [Öl] [ins Feuer] goß gestern das Rote-Khmer-Radio⁴¹
 oil in.the fire poured yesterday the Rote-Khmer-Radio
 ‘Rote-Khmer-Radio fanned the flames yesterday’
- c. [Das Tüpfel] [aufs i] setze der Bürgermeister von Miami, als er am
 the dot on.the i put the mayor of Miami as he on
 Samstagmorgen von einer schändlichen Attacke der
 Saturday.morning from a shameful attack of.the
 US-Regierung sprach.⁴²
 US-government spoke
 ‘On Saturday morning, the icing on the cake was when the mayor of
 Miami spoke of the shameful attack by the US government.’
- d. [Ihr Fett] [weg] bekamen natürlich auch alte und neue
 their fat away got of.course also old and new
 Regierung [...] ⁴³
 government
 ‘Both the old and new governments were taken to task ...’
- e. [Den Finger] [mitten in die Wunde] legte jetzt eine findige Gruppe
 the finger middle in the wound laid now a clever group
 Internetexperten aus Österreich: [...] ⁴⁴
 internet.experts from Austria
 ‘A clever group of internet experts from Austria have now rubbed salt
 into the wounds ...’
- f. [Heiß] [her] geht es dagegen beim Thema
 hot to.here goes it on.the.other.hand by.the topic

⁴⁰Engel (1970: 81). Engel discusses this example in connection with (10c). Engel views *ins Bett* and *nach Stuttgart* as inner frame elements and notes that the ability to front a constituent with an inner frame element is restricted. Engel also classifies adjectives in copula constructions as inner frame elements. Fronting of adjectives with dependent elements behaves completely normally however. See Section 3.1.10.

⁴¹taz, 18.06.1997, p. 8.

⁴²taz, 25.04.2000, p. 3.

⁴³Mannheimer Morgen, 10.03.1999, Lokales; SPD setzt auf den „Doppel-Baaß“.

⁴⁴taz, 04./05.11.2000, p. 30.

„Kundenbewertungen“ – einem Herzstück der Online-Börse.⁴⁵
customer.reviews a centrepiece of.the online-market

‘On the other hand, it gets rather heated when it comes to ‘customer reviews’ – a crucial part of the online market.’

- g. [Übles] [im Schilde] führten auch zwei mit Schußwaffen
bad.things in.the shield led also two with guns
ausgestattete Maskierte, die am frühen Montagmorgen eine
equipped masked.men who on early monday.morning a
Kneipe in Neukölln überfielen und mit den Tageseinnahmen
pub in Neukölln held.up and with the daily.takings
flüchteten.⁴⁶
fled

‘Two masked men carrying guns were also up to no good as they held up a pub in Neukölln and made off with that day’s takings.’

- (25) a. [Endlich] [Ruhe] [in die Sache] brachte die neue deutsche
finally peace in the matter brought the new German
Schwulenbewegung zu Beginn der siebziger Jahre.⁴⁷
gay.movement to beginning of.the seventy years
‘The new German gay movement finally brought peace to the matter in the early 70s.’
- b. [Wenig] [mit Politik] [am Hut] hat auch der Vorarbeiter, der
little with politics on.the hat has also the foreman who
sich zur Aussage hinreißen läßt, „daß der Sausgruber das
REFL to.the statement carry.away lets that the Sausgruber the
falsche anhat“.⁴⁸
wrong.one wears
‘The foreman also cares little about politics and got so carried away he claimed that Sausgruber was wearing the wrong thing.’
- c. [Wenig] [mit den aktuellen Ereignissen] [im Zusammenhang]
little with the recent events in relation
steht die Einstellung der Produktion bei der Montlinger
stands the cancellation of.the production from the Montlingen

⁴⁵Spiegel, 1/2003, p. 123.

⁴⁶taz berlin, 11.02.2003, p. 20.

⁴⁷taz, 07.11.1996, p. 20.

⁴⁸Vorarlberger Nachrichten, 03.03.1997, p. A5.

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Firma Mega-Stahl AG auf Ende November.⁴⁹

company Mega-Stahl AG on end November

‘The suspension of production until the end of November at the company Mega-Stahl AG in Montlingen has little to do with recent events.’

The examples in (26) show that the verbal part of the idiom, i.e. the functional verbal complex, does not necessary have to be adjacent to the fronted elements.

- (26) a. [Öl] [ins Feuer] dürfte auch die Ausstrahlung eines Interviews
oil in.the fire may also the broadcast of.an interview
gießen, das die US-Fernsehstation ABC in der vergangenen Woche
pour that the US-TV.station ABC in the last week
mit Elián führte.⁵⁰
with Elián led
‘The broadcast of an interview with Elián carried out last week by the US Network ABC should also fan the flames somewhat.’
- b. [Zum ersten Mal] [persönlich] [in Berührung mit Punk und New
the first time peronsally in contact with Punk and New
Wave] bin ich über Leute gekommen, die in meiner Lehrklasse
Wave be I over people come who in my vocational
waren.^{51,52}
apprenticeship.class were
‘I first came into contact with Punk and New Wave through people in the apprenticeship class.’
- c. [wirklich] [in Bedrängnis] hatte die Konkurrenz den Texaner
really in trouble had the competition the Texan

⁴⁹St. Galler Tagblatt, 26.10.2001 ; Sparsam auf bessere Zeiten wartend.

⁵⁰taz, 28.03.2000, p. 9

⁵²Toster in an interview in Ronald Galenza und Heinz Havemeister (eds). *Wir wollen immer artig sein ... Punk, New Wave, HipHop, Independent-Szene in der DDR 1980–1990*, Berlin: Schwarzkopf & Schwarzkopf Verlag, 1999, p. 309.

⁵²If one analyzes *in Berührung kommen* as a support verb construction, then one has to view the *mit* PP as an extraposed argument of the support verb construction. As a result, one would have four constituents in the pre-field in (26b). If one were to analyze *in Berührung mit Punk und New Wave* in contact with Punk and New Wave’ as a single prepositional phrase, (26b) would still have three fronted constituents.

nämlich auch gestern nicht bringen können.⁵³

actually also yesterday not bring could

‘In fact, the competition couldn’t pin the Texan into a corner yesterday either.’

- d. Allerdings: [Ein bißchen Wasser] [in den Wein] muß ich schon
nevertheless a bit water in the wine must I PRT
gießen, [...] ⁵⁴
pour

‘Nevertheless, I will have to add a bit of water to the wine.’

In the examples in (26), the finite verb is a modal verb or a perfect auxiliary verb. (27) presents an example with the phraseologism *eine gute Figur machen* ‘to cut a fine figure’, where the finite verb occupies the left sentential bracket but is, however, not adjacent to *Figur* but rather separated from it by the heavy *bei* prepositional phrase.

- (27) [Die beste Figur] [beim ersten Finalspiel um die
the best figure at.the first final.game for the
Basketball-Meisterschaft in der Berliner Max-Schmeling-Halle] machte
basketball-championship in the Berlin Max-Schmeling-Halle made
ohne Zweifel Calvin Oldham. ⁵⁵
without doubt Calvin Oldham.

‘It was Calvin Oldham who, without doubt, made the biggest impression during the first round of the final of the basketball championship in the Max Schmeling Halle in Berlin.’

(11a) and (11c) are examples of multiple fronting without idioms where the verb on which the constituents are dependent is not in initial position. Analyses which assume that multiple fronting is only possible when the verb on which the constituents are dependent is in initial position, are therefore inadequate.

The examples in (28) show that it is certainly possible for two noun phrases to occupy the pre-field.

- (28) a. [Dem Zeitgeist] [Rechnung] tragen im unterfränkischen Raum
the Zeitgeist account carry in.the lower.Franconian area

⁵³ taz, 24.07.2002, p. 19.

⁵⁴ taz, 05.03.2003, p. 18.

⁵⁵ taz, 22.05.2000, p. 17.

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die privaten, städtischen und kommunalen Musikschulen.⁵⁶

the private, urban and communal music.schools

‘The private, urban and communal music schools in the lower Franconian area account for the *zeitgeist*.’

- b. [Dem Frühling] [ein Ständchen] brachten Chöre aus dem Kreis
to.the spring a little.song brought choirs from the county
Birkenfeld im Oberbrombacher Gemeinschaftshaus.⁵⁷
Birkenfeld in.the Oberbrombach municipal.building
‘Choirs from Birkenfeld county welcomed (the arrival of) spring with
a little song in the Oberbrombach municipal building.’
- c. [Dem Ganzen] [ein Sahnehäubchen] setzt der Solist Klaus
to.the everything a little.cream.hood puts the soloist Klaus
Durstewitz auf⁵⁸
Durstewitz on
‘Soloist Klaus Durstewitz is the cherry on the cake.’

See also (18a) for a non-idiomatic example.

3.1.9 Fronting of three or more constituents

Lühr (1985: 11) presents examples with more than two fronted elements:⁵⁹

- (29) a. Im Schnellzug, nach den raschen Handlungen und Aufregungen
in.the express.train after the swift action and excitement
der Flucht und der Grenzüberschreitung, nach einem Wirbel
of.the escape and the border.crossing after a whirlwind
von Spannungen und Ereignissen, Aufregungen und Gefahren, noch
of tensions and events commotions and danger still
tief erstaunt darüber, daß alles gut gegangen war, sank
deeply shocked about that all good gone was sank

⁵⁶Fränkisches Volksblatt, quoted from Spiegel, 24/2002, p. 234.

⁵⁷RHZ02/JUL.05073.

⁵⁸NON08/FEB.08467.

⁵⁹She also discusses other combinations of elements in the prefield which occur in Feuchtwanger’s texts. She arrives, however, at the conclusion that the order of elements is a conscious style choice on the part of the author designed to mirror camera movements in films. The examples are rather deviant in standard German.

Lee (1975) discusses several examples from Kleist where sometimes up to four constituents have been fronted.

Friedrich Klein ganz und gar in sich zusammen.⁶⁰

Friedrich Klein whole and done in REFL together

'In the express train, following the swift events and action of the escape and the border crossing, after a whirlwind of tensions and events, commotion and danger and still deeply shocked that everything turned out well, Friedrich Klein slumped down completely into himself.'

- b. Mit seinen großen Buchstaben, quer über die letzte Schreibmaschinenseite des Gesuches, langsam mit rotem Stift malt Klenk: „Abgelehnt K.“.⁶¹

See also (11a) for a further example with more than two elements in the prefield. The examples in (25) constitute idiomatic usages (support verb constructions) which also have more than two fronted constituents.

The following examples are taken from newspapers:⁶²

- (30) a. [Ebenfalls] [positiv] [auf die Kursentwicklung] wirkte sich die also positive on the market.trend affected REFL the Ablehnung einer Zinserhöhung durch die Bank of England aus.⁶³ rejection of.a rate.hike by the Bank of England PART
'The rejection of a rate hike by the bank of England also affected the market trend positively.'
- b. [Zum ersten Mal] [ein Trikot] [in der Bundesliga] hat Chen Yang to.the first time a jersey in the Bundesliga has Chen Yang angezogen, und zwar das des Aufsteigers Eintracht on.put and namely that the promoted.team Eintracht Frankfurt.⁶⁴
Frankfurt
'Chen Yang put on a jersey in the Bundesliga for the first time, namely one of the jerseys of the promoted team Eintracht Frankfurt.'
- c. [Weiterhin] [der Jugend] [das Vertrauen] möchte man beim still the.DAT youth the.ACC trust wants one at.the

⁶⁰Herman Hesse. Klein und Wagner. In *Gesammelte Werke Band 5*. Frankfurt/M. 1970.

⁶¹Lion Feuchtwanger. *Erfolg. Drei Jahre Geschichte einer Provinz*. Frankfurt/M. 1981, p. 114.

⁶²I thank Felix Bildhauer for these examples.

⁶³Tiroler Tageszeitung, 18.05.1998, Ressort: Wirtschaft; Frankfurt in fester Verfassung; 198/MAL.19710.

⁶⁴Frankfurter Rundschau, 24.08.1998, S. 13, Ressort: FRANKFURTER, R98/AUG.67436.

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KSK Klaus schenken.⁶⁵

KSK Klaus give.as.a.present

‘People at the KSK Klaus want to continue to trust the youth.’

(18b) – repeated here as (31) for convenience – is the most extreme example I know of with four constituents before the finite verb:⁶⁶

- (31) [Ihnen] [für heute] [noch] [einen schönen Tag] wünscht Claudia
you.DAT for today still a.ACC nice day wishes Claudia
Perez.⁶⁷
Perez
‘Claudia Perez wishes you a nice day.’

3.1.10 Non-cases of multiple fronting

This section explores examples that were discussed in connection with multiple frontings but behave different in important respects. Subsection 3.1.10.1 deals with complex *Vorfelds* that include a verb, Subsection 3.1.10.2 deals with left dislocation and hanging topic and Subsection 3.1.10.3 deals with NP-internal frontings.

3.1.10.1 Partial verb phrase fronting

In connection with cases of multiple fronting, certain examples have been discussed with supposed cases of fronted nonfinite verbs or adjectives as well as elements dependent on them (*VogelgesangDoncer2004a*). Examples of this kind of fronting are shown in (32):

- (32) a. Besonders Einsteigern empfehlen möchte ich Quarterdeck Mosaic,
especially beginners recommend want.to I Quarterdeck Mosaic
dessen gelungene grafische Oberfläche und Benutzerführung auf
whose well.designed graphic surface and user.interface on
angenehme Weise über die ersten Hürden hinweghilft, obwohl
pleasant way over the first hurdles help.over although

⁶⁵Vorarlberger Nachrichten, 26.09.1997, S. C4, Ressort: Sport; Die Ländle-Staffeln wollen Serie halten, V97/SEP.48951.

⁶⁶I thank Arne Zeschel for this example.

⁶⁷Claudia Perez, Länderreport, Deutschlandradio.

sich die Funktionalität auch nicht zu verstecken braucht.⁶⁸

REFL the functionality also not to hide needs

‘I would particularly recommend Quarterdeck Mosaic for beginners due to its well-designed graphic surface and user interface, which can give a helping hand over those first few hurdles. This should not, however, raise any doubts about its functionality.’

- b. Der Nachwelt hinterlassen hat sie eine aufgeschlagene *Hör zu* und
the afterworld left has she an opened *Hör zu* and
einen kurzen Abschiedsbrief: ...⁶⁹

a short suicide.note:

‘She left the rest of the world an open copy of *Hör zu* and a short suicide note.’

- c. Viel anfangen konnte er damit nicht.⁷⁰

much begin could he with.it not

‘It was lost on him.’

- d. Bei der Polizei angezeigt hatte das Känguruh ein Autofahrer,
at the police reported had the kangaroo a motorist
nachdem es ihm vor die Kühlerhaube gesprungen war und
after it him before the bonnet jumped was and
dabei fast angefahren wurde.⁷¹

there.by almost run.over was

‘A motorist informed the police of the kangaroo after it had jumped in front of his car and was nearly hit.’

- e. Aktiv am Streik beteiligt haben sich „höchstens zehn Prozent“.⁷²

active on.the strike took.part have REFL at.most ten percent

‘Only a “maximum of ten percent” actively took part in the strike action.’

These kinds of constructions have been investigated extensively and there is now some consensus about the fact that there is exactly one constituent present in the prefield. However, one also finds suggestions like Gunkel’s (2003: 170–171) to analyse sentences such as (33) as verb-third clauses with a flat structure.

⁶⁸ c’t, 9/1995, p. 156.

⁶⁹ taz, 18.11.1998, p. 20.

⁷⁰ Wochenpost, 41/1995, p. 34.

⁷¹ taz, 18./19.01.1997, p. 32.

⁷² taz, 11.12.1997, p. 7.

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He does not, however, offer any explanation for the linearization constraints for such clauses. If one were to analyze examples such as (33) with a completely flat structure and with three fronted constituents, it is not possible to explain why the constituents preceding the finite verb act as if they also contained a middlefield, right verbal bracket and a postfield.

- (33) Den Kunden sagen, daß die Ware nicht lieferbar ist, wird er wohl
the customer say that the product not deliver.able is will he PRT
müssen.
must
'He will presumably have to tell the customers that the product cannot be delivered.'

On the other hand, if one assumes that the three constituents preceding the finite verb form a verbal projection, then the individual elements in the verbal projection can be assigned to topological fields and the order of the constituents do not require any special explanation. See Reis (1980: 82).

Regardless of the question whether the words preceding the finite verb have constituent status (Kathol 1995) or not (Gunkel 2003), analyses which attempt to explain (33) via local reordering cannot account for examples such as (34).

- (34) a. Das Buch gelesen glaube ich nicht, dass er hat.⁷³
the book read believe I not that he has
'I don't think that he has read the book.'
b. Angerufen denke ich, daß er den Fritz nicht hat.⁷⁴
called think I that he the Fritz not has
'I don't think he has called Fritz.'

In (34), we have elements preceding the finite verb which clearly originate in the embedded clause and therefore cannot have reached their current position by local reordering.

I have shown in Müller (2002a: 93–94) that the fact that *den Wagen* 'the car' in (35) bears accusative case could not be explained if one had two independent constituents in the prefield.

- (35) a. Den Wagen zu reparieren wurde versucht.
the.ACC car to repair was tried
'They tried to repair the car.'⁷⁵

⁷³(Sabel 2000: 82).

⁷⁴(Fanselow 2002).

⁷⁵The original German sentence is actually a passive: 'The car was tried to be repaired'. As such

- b. * Der Wagen zu reparieren wurde versucht.
 the.NOM car to repair was tried

In constructions with the so-called ‘remote passive’, the object can most certainly appear in the nominative as is shown by (36a).⁷⁶ It is clear from (36b) that it is possible to front the nominative NP on its own.

- (36) a. weil der Wagen zu reparieren versucht wurde
 because the.NOM car to repair tried was
 ‘because they tried to repair the car’
 b. Der Wagen wurde zu reparieren versucht.
 the.NOM car was to repair tried
 ‘They tried to repair the car.’

The infinitival construction with *zu* can also be fronted on its own as shown in (37):

- (37) Zu reparieren wurde der Wagen versucht.
 to repair was the car tried

The NP *der Wagen* has to bear nominative case in this kind of construction. If (35) were an example of fronting the infinitive and the noun phrase as a single constituent, we would also expect the nominative to be possible here, which is in fact not what we observe.

3.1.10.2 Left dislocation and free topics

Other authors have discussed examples with left dislocation or ‘free topics’ as cases of multiple fronting. These kinds of movement have been discussed in detail by Altmann (1981). I assume that left-dislocated constituents and free topics do not move to the prefield, but rather – as suggested by Höhle (1986: 329) – that they occupy another topological position. For this reason, they are not relevant to the present discussion.

3.1.10.3 NP-internal frontings

Speyer (2008: 456) treats examples like those in (38) as instances of multiple fronting:

a construction is impossible in English, I have translated it with an active sentence.

⁷⁶Evidence for the long-distance passive from corpora can be found in Müller (2002a: 136–137) and in Wurmbrand (2003).

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- (38) [[In Züpfners Box] [der Mercedes]] bewies, dass Züpfner zu Fuß
in Züpfners box the Mercedes proofed that Züpfner by foot
gegangen war.⁷⁷
went was
'The Mercedes in Züpfners box was proof of Züpfner's walking.'

A similar example is also discussed by Fanselow (1993: 69) in the context of multiple frontings:

- (39) In Hamburg eine Wohnung hätte er sich besser nicht suchen sollen.
in Hamburg a flat had he SELF better not search should
'It would have been better for him not to rent/buy a flat in Hamburg.'

I exclude these examples from the present discussion since they are probably best analyzed as NP-internal frontings as suggested for instance by Fortmann (1996: 68–69) for (40):

- (40) Mit der Bahn eine Reise ist nicht geplant.
with the train a journey is not planned
'A journey by train is not planned.'

Abb (1994: 133) also treats such examples as DP-internal frontings. He remarks that the following examples are possible in colloquial speech:

- (41) a. Übermorgen das Spiel gegen Kaiserslautern würde ich
the.day.after.tomorrow the game against Kaiserslautern would I
gern live sehen.
like.to live see
'I would like to see the game against Kaiserslautern tomorrow live.'
- b. Der die Karten hat, der Mann, soll gleich kommen.
who the tickets has the man shall soon come
'The man with the tickets is supposed to come soon.'
- c. An der Wand das Bild kommt mir bekannt vor.
on the wall the picture comes me known PART
'I think I know the picture on the wall.'

The example (41b) clearly shows that an analysis like Speyer's (2008) would fail on such sentences since relative clauses cannot be fronted independent of the noun they modify:

⁷⁷Böll, Heinrich (1963): *Ansichten eines Clowns*. Köln: Kiepenheuer & Witsch. Quoted from Speyer (2008: 456).

- (42) * Der die Karten hat, soll der Mann gleich kommen.
 who the tickets has shall the man soon come
 Intended: ‘The man with the tickets is supposed to come soon.’

3.1.11 Impossible multiple frontings (Same Clause Constraint)

As noted by Fanselow (1987: 99); (1993: 67), the constituents preceding the finite verb have to belong to the same clause. Simultaneous fronting of several constituents from different clauses is not possible:

- (43) a. Ich glaube dem Linguisten nicht, einen Nobelpreis gewonnen zu haben.
 I believe the linguist not a Nobel.prize won to have
 ‘I don’t believe the linguist’s claim that he won a Nobel prize.’
 b. * Dem Linguisten einen Nobelpreis glaube ich nicht gewonnen zu haben.
 the linguist a Nobel.price believe I not won to have
 c. Ich habe den Mann gebeten, den Brief in den Kasten zu werfen.
 I have the man asked the letter in the box to throw
 ‘I asked the man to post the letter in the letterbox.’
 d. * Den Mann in den Kasten habe ich gebeten, den Brief zu werfen.
 the man in the box have I asked the letter to throw

This observation was verified with 3.200 examples of apparent multiple fronting that were collected by Bildhauer (2011) in the DFG project *Theorie und Implementation einer Analyse der Informationsstruktur im Deutschen unter besonderer Berücksichtigung der linken Satzperipherie* (MU 2822/1-1 and SFB 632, A6).

3.1.12 Multiple frontings of idiom parts and restrictions on separate frontings

Many of the examples in (23) support the claim that multiple fronting is actually fronting of a single projection which contains part of the predicate complex. If we were to assume – as in Müller (2000) – that in these cases two independent constituents have been fronted, we would also have to assume that each of these constituents can be fronted individually, which would be difficult to reconcile with the ungrammaticality of (44):

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- (44) a. * Ins Feuer goß gestern das Rote-Khmer-Radio Öl.
in.the fire poured yesterday the Rote-Khmer-Radio oil
- b. * Aufs i setze der Bürgermeister von Miami das Tüpfel, als er am
on.the i put the mayor of Miami the dot as he on
Samstagsmorgen von einer schändlichen Attacke der
Saturday.morning from a shameful attack of.the
US-Regierung sprach.
US-government spoke
- c. * Weg bekamen natürlich auch alte und neue Regierung ihr Fett.
away got of.course also old and new government their fat
- d. * Rechnung tragen im unterfränkischen Raum die privaten,
account carry in.the lower.Franconian area the private,
städtischen und kommunalen Musikschulen dem Zeitgeist.
urban and communal music.schools the Zeitgeist

One would have to formulate complex constraints which would ensure that, for example, *Rechnung* ‘account’ could only be fronted if *dem Zeitgeist* ‘the Zeitgeist’ were also fronted. All in all, this sort of explanation would turn out to be more complicated than one which assumes that part of a predicate complex is fronted.

3.1.13 Scope of negation and fronting

Furthermore, Fanselow notes that negation has scope over everything preceding the finite verb.

- (45) a. Nicht der Anna einen Brief hätte er schreiben sollen, sondern der
not the Anna a letter had he write should rather the
Ina eine Postkarte.
Ina a postcard
‘He shouldn’t have sent Anna a letter, but rather Ina a postcard.’
- b. Nicht am Sonntag einen Brief hätte er schreiben sollen, sondern am
not on Sunday a letter had he write should rather on
Samstag seinen Vortrag für Potsdam.
Saturday his presentation for Potsdam.
‘He shouldn’t have written a letter on Sunday, he should have written his presentation for Potsdam on Saturday.’

The data discussed here can be easily accounted for if one assumes that the fronted elements are arguments of an empty head or that they modify some kind

of empty head. This null head has the properties of a verb in the remaining sentence, which explains the fact that the fronted constituents cannot be dependents of different verbs. Corresponding suggestions in this direction have been made by Fanselow (1993) and Hoberg (1997: 1634), although they did not work out the details of these suggestions.

As the examples in (45) show, the negation cannot be analyzed as constituent negation. It follows that *nicht* is a separate constituent in (45) and not part of an NP. Again this is entirely unproblematic in approaches that assume that *nicht* is part of a larger verbal constituent *nicht der Anna einen Brief* ‘not the Anna a letter’.

3.1.14 The order of fronted constituents

As was noted by Lühr 1985: 6–7, Eisenberg (1994: 412–413), and Hoberg (1997: 1625–), the order of the fronted constituents is relatively fixed. If the order of the elements in (5b) and (11b) is changed as in the following examples, the result is sentences that are degraded in acceptability:

- (46) a. ?* Gleichzeitig alle Träume lassen sich nur selten
 simultaneously all dreams let themselves only seldom
 verwirklichen.
 realize
 ‘Very rarely, all dreams can be realized simultaneously.’
 b. ?* Mehr Arbeitsplätze dauerhaft gebe es erst, wenn
 more jobs permanently gives it first when

The observation that the order in apparent multiple frontings corresponds to the unmarked order in the *Mittelfeld* was verified with 3.200 examples of apparent multiple fronting that were collected by Bildhauer (2011) in the DFG project *Theorie und Implementation einer Analyse der Informationsstruktur im Deutschen unter besonderer Berücksichtigung der linken Satzperipherie* (MU 2822/1-1 and SFB 632, A6).⁷⁸

These differences can be explained if one assumes that there is a single verbal projection (the projection of a single verbal head) present in the prefield. The verbal projection contains a middle-field, right verbal bracket occupied by the empty head, and even a postfield in certain cases. The order of the fronted elements is therefore subject to the same restrictions that are known for the ordering of elements in the middle-field/postfield:

⁷⁸The database is available at <https://clarin.ids-mannheim.de/SFB632/A6>.

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- (47) a. weil sich nur selten alle Träume gleichzeitig
because REFL only seldom all dreams simultaneously
verwirklichen lassen
realise let
'because only seldom can all of your dreams be realised at the same time'
- b. ?? weil sich nur selten gleichzeitig alle Träume
because REFL only seldom simultaneously all dreams
verwirklichen lassen
realise let
- (48) a. weil es dauerhaft mehr Arbeitsplätze erst gebe, wenn
because it constantly more jobs PRT give if
'because there will only be a constant supply of jobs if/when ...'
- b. ?* weil es mehr Arbeitsplätze dauerhaft erst gebe, wenn
because it more jobs constantly PRT give if

3.1.15 Summary of the data discussion

I have shown that various kinds of constituents can co-occur in the prefield: arguments, adjuncts and predicates can be fronted together with another constituent. The number of constituents preceding the finite verb is by no means limited to two.

The sequence of the fronted elements corresponds to the order the constituents would have in the middle-field. This supports an analysis which assumes that multiple fronting involves a complex verbal projection, which contains its own topological fields: middlefield, right verbal bracket and postfield. The right verbal bracket is occupied by a silent verbal head.

I showed that multiple fronting with idioms is quite common and that certain parts of phraseologisms cannot be fronted individually. The constituent parts of a phraseologism can be realised inside this projection, but individual fronting is not possible.

The observation that only elements from the same clause can be fronted together can also be explained by the assumption of a silent verbal head.

3.2 The analysis

A prerequisite for the analysis of apparent multiple frontings are the following sub-analyses: 1) an analysis of V1-order derived by verb movement, 2) an analysis of the verbal complex by means of argument attraction and 3) an analysis of fronting as a long-distance dependency. These three ingredients have already been provided in Chapter 2 and I will show in Subsection 3.2.1 how they interact in the analysis of apparent multiple frontings. Section 3.2.2 discusses a potential problem with left dislocation, Subsection 3.2.3 talks about extraposition in complex prefields and Subsection 3.2.4 deals with traces in unwanted positions.

3.2.1 Multiple frontings as lexical rule and predicate complex formation

It was shown in the data discussion in Section 3.1.11 that elements can only be fronted together if they are dependent on the same head/predicate complex.⁷⁹

Fanselow (1993) and Hoberg (1997: 1634) have therefore suggested positing a silent head which can then be combined with the arguments and adjuncts which actually belong to the verb. In what follows, I will attempt to formalize and define this analysis more precisely. Like Hoberg, I assume that the silent head is a part of the predicate complex and that fronting is analogous to partial fronting of a predicate complex. Example (10b) would therefore have the following structure:

- (49) [_{VP} [Zum zweiten Mal] [die Weltmeisterschaft] _{-V}]_i errang_j Clark
 to.the second time the world.championship won Clark
 1965 _{-i} _{-j}.
 1965

_{-j} represents the movement trace, which is left behind by the verb *errang* in initial position. _{-i} is the trace of the extraction of *zum zweiten Mal die Weltmeisterschaft* ‘for the second time the world’s championship’, which also binds it. _{-V} stands for the silent verbal head in the prefield. Fanselow (1993: 69) suggests treating this empty head in a similar way to the empty elements present in gapping constructions and argues against a fronting analysis with verb trace with the following examples of particle verbs:

⁷⁹The examples from Jacobs with sentence adverbs behave differently. It is certainly possible that there are cases where focus particles or sentence adverbs and a constituent from an embedded clause occur together before the finite verb.

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- (50) a. * Die Anette an sollte man lieber nicht mehr rufen.
 the Anette on should one rather not more call
 Intended: ‘It’s probably better if you don’t call Anette.’
- b. * Mit dem Vortrag auf sollte er lieber hören.
 with the presentation on should he rather stop
 Intended: ‘It would be better if he were to end his presentation.’
- c. * Dem Minister einen Aufsichtsratsposten zu hätte er niemals
 the minister a supervisory.board.post to had he never
 schanzen sollen.
 ensure should
 Intended: ‘He should have never made sure that the minister got a
 position on the supervisory board.’

Fanselow argues that an analysis which treats fronting of multiple constituents as including movement of a corresponding trace should predict that the sentences in (50) are grammatical.⁸⁰ As these sentences are clearly ungrammatical, Fanselow assumes that these kinds of movement analyses are not adequate. However, the following examples in (51) show that particles can indeed occur with other constituents in the prefield.

- (51) a. Gut *zurecht kommt* derjenige, der das Leben mit all seinen
 good to.right comes the.one who the life with all its
 Überraschungen annimmt und dennoch verantwortungsvoll mit
 surprises accepts and PRT responsibly with
 sich umgeht.⁸¹
 REFL treats
 ‘Those who accept life with all its little surprises, yet still act
 responsibly, are the ones who will cope best.’
- b. Ich bin alleinstehende Mutter, und so gut *klar komm* ich nicht.⁸²
 I am single mother and so good clear come I not
 ‘I am a single mother and I am really not coping that well.’
- c. Den Atem *an hielt* die ganze Judenheit des römischen
 the breath in held the whole Jewish.people of.the Roman

⁸⁰ Although see Fanselow (2003b) for an analysis of particle fronting as pars-pro-toto movement.

⁸¹ Balance, brochure of TK-series for healthy living, Techniker Krankenkasse. 1995.

⁸² radio show, 02.07.2000, I would like to thank Andrew McIntyre for this example.

- Reichs und weit hinaus über die Grenzen.⁸³
 empire and wide further over the borders
 ‘The entire Jewish population of the Roman Empire held their breath
 and the same was true far past its borders.’
- d. Nicht *umhin konnte* Peter, auch noch einen Roman über das
 not around could Peter also PRT a novel over the
 Erhabene zu schreiben.⁸⁴
 sublime to write
 ‘Peter couldn’t get around writing another novel about the sublime.’
- e. Die Zeitschrift ›Focus‹ hat vor einiger Zeit auch die
 the magazine ›Focus‹ has before some time also the
 Umweltdaten deutscher Städte miteinander verglichen.
 environmental.data German cities with.eachother compared
 Dabei *heraus kam* u. a., daß Halle an der Saale
 there.at out came amongst.other.things that Halle an der Saale
 die leiseste Stadt Deutschlands ist.⁸⁵
 the quietest city Germany’s is
 ‘Not too long ago, the magazine *Focus* compared environmental data
 on various German cities. As a result, they found out, among other
 things, that Halle an der Saale was the quietest city in Germany.’
- f. *Los damit geht* es schon am 15. April.⁸⁶
 off there.with goes it PRT on 15. April
 ‘The whole thing starts on the 15th April.’
- g. Sein Vortrag wirkte [...] ein wenig arrogant, nicht zuletzt
 his presentation seemed a bit arrogant not lastly
 wegen seiner Anmerkung, neulich habe er bei der Premiere
 because.of his comment recently has he at the premiere
 des neuen „Luther“-Films in München neben Sir Peter Ustinov
 of.the new Luther.film in Munich next.to Sir Peter Ustinov
 und Uwe Ochsenknecht gesessen. Gut *an kommt* dagegen die
 and Uwe Ochsenknecht sat good on comes there.against the

⁸³Lion Feuchtwanger, *Jud Süß*, p. 276, cited in Grubačić (1965: 56).

⁸⁴(Grewendorf 1990: 90).

⁸⁵Max Goldt, *Die Kugeln in unseren Köpfen*. Munich: Wilhelm Heine Verlag. 1997, p. 18.

⁸⁶taz, 01.03.2002, p. 8.

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Rede des Jokers im Kandidatenspiel: des Thüringer
speech of.the joker in candidate.game of.the Thüring
Landesbischofs Christoph Kähler (59).⁸⁷
state.bishop Christoph Kähler (59)

‘His presentation came across somewhat arrogant. Not least because of his comment that he recently sat next to Sir Peter Ustinov and Uwe Ochsenknecht at the premiere of the new Luther film. What did get a good reception was the speech by the wild card in the election race: the Thüringen state bishop Christoph Kähler (59).’

- h. Erschwerend *hinzu kommt* der Leistungsdruck, dem auch die
difficultly there.to comes the pressure.to.perform that also the
Research-Abteilungen unterliegen.
Research-departments underlie

‘What makes it even more difficult is the pressure to perform, which the research departments are also under.’

- i. Immer noch mit Abstand *vorn liegt* Reiseunternehmer
always still PRT with distance in.front lies
Kuoni.⁸⁸
travel.company Kuoni

‘The travel company Kuoni is always ahead by some distance.’

- j. Den Umschwung im Jahr 1933 stellt Nolte als
the turnaround in.the year 1933 presents Nolte as
„Volkserregung“ und „Volksbewegung“ dar. (...) Nicht
excitment.of.the.people and people’s.movement PRT not
hinzu setzt Nolte Zeugnisse republiktreuer
here.to places Nolte testimonies loyal.to.the.repubulic
Sozialdemokraten und Zentrumsleute, die im Januar 1933 von
social democrats and centre.people who in January 1933 of
lähmendem Entsetzen befallen (...) waren.⁸⁹
paralysing horror struck were

‘Nolte presents the turnaround in 1933 as ‘animation of the people’ and a ‘people’s movement’. Nolte does not include testimonies of Social Democrats and people positioned the centre of the political

⁸⁷taz, 04.11.2003, p. 3.

⁸⁸(Clément & Thümmel 1975: 126).

⁸⁹Die Zeit, 19.03.1993, p. 82. Cited in Hoberg (1997: 1633).

spectrum, who were struck by paralysing horror in January 1933.’

These data show that structures with a fronted particle cannot be ruled out in general. I assume that such structures have to be made available by syntax in general and that there are certain stipulations for fronting which are responsible for Fanselow’s examples being ungrammatical. For more on fronting of verb particles and further data, see Müller (2002a,d).

I will assume then that there is an ordinary verb trace in the prefield and will follow Hoberg in assuming that the example of fronting in (49) should be analyzed parallel to the fronting of a partial projection of a verbal complex. Hoberg describes the idea for her analysis in a footnote and does not go into any details. In particular, it remains unexplained how the trace in (49) is licensed.

In what follows, I wish to delve a little deeper into the details of the analysis. I will start with a discussion of the less complex examples in (52).

- (52) a. dass Clark 1965 zum zweiten Mal die Weltmeisterschaft
that Clark 1965 to.the second time the world.championship
errungen hat
won has
‘that Clark won the world championship for the second time in 1965’
- b. [_{VP} [Zum zweiten Mal] errungen]_i hat_j Clark die
to.the second time won has Clark the
Weltmeisterschaft 1965 _{-i} _{-j}.
world.championship 1965
- c. [_{VP} [Zum zweiten Mal] [die Weltmeisterschaft] errungen]_i hat_j
to.the second time the world.championship won has
Clark 1965 _{-i} _{-j}.
Clark 1965

In (52a), the relations between the various elements should be clear. The auxiliary verb *hat* ‘has’ selects the participle *errungen* ‘won’ and they together form a verbal complex. The arguments of the verbal complex can be permuted in the middle-field and adjuncts can appear between the arguments. In (52b), the auxiliary is in initial position. The verb with which *hat* would have normally formed a complex is now in the prefield. The extraction trace _{-i} has the same arguments as the verb in initial position, namely *Clark* and *die Weltmeisterschaft* ‘the world championship’. The verb trace _{-j}, which corresponds to *hat* in initial position, forms a verbal complex with the extraction trace _{-i}, which then requires these two arguments. For this reason, *Clark* and *die Weltmeisterschaft* can now appear

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in the middle-field. In (52c), the extraction trace $_{-i}$ corresponds to the verb phrase *zum zweiten Mal die Weltmeisterschaft errungen* ‘for the second time the world championship’. When the auxiliary is combined with this trace, it is not possible for a further complement to be attracted, since *die Weltmeisterschaft* is already a complement of *errungen*. Therefore, only the subject of *errungen* can appear in the middle-field. (49) can be explained as follows: I assume an empty verb in the prefield, which takes *die Weltmeisterschaft* as complement and *zum zweiten Mal* as an adjunct. The properties of this head are determined by the other material in the main clause, i.e. the arguments of *errang* which occur in the middle-field cannot be realised in the prefield – and adjuncts which occur in the prefield must be compatible with the semantic properties of *errang*. Sentences such as (53) are not possible:

- (53) a. * Zum zweiten Mal die Weltmeisterschaft errang Clark 1965 die
to.the second time the world.championship won Clark 1965 the
Goldmedaille.
gold.medal
Intended: ‘Clark won the gold medal for the second time during the
world championships in 1965.’
- b. * Drei Stunden lang die Weltmeisterschaft errang Clark 1965.
the hours long the world.championship won Clark 1965
Intended: ‘Clark won the world championship for three hours in
1965.’

In (53a), both *die Weltmeisterschaft* ‘the world championship’ and *die Goldmedaille* ‘the gold medal’ would fulfil the role of object and in (53b), the adjunct *drei Stunden lang* is not compatible with *errang*.

We can only explain this if we assume some relation between *errang* (or the verb trace $_{-j}$) and the extraction trace $_{-i}$ in (49), repeated here as (54). The extraction trace is in a filler-gap relation to the complex projection in the prefield. What is missing is a relation between the extraction trace $_{-i}$ and the overt verb.

- (54) [_{VP} [Zum zweiten Mal] [die Weltmeisterschaft] $_{-V}$]_i errang_j Clark
to.the second time the world.championship won Clark
1965 $_{-i}$ $_{-j}$.
1965

It is for this reason that I suggest a lexical rule which licenses a further lexical item for each verb that is able to select a trace with which it forms a predicate complex. The trace has to have the same valence as the original verb and all

arguments which are not realised together with the trace are attracted by the verb. (55) shows the syntactic aspects of this lexical rule:

(55) Lexical rule for multiple fronting (preliminary version):

$$\left[\begin{array}{c} \text{SYNSEM|LOC } \boxed{1} \\ \left[\begin{array}{c} \text{CAT|HEAD} \left[\begin{array}{c} \textit{verb} \\ \text{INITIAL } \boxed{2} \\ \text{VFORM } \boxed{3} \end{array} \right] \end{array} \right] \end{array} \right] \mapsto \\
 \left[\begin{array}{c} \text{SYNSEM|LOC|CAT} \\ \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \textit{verb} \\ \text{INITIAL } \boxed{2} \\ \text{VFORM } \boxed{3} \end{array} \right] \\ \text{SPR} \quad \langle \rangle \\ \text{COMPS } \boxed{4} \oplus \left\langle \begin{array}{c} \text{LOC|CAT} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \textit{verb} \\ \text{DSL } \boxed{1} \end{array} \right] \\ \text{COMPS } \boxed{4} \end{array} \right] \end{array} \right\rangle \\ \text{LEX } + \end{array} \right] \end{array} \right]$$

The trace of the silent verbal head $_V$ in (54) is identical to the trace which is responsible for verb movement in the analysis of verb-first order. The details of verb movement are explained in Section 2.2.2. There, I give the following entry for the verb trace:

(56) Head movement trace as suggested by Meurers (2000: 207):

$$\left[\begin{array}{c} \text{PHON } \langle \rangle \\ \text{SYNSEM|LOC } \boxed{1} \left[\text{CAT|HEAD|DSL } \boxed{1} \right] \end{array} \right]$$

Figure 3.1 shows the analysis of (54) when using this trace. I assume that the output of the lexical rule in (55) forms the input of the verb-first lexical rule. The rule for verb movement, which is also explained in detail in Section 2.2.2, has the following form:

(57) Lexical rule for verb in initial position:

$$\left[\begin{array}{c} \text{SYNSEM|LOC } \boxed{1} \\ \text{CAT|HEAD} \left[\begin{array}{c} \textit{verb} \\ \text{VFORM } \textit{fin} \\ \text{INITIAL } - \end{array} \right] \end{array} \right] \mapsto \left[\begin{array}{c} \text{SYNSEM|LOC} \\ \text{CAT} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \textit{verb} \\ \text{VFORM } \textit{fin} \\ \text{INITIAL } + \end{array} \right] \\ \text{SPR} \langle \rangle \\ \text{COMPS} \left\langle \begin{array}{c} \text{LOC} \left[\begin{array}{c} \text{CAT} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \textit{verb} \\ \text{DSL } \boxed{1} \end{array} \right] \\ \text{COMPS} \langle \rangle \end{array} \right] \\ \text{CONT } \boxed{2} \end{array} \right] \end{array} \right\rangle \end{array} \right] \\ \text{CONT } \boxed{2} \end{array} \right]$$

It is important that the verb trace on the far right corresponds to the right-hand side of the rule in (55).

The verb trace in the prefield is combined with *die Weltmeisterschaft* ‘the world championship’ as an argument and *zum zweiten Mal* ‘for the second time’ as an adjunct to form the phrase *zum zweiten Mal die Weltmeisterschaft* ‘for the second time the world championship’. The entire phrase is the filler in a long-distance dependency that was introduced by the extraction trace directly next to *Clark*. The local properties of the filler (5) are identical to those of the extraction trace. The arguments of the extraction trace attracted by the lexical entry for *errang* are licensed by the lexical rule (55) (see 3 in the trace for verb movement furthest to the right). Therefore, the COMPS list of the trace of verb movement and the extraction trace contain exactly those elements which cannot appear as arguments of the verb trace in the prefield, namely 1 in Figure 3.1.

As we have seen from the discussion of (53), there has to be a connection between the trace in the prefield and the verb in the remainder of the sentence. This connection is established in the same way as the connection between the verb in initial position and the verb trace at the end of sentence: the head feature DSL is used to represent the required information. Figure 3.2 shows the identity of the respective DSL features (7) in addition to the valence information and the

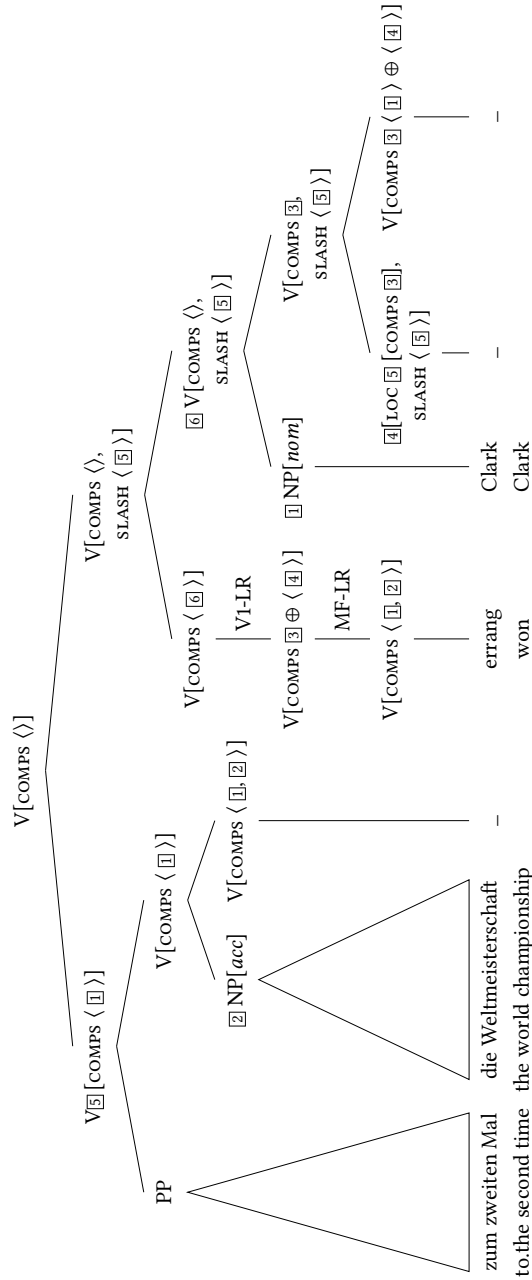


Figure 3.1: Analysis of multiple frontings with an empty head

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NONLOC information.

The properties of the verb *errang* are listed under DSL in the COMPS value of the item licensed by the lexical rule in (55). The complement in the predicate complex ([4]) is realized by an extraction trace. The LOCAL value of this trace ([5]) is identical to the LOCAL value of the filler. Since DSL is a head feature and therefore inside of the LOCAL value, the DSL value of the complement of the verbal complex of *errang* is identical to the DSL value of the phrase *zum zweiten Mal die Weltmeisterschaft*. As DSL is a head feature, it is also ensured that the DSL value is identical in all the projections of the verb trace in the prefield. In the verb trace (56), the structure sharing between LOCAL and DSL ensures that the COMPS value of the verb trace matches the valence information under DSL. In this way, we can ensure that the trace allows only those elements which were required by the original verb.

The representation of meaning of the constituents in the prefield and in the trace is done in an analogous manner: The semantic content ([5]) in (58) is taken over from the projection of the trace that is selected by the verb in initial position. (58) shows the corresponding modified lexical rule:

(58) Lexical rule for multiple fronting:

$$\left[\begin{array}{c} \text{SYNSEM|LOC } [1] \\ \text{CAT|HEAD } \left[\begin{array}{c} \text{verb} \\ \text{INITIAL } [2] \\ \text{VFORM } [3] \end{array} \right] \end{array} \right] \mapsto \left[\begin{array}{c} \text{SYNSEM|LOC} \\ \text{CAT} \left[\begin{array}{c} \text{HEAD } \left[\begin{array}{c} \text{verb} \\ \text{INITIAL } [2] \\ \text{VFORM } [3] \end{array} \right] \\ \text{SPR } \langle \rangle \\ \text{COMPS } [4] \oplus \left\langle \begin{array}{c} \text{LOC } \left[\begin{array}{c} \text{CAT} \left[\begin{array}{c} \text{HEAD } \left[\begin{array}{c} \text{verb} \\ \text{DSL } [1] \end{array} \right] \\ \text{COMPS } [4] \end{array} \right] \\ \text{CONT } [5] \\ \text{LEX } + \end{array} \right\rangle \end{array} \right] \end{array} \right] \\ \text{CONT } [5] \end{array} \right]$$

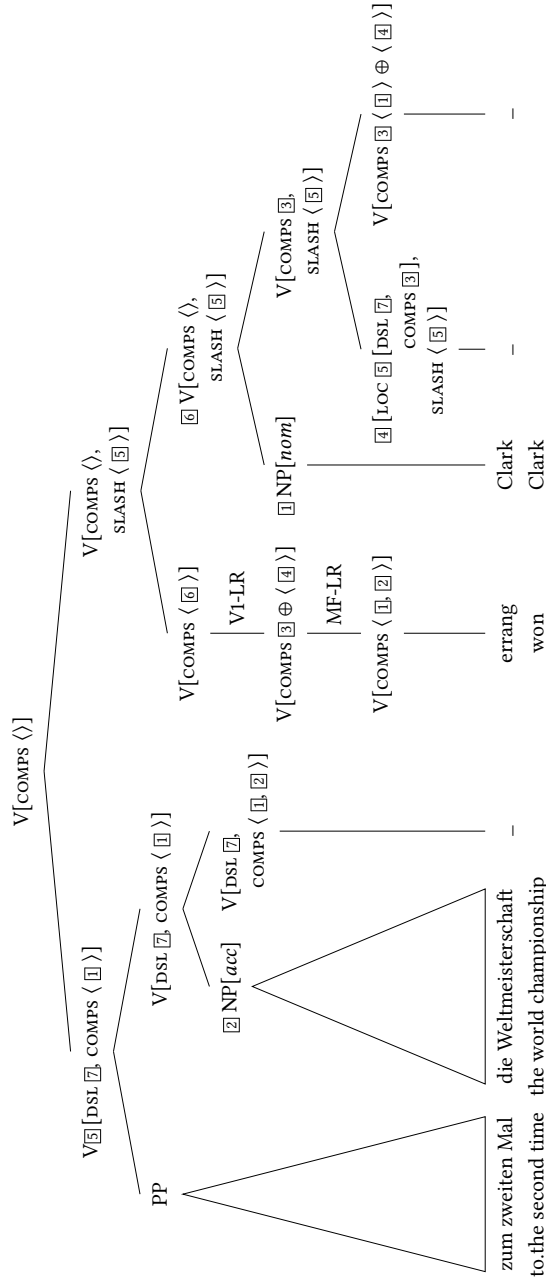


Figure 3.2: Representation of valence information

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Inside the trace in (56), a connection is made between the meaning of the original verb, which is represented under DSL, and the meaning of the trace, which is represented under LOCAL. Figure 3.3 shows the aspects of the semantic representation with the modified lexical rule and the trace (56).

The verb *errang* ‘won’ licensed by the lexical rule requires an empty head. This empty head contains the representation of the syntactic and semantic properties of the original verb inside its DSL value— importantly also its semantic content *erringen*(x, y), whereby x is linked to the subject and y to the object. This means that by assigning its arguments, x refers to *Clark* (abbreviated to c), while y refers to *die Weltmeisterschaft* (abbreviated to w). Since the LOCAL value of the extraction trace is identical to the LOC-Wert of the filler and therefore its DSL is located inside its LOC, the DSL value of the extraction trace is also identical to the DSL value of the filler. Since DSL is a head feature, it is present at all nodes inside of the verbal projection in the prefield and on the verb trace in the prefield. Inside the verb trace, the CONT value under DSL is identified with the CONT value of the trace itself. The computation and projection of the semantic content inside of the complex constituent in the prefield then follows via the normal principles of HPSG: The combination of the trace with its complement *die Weltmeisterschaft* results in the projection of the CONT value of the head (*erringen*(c, w)). When then combined with the adjunct *zum zweiten Mal* ‘for the second time’, the semantic content of the adjunct ($2^*erringen(c, w)$) is projected. The semantic representation of the filler is identical to the semantic representation of the extraction trace. Through specification in our lexical rule, the semantic content of the verb is associated with the semantic content of the selected (projection of the) verb trace (5), i.e., the trace that stands for *errang* adopts the semantic representation of the extraction trace ($2^*erringen(c, w)$). This meaning is then projected along the head chain up to the verb in initial position and from there it is projected to the entire clause.

As was shown by examples (11a) and (11c) on page 61 as well as the examples in (26) on page 70, the elements in the prefield do not have to be adjacent to the verb on which they are dependent. A modal or auxiliary verb can occupy the initial position. The verb which selects the elements in the prefield is then located in the right verbal bracket. Figure 3.4 shows how the example in (59) (which conforms to this pattern) should be analyzed.

- (59) Zum zweiten Mal die Weltmeisterschaft hat Clark 1965 errungen.
to.the second time the world.championship has Clark 1965 won
‘Clark won the world championship in 1965 for the second time.’

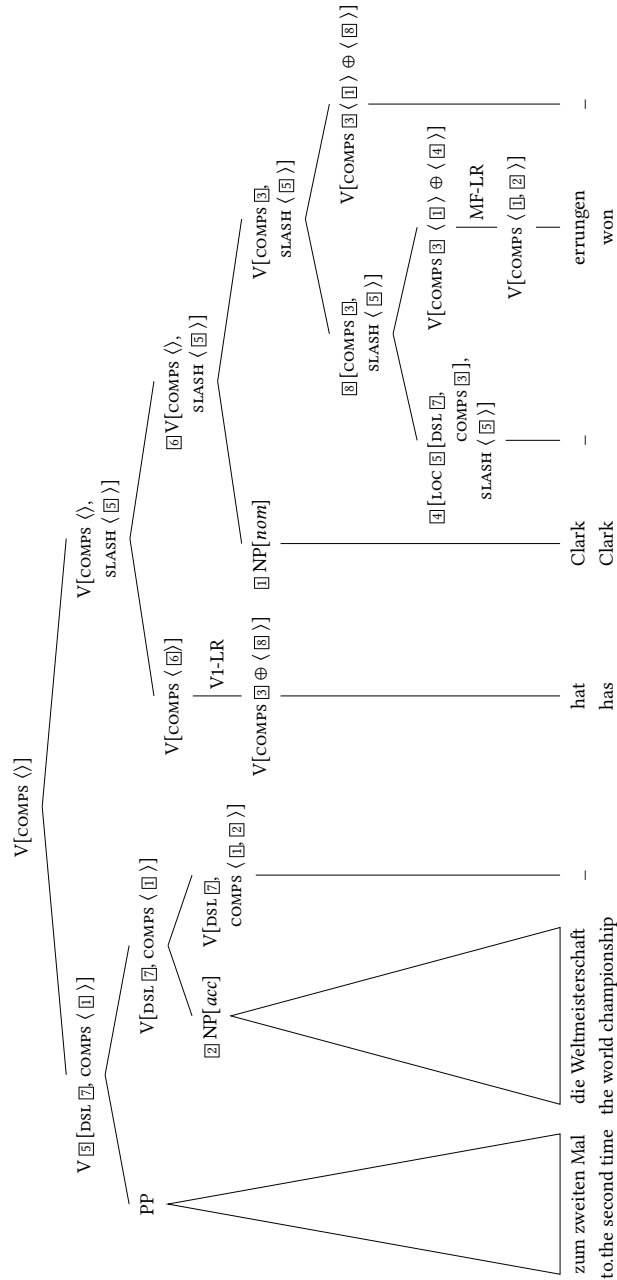


Figure 3.4: Analysis of *Zum zweiten Mal die Weltmeisterschaft hat Clark 1965 errungen*. ‘Clark has won the world championship in 1965 for the second time.’

In contrast to the analysis discussed here, the lexical rule for putative multiple fronting is not applied to the finite verb (which was present in initial position), but rather to the non-finite verb in final position. The verb which is the output of the lexical rule requires a verbal complex (something that is LEX +) and attracts its previously non-realised arguments ([3]). This verbal complex is realised as the extraction trace. The combination of the extraction trace and *errungen* ‘won’ forms a verbal complex, which becomes the complement of the verb trace, which corresponds to *hat* ‘has’ in initial position. The complex consisting of extraction trace, *errungen* and verb trace is then combined with the arguments, i.e. *Clark*, not realised in the prefield. The percolation of the SLASH and DSL values proceeds parallel to the previously discussed example.

It still remains to be seen how we can rule out the following structure:

- (60) * dass Clark 1965 zum zweiten Mal die Weltmeisterschaft [_V hat]
 that Clark 1965 for.the second time the world.championship has

Without further restrictions, the silent head could be combined with the auxiliary *hat* and take the place of *errungen*. This structure can however be ruled out under the assumption that all verbs directly specified in the lexicon which are able to select other verbs require that the embedded verb should have *none* as its DSL value. In this way, it is ensured that the trace cannot be combined with the normal verb-final *hat* ‘has’, but rather only with lexical items licensed by the lexical rule in (58).

The other data discussed in Section 3.1 can be analyzed entirely parallel to the examples discussed here: adjuncts/arguments are linked to an empty verbal head, just as would be the case for their ordering in the middle-field and their single fronting. The complex projection in the prefield enters a long-distance dependency with the extraction trace in the verbal complex. If there is any motivation for analysing the data discussed in Section 3.3 as instances where a non-verbal constituent precedes the finite verb, this would still be compatible with the analysis presented here. These examples would have to be explained using the mechanisms presented in Chapter 2, i.e. as standard fronting with a basic extraction trace. My claim in Section 3.3 that these analyses cannot be applied to all the data presented in Section 3.1 remains valid.

Finally, I would like to clarify one more point about the status of the lexical rule for multiple fronting. This rule is entirely parallel to the verb movement rule, which is needed to derive the position of the finite verb. The verb-first rule differs from the multiple fronting rule in that the verb-first rule mentions finiteness features and the INITIAL feature relevant for its positioning. Furthermore, the COMPS list of the embedded projection ([4] in (58)) is instantiated as an empty list. This

difference in the constraint of the COMPS list corresponds to the difference between verbs which form verbal complexes (the so-called coherent construction) and verbs which embed phrases (the so-called incoherent construction).

3.2.2 Left dislocation

Marga Reis (p. c. 2003) has pointed out that the following examples could pose a problem for the analysis I have developed here:

- (61) a. Zum zweiten Mal die Weltmeisterschaft, die gewann Clark
to.the second time the world.championship.F that.F won Clark
1965.
1965
'Clark won the world championship for the second time in 1965.'
- b. * Zum zweiten Mal die Weltmeisterschaft, das gewann Clark
to.the second time the world.championship.F that.N won Clark
1965.
1965

If a verb phrase is referred to in so-called left-dislocation structures, the pronoun *das* (neuter) is obligatory:

- (62) a. Die Torte essen, das will Peter nicht.
the cake eat that.N wants Peter not
'Peter doesn't want to eat the cake.'
- b. * Die Torte essen, die will Peter nicht.
the cake eat that.F wants Peter not

If *zum zweiten Mal* and *die Weltmeisterschaft* were part of a verbal constituent, then – just as in (62a) – we would assume that *das* is obligatory in left-dislocation. (61b) clearly shows that this is not the case.

One could argue that this difference can be traced back to the fact that the pronoun refers to an overt element. The left-dislocated constituent could then be a verbal projection, however, since this verbal projection does not contain an overt verb and the closest overt phrase is the feminine NP *die Weltmeisterschaft*, one has to use the feminine demonstrative pronoun *die*.⁹⁰

⁹⁰ A reviewer from *Linguistische Berichte* pointed out the following kind of gapping data:

- (i) Der Eva Buntstifte gekauft und der Rita Bauklötze, das hat Otto heute in der
the Eva crayons bought and the rita building.blocks that.N has Otto today in the

Unfortunately, instances of multiple fronting do not show uniform behaviour when used in left-dislocation constructions (as pointed out by a reviewer from *Linguistische Berichte*). Examples like (11b) optionally allow *das*, whereas this is the only possibility with example (28a):

- (63) a. Dauerhaft mehr Arbeitsplätze, das gebe es erst, wenn sich eine
constantly more jobs that.N gives it first when REFL a
Wachstumsrate von mindestens 2,5 Prozent über einen Zeitraum
growth.rate of at.least 2.5 percent over a time.period
von drei oder vier Jahren halten lasse.
of three or four years hold lets
‘In the long run, there will only be more jobs available when a
growth rate of at least 2.5 percent can be maintained over a period
of three or four years.’
- b. Dauerhaft mehr Arbeitsplätze, die gebe es erst, wenn sich
constantly more jobs that.PL gives it first, when REFL
eine Wachstumsrate von mindestens 2,5 Prozent über einen
a growth.rate of at.least 2.5 percent over a
Zeitraum von drei oder vier Jahren halten lasse.
time.period of three or four years hold lets
- c. ? Dem Zeitgeist Rechnung, das tragen im unterfränkischen
the Zeitgeist attention that.N carry in.the lower.Franconian
Raum die privaten, städtischen und kommunalen Musikschulen.
area the private urban and communal music.schools
‘The private urban and communal music schools in the lower
Franconian area account for the Zeitgeist.’

Stadt.
city

‘Otta went to town today and bought crayons for Eva and building blocks for Rita.’

It is possible here to argue that the fronted constituent contains a verb. The verb is not in final position, but still relevant for the anaphoric relation. Furthermore, the verb and pronoun do not have to be adjacent in cases of extraposition:

- (ii) Geschlafen in der Vorlesung, das hat sie nicht.
slept in the lecture.F that.N has she not
‘She didn’t sleep during the lecture.’

The overtly realised verb is however still anaphorically accessible.

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- d. * Dem Zeitgeist Rechnung, die tragen im unterfränkischen
the Zeitgeist attention.F that.F carry in.the lower.Franconian
Raum die privaten, städtischen und kommunalen Musikschulen.
area the private urban and communal music.schools

The considerable deviance of (63d) could be down to the fact that we are dealing with an idiomatic construction here and that referring to individual parts of an idiom often results in ungrammaticality. As for why there is more than one possibility for the other examples, this will have to be shown by future research.

So if we would take the existence of clauses with *das* as a criterion, the data in (63) would support the analysis that treats the complex *Vorfeld* as a unit since (63a,c) show that reference with *das* is indeed possible. The alternative realization of *die* in (63b) can be explained as a proximity effect where a meaning corresponding to (64) is taken up by the demonstrative pronoun.

- (64) mehr dauerhafte Arbeitsplätze
more constantly jobs

Note, however, that we are dealing with special cases of left dislocation anyway. According to the analysis suggested here, the meaning of the empty verb in the fronted constituent corresponds to the meaning of the overt verb in the remainder of the clause. For (61b), we would have *zum zweiten Mal die Weltmeisterschaft* ‘for the second time the world championship’ meaning *zum zweiten Mal die Weltmeisterschaft gewonnen* ‘for the second time the world championship won’. This meaning is then referred to by *das*. But such a meaning of *das* would be incompatible with *gewann Clark 1965* ‘won Clark in 1965’ since *win* selects for a competition and not an event of winning a competition (This was pointed out by Joachim Jacobs in personal communication to Julia Winkler, see Winkler (2014: 39)). Of course the same argument applies to (63c): in principle, this example should be excluded as well. I guess what is happening here is that we are dealing with very marked structures that cannot be processed according to usual grammar rules. So instead of a reading that would correspond to (65), *dauerhaft mehr Arbeitsplätze* may be perceived as a complex situation of a certain duration in which there are more jobs and *das* refers to this situation.

- (65) * Dauerhaft mehr Arbeitsplätze geben, das gebe es erst, wenn ...
constantly more jobs give this gives it first if

3.2.3 Extraposition inside the complex prefield

Tibor Kiss (p. c. 2002) has pointed out that the analysis with a verb trace allows sentences such as (66):

- (66) * Dem Mann etwas _{-V}, der dort steht, hat sie zugeflüstert.
 the man something that there stands has she whispered
 ‘She whispered something to the man standing over there.’

In (66), the silent verb head forms the right verbal bracket and the relative clause belonging to *Mann* is in the postfield of the verbal projection. These examples should be grammatical in the same way (67) is:

- (67) Dem Mann etwas zugeflüstert, der dort steht, hat sie.
 the.DAT man something whispered that there stands has she
 ‘She whispered something to the man standing over there.’

This argument against the analysis with a verbal head in the *Vorfeld* can be rejected right away since there are examples like (51f) – repeated here as (68) – that clearly show that extraposition in the complex *Vorfeld* is possible:

- (68) [Los] [damit] geht es schon am 15. April.⁹¹
 off there.with goes it PART on 15. April
 ‘The whole thing starts on the 15th April.’

The particle *los* marks the right sentence bracket and *damit* is located inside the *Nachfeld* in the complex *Vorfeld*.

Nevertheless, there remains the question why (66) is impossible. First, multiple fronting with indefinite pronouns like *etwas* seems to be impossible. (66) is ungrammatical even without extraposition of the relative clause:

- (69) * Dem Mann etwas hat sie zugeflüstert.
 the.DAT man something has she whispered

If one modifies the preceding example so that one has two full noun phrases with a contrastive interpretation, one observes an improvement in acceptability (and – as noted in the Section 3.1.6 – there are attested examples of this pattern):

- (70) ? Dem Mann die Nachricht hat sie zugeflüstert.
 the.DAT man the.ACC message has she whispered
 ‘She whispered the message to the man.’

⁹¹taz, 01.03.2002, p. 8.

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If we add a relative clause to one of the noun phrases, we see that the already marginally acceptable example becomes even worse:

- (71) ?* *Dem Mann, der dort steht, die Nachricht hat sie zugeflüstert.*
the.DAT man that there stands the message has she whispered
'She whispered the message to the man standing there.'

Our example becomes completely ungrammatical if we then try and extrapose the relative clause:

- (72) * *Dem Mann die Nachricht, der dort steht, hat sie zugeflüstert.*
the.DAT man the.ACC message that there stands has she whispered

Example (67) differs from (72) in that *dem Mann* 'the man' is stressed in (67), whereas *etwas* is unstressed. Following the generalization proposed by Avgustinoва und Oliva, the elements involved in multiple fronting have to bear the same communicative importance, which is not the case for (66) and (72).

While further work is needed for the formalization of the respective constraints, it is clear that extraposition inside of complex *Vorfelds* is possible and hence the assumptions of structures like the one that is assumed in the current analysis is legitimate.

3.2.4 Traces in undesired positions

The analysis in (73) is ruled out by the fact that the second lexical item for *errang* (licensed by the rule in (58)) selects a LEX+ element.

- (73) *dass Clark 1965 [[zum zweiten Mal die Weltmeisterschaft _v]
that Clark 1965 to.the second time the world.championship
errang]
won
'that Clark won the world championship for the second time in 1965'*

This structure is ruled out for the same reason as embedding of verbal projections in obligatorily coherent constructions.

There is however still the analysis in (74), which is entirely parallel to verbal complex formation and therefore cannot be ruled out by a LEX feature.

- (74) *dass Clark 1965 zum zweiten Mal die Weltmeisterschaft [[_v
that Clark 1965 to.the second time the world.championship
errungen] hat].
won has*

Furthermore, we have not yet encountered anything that would rule out the possibility of a verbal trace in the prefield as a filler for a long-distance dependency.

- (75) $_V$ hat Clark 1965 zum zweiten Mal die Weltmeisterschaft [$_i$
 has Clark 1965 to.the second time the world.championship
 errungen]
 won

Fanselow (1987: 100) discussed cases with one fronted PP and noticed that such sentences are ambiguous since they could be analyzed as structures in which a single constituent is fronted or as structures in which a complex constituent containing one element is fronted.

As has already been suggested, there are various conditions for cases of supposed multiple fronting that rely on the thematic status of the constituents preceding the finite verb. If we require that there be certain relations between such constituents, then the corresponding constraints would prohibit any case where there are no constituents in the prefield, i.e., where the verb trace does not project. (75) and also examples with a verb trace and a single constituent are also ruled out by general constraints on putative cases of multiple fronting.

3.3 Alternatives

The problem posed by the present data for all theories assuming verb-second order cannot simply be solved by marking problematic examples with “*” as Buntgarten (1973: 37) does for examples like (10b). There are just too many attested examples and for this reason this data may not be ignored. There have been several proposals in the 1980ies and 1990ies and I will discuss each in turn.

3.3.1 Movement of parts of the *Mittelfeld* and the verbal complex

Lötscher (1985) has sketched the beginnings of a theory, which – under certain conditions – would allow for an unlimited amount of constituents to be fronted.⁹² His proposal makes use of several rules, which have to be applied in a set order. These kinds of analyses are by their very nature incompatible with theories based in a HPSG framework, since the principles of HPSG are unordered and hold equally for all structures. Lötscher assumes that any chain in the left edge of the verbal complex can be fronted. These chains can contain verbs, which would explain the fronting of partial projections. The adjacency of elements of the chain

⁹² Also see Eisenberg (1994: 412–413) for suggestion of a similar analysis.

to the verbal complex could have come about by movement operations in the middle-field. Dürscheid (1989: 92) has criticised Fanselow's (1987) approach, and this criticism can also be applied to Lötscher's proposal: if fronting were in fact movement of any continuous chain from the left periphery of a verbal complex into the initial position of a sentence, then (76c) would be the underlying structure for the fronting operation in (76b).

- (76) a. dass ein Professor seinen Schüler nicht prüfen muss
 that a professor his student not test must
 'that a professor does not have to test his student'
 b. Seinen Schüler prüfen muss ein Professor nicht.
 his student test must a professor not
 c. dass ein Professor nicht seinen Schüler prüfen muss
 that a professor not his student test must

The sentential negation precedes the verbal complex in example (76a). In (76c), the negation has scope over *seinen Schüler* 'his student' and therefore does not correspond to the expected base order for (76b). According to Dürscheid (1989: 103), a similar argumentation goes back to (Thiersch 1986).

3.3.2 Complex PPs formed from several PPs

Wunderlich (1984: 79) suggested treating the fronted phrases in (77) as a single constituent, more specifically, a prepositional phrase.

- (77) a. [_{PP} [_{PP} Zu ihren Eltern] [_{PP} nach Stuttgart]] ist sie gefahren.
 to her parents to Stuttgart is she driven
 'She drove to Stuttgart to her parents.'
 b. [_{PP} [_{PP} Von München] [_{PP} nach Hamburg]] sind es 900 km.
 from Munich to Hamburg are it 900 km.
 'It is 900 km from Munich to Hamburg.'
 c. [_{PP} [_{PP} Durch den Park] [_{PP} zum Bahnhof]] sind sie gefahren.
 through the park to.the train.station are they driven
 'They drove through the park to the train station.'

Wunderlich assumes that the second PP in (77) always modifies the first. This is possible when both PPs bear the same semantic role.⁹³ In (77a), both prepositional phrases denote the destination of some movement. Wunderlich admits

⁹³See Dürscheid (1989: 107–109) for a similar suggestion.

that the thematic roles in (77b) and (77c) are different (source, route or destination of movement) and tries to subsume them under the broader heading of ‘localization of movement’. This approach is not satisfactory, however, as it would be difficult for a HPSG grammar to reconstruct the individual roles related to each verb from the broader ‘localization of movement’. The examples in (77) and also examples such as (78) can only be analyzed in the way Wunderlich does if each prepositional phrase is analyzed as modifier, that is, if they do not receive a semantic role from some verb.

- (78) [Vom Leutnant] [zum Hauptmann] wird Karl befördert.
 from lieutenant to.the captain becomes Karl promoted
 ‘Karl is getting promoted from lieutenant to captain.’

This is, in my opinion, not an adequate explanation.

Riemsdijk (1978: 62) discusses data from Dutch, which are parallel to (77b). He suggests analysing the first PP as the specifier of the second. The specifier analysis also runs into problems when both prepositional phrases are complements and are independently associated with a verb.

Dowty (1979: 217–218) discusses (79) in a different context:

- (79) John drives a car from Boston to Detroit.

He suggests that *Boston* as well as *to Detroit* are complements of *from*. This analysis would not however be able to shed light on (78). Furthermore, it is not compatible with other cases of multiple fronting.

3.3.3 Fronting and LF correspondence restrictions

Haider (1982: 17) formulated a condition similar to that of Wunderlich. According to Haider, the LF-projection of the prefield has to correspond to a single LF-constituent. LF stands for ‘Logical Form’ in Government and Binding theory. Haider’s condition allows for the simultaneous fronting of adverbs and fronting of certain non-maximal verbal projections.

Haider discusses the contrast between the following examples in (80):

- (80) a. Wann und wo hat sie sich mit ihm getroffen?
 when and where has she REFL with him met
 ‘When and where did she meet him?’
 b. * Wann und wer hat sich mit ihm getroffen?
 when and who has REFL with him met

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He explains the difference by claiming that the *wh*-words together bind a single empty adverbial position. This is not possible for (80b). He offers a similar explanation for (81).

- (81) Gestern am Strand hat sie sich mit ihm getroffen.
yesterday on.the beach has she REFL with him met
'She met him yesterday on the beach.'

It is plausible to assume, as Haider does, that temporal and spatial adjuncts form a single constituent. In this case, instances of fronting such as (81) would be unproblematic. Nevertheless, we have seen in Section 3.1 that complements can be fronted along with adjuncts. If we compare examples (10a) and (10b) with the previous examples, it is clear that the coordination test does not really tell us much:

- (82) a. [Nichts] [mit derartigen Entstehungstheorien] hat es natürlich zu
nothing with those.kind origin.theories has it of.course to
tun, ...
do
'It of course has nothing to do with those kinds of theories of origin.'
- b. Was hat das mit derartigen Entstehungstheorien zu tun?
what has that with those.kind origin.theories to do
'What has that got to do with those kinds of theories of origin?'
- c. Womit hat das nichts zu tun?
with.what has that nothing to do
'What has that got nothing to do with?'
- d. * Was und womit hat das zu tun?
what and with.what has that to do
- (83) a. [Zum zweiten Mal] [die Weltmeisterschaft] errang Clark 1965 ...
to.the second time the world.championship won Clark 1965
'Clark won the world championship for the second time in 1965.'
- b. Zum wievielten Mal errang Clark 1965 die Weltmeisterschaft?
to.the how.many time won Clark 1965 the world.championship
'How many times was it that Clark had won the world
championship in 1965?'
- c. Was errang Clark 1965 zum zweiten Mal?
what won Clark 1965 to.the second time
'What did Clark win for the second time in 1965?'

- d. * Was und zum wievielten Mal errang Clark 1965?
 what and to.the how.many time won Clark 1965

There are also other combinations of adjuncts in the prefield, e.g., (22), where assuming a single constituent of the Haider type is somewhat questionable.

Furthermore, Haider's constraint excludes fronting of non-maximal projections which consist of a verb and a dative object Haider (1982: 17). Haider offers the following example, which he classes as ungrammatical:

- (84) Seiner Tochter erzählen konnte er ein Märchen mit
 his daughter.DAT tell could he.NOM a fairy.tale.ACC with
 ruhiger Stimme.
 quiet voice
 'He could tell his daughter a fairy tale in a quiet voice.'

The unacceptability of the sentence has nothing to do with its syntactic structure, but is rather to do with the information structural requirements which must be fulfilled for a verbal projection to be fronted. If we change the lexical material in (84), the result is a perfectly acceptable sentence:

- (85) Den Wählern erzählen sollte man so was nicht.
 to the voters.DAT tell should one.NOM such a.thing.ACC not
 'One shouldn't tell the voters something like that.'

Examples in (32a) and (32b) are further cases of fronting a verb with its dative object:⁹⁴ Haider's constraint can therefore be rejected as being too restrictive.

As with Wunderlich's analysis, Haider's approach also struggles to explain (78).

3.3.4 Apparent multiple frontings as multiple frontings

In an earlier proposal I assumed that multiple frontings are just multiple extractions (Müller 2000). The respective analysis is sketched in Figure 3.5. A sentence with two gaps (C_1 , C_2) is combined with appropriate fillers in two steps.

Similarly, Speyer (2008) suggests a Rizzi-style analysis of German (Rizzi 1997; Grewendorf 2002: 85, 240; 2009) in which he assumes several functional projections for topic and focus before the finite verb. For instance, Figure 3.6 shows the analysis of (86):

⁹⁴The data in (32) can also be found in (Müller 1999: 353–354). Thiersch (1982: 91), Sternefeld (1985: 429), Uszkoreit (1987: 159), von Stechow & Sternefeld (1988: 459), Oppenrieder (1991: Chapter 1.5.3.3.1), Grewendorf (1995: 1301) and G. Müller (1998: 5) offer their own examples of a dative complement being fronted together with its verb.

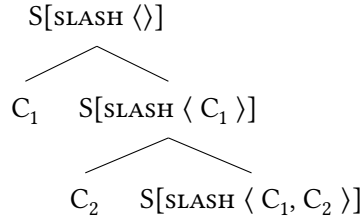


Figure 3.5: Multiple frontings as multiple extractions according to Müller (2000)

- (86) Briefe hat Uller geschrieben.
 letters has Uller written
 ‘Uller has written letters.’

The subject and main verb and finite auxiliary are generated as part of the IP and then the finite verb is moved to the head position of the Fin head. The object of *geschrieben* ‘written’ moves to the specifier position of the Fin head and leaves a trace there when moving on to the specifier position of an empty Focus head. In sentences in which a topic fills the *Vorfeld* it is assumed that the fronted element moves on from the SpecFinP position into the specifier position of a topic head. The Topic and Focus projections are assumed to be present in the structure even if no focus or topic element is present in the clause. The Force head is assumed to host features that are relevant for determining the clause type.

In such approaches, a sentence like our example in (10b) – repeated here as (87) – has an analysis in which there are two extraction traces in the *Mittelfeld*: one for *zum zweiten Mal* and one for *die Weltmeisterschaft*.

- (87) [Zum zweiten Mal]_i [die Weltmeisterschaft]_j errang _{-i -j} Clark 1965
 to.the second time the world.championship won Clark 1965
 ...⁹⁵

‘Clark won the world championship for the second time in 1965.’

3.3.4.1 Same verb constraint

This proposal has various problems: first, it cannot be explained why the elements in the *Vorfeld* have to depend on the same verb (see Section 3.1.11). The

⁹⁵(Beneš 1971: 162)

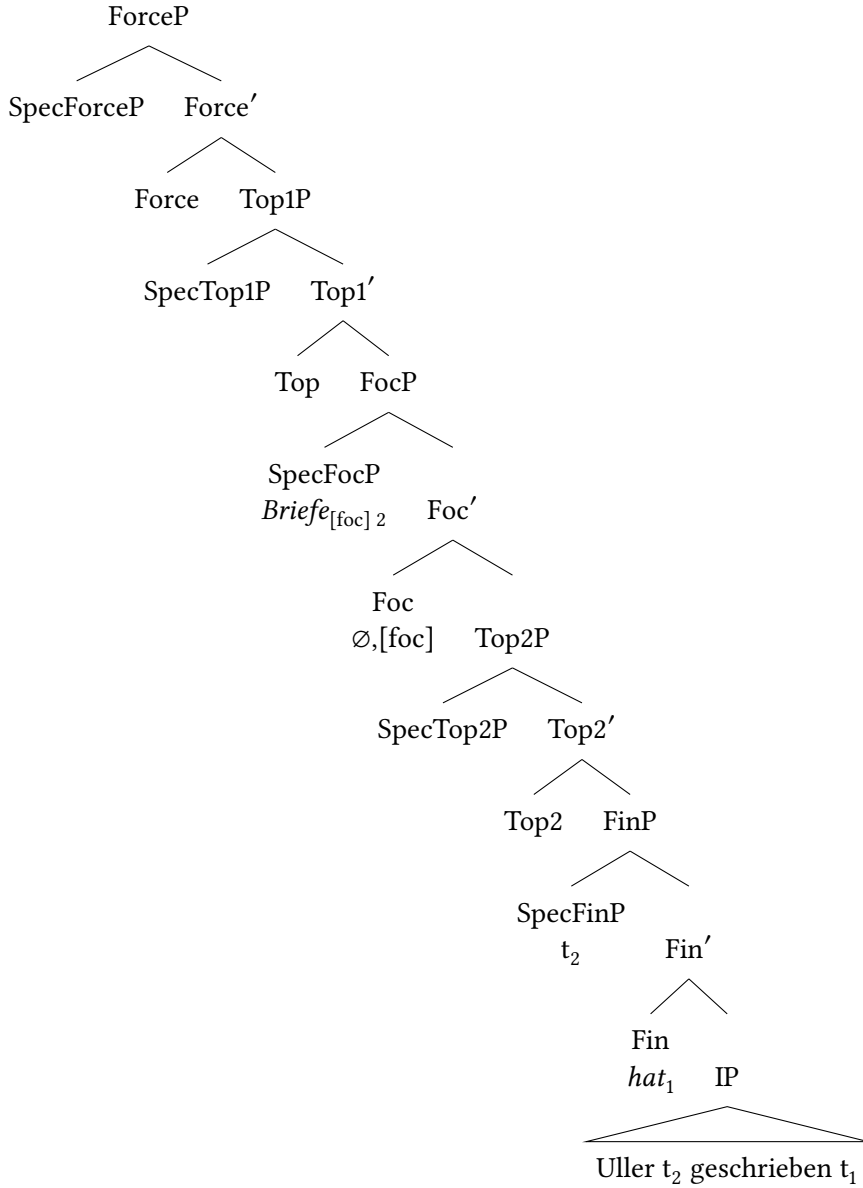


Figure 3.6: Analysis of *Briefe hat Uller geschrieben* ‘Uller has written letters.’ according to Speyer (2008: 471)

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following example from Fanselow (1987: 57) shows that more than one extraction can go on in German sentences.

- (88) Radios weiß ich nicht, wer repariert.
radios know I not who.NOM repairs
'I do not know who repairs radios.'

The interrogative pronoun is in initial position of the interrogative clause, which is usually analyzed as extraction since the interrogative phrase may depend on a deeply embedded head. *Radios* is the object of *repariert* 'repairs' and hence extracted from the interrogative clause *wer repariert* 'who repairs'.

Now, the question is: why are sentences like Fanselow's sentences in (43b,d) on page 79 impossible? The first two of the sentences in (43) are repeated below for convenience:

- (89) a. Ich glaube dem Linguisten nicht, einen Nobelpreis gewonnen zu haben.
I believe the linguist not a Nobel.prize won to have
'I don't believe the linguist's claim that he won a Nobel prize.'
- b. * Dem Linguisten_i einen Nobelpreis_j glaube _i ich nicht [_j the linguist a Nobel.price believe I not gewonnen zu haben].
won to have

In the analysis presented in the previous section it is clear that sentences like (89b) are ruled out since the fronted material has to depend on the same verb. There is no such explanation for the multiple extraction approach.

3.3.4.2 Elements that cannot be extracted (idiom parts)

Furthermore, as already explained in Section 3.1.12, idioms pose a challenge for the multiple-extraction approach.

- (90) a. [Öl] [ins Feuer] goß gestern das Rote-Khmer-Radio⁹⁶
oil in.the fire poured yesterday the Rote-Khmer-Radio
'Rote-Khmer-Radio fanned the flames yesterday'
- b. * [Ins Feuer] goß gestern das Rote-Khmer-Radio Öl.
in.the fire poured yesterday the Rote-Khmer-Radio oil

⁹⁶taz, 18.06.1997, p. 8.

If both *Öl* ‘oil’ and *ins Feuer* ‘in.the fire’ are extracted in (90a), it is difficult to see how (90b) can be ruled out. In the approach with an empty verbal head in the *Vorfeld*, neither *Öl* ‘oil’ nor *ins Feuer* ‘in.the fire’ is extracted but both phrases are just combined with an empty verbal head as they are in sentences like (91):

- (91) Das Rote-Khmer-Radio goß gestern Öl ins Feuer.
 the Rote-Khmer-Radio poured yesterday oil in.the fire
 ‘Rote-Khmer-Radio fanned the flames yesterday.’

(92) shows that *Öl* ‘oil’ can be extracted, but *ins Feuer* ‘in.the fire’ cannot be extracted as (90b) shows.

- (92) Öl goss auch Lord O’Donnel ins Feuer.⁹⁷
 oil poured also Lord O’Donnel in.the fire
 ‘Lord O’Donnel also fanned the flames.’

So, if (90a) is analyzed as double extraction, one has to find ways to say that *ins Feuer* ‘in.the fire’ can be extracted only if *Öl* ‘oil’ is extracted as well. It may be possible to do this but it is highly likely that the system of constraints that is needed to pin that down formally is highly complex.

3.3.4.3 Order of elements in the *Vorfeld*

Finally, approaches that assume that individual items are extracted from the *Mittelfeld* and fronted independently have to explain why the fronted material has to appear in the same order as it appears in the unmarked order in the *Mittelfeld*. This is automatically explained if one assumes that the fronted material is part of a verbal projection since then of course one would have all the verbal fields available: *Mittelfeld*, right sentence bracket, and *Nachfeld*. As the discussion above showed we need all these topological fields: particles of particle verbs may fill the right sentence bracket inside a complex *Vorfeld* and pronominal adverbs may be extraposed in the complex *Vorfeld* (51f), which is evidence for a *Nachfeld*. If the fronted material is part of a complex *Vorfeld* that is the projection of a verbal head, all facts are explained immediately.

One could try and derive the constraints on the order in the *Vorfeld* from more general constraints that are usually assumed in the literature. For instance, one could assume that there must not be any crossing dependencies. However, there are sentences like (88) – repeated here as (93) – in which the object is realized before the subject although both subject and object are moved.

⁹⁷<http://www.swp.de/ulm/nachrichten/politik/Brexit-ja-aber-nicht-so-fix;art1222886,3985964>, 26.09.2016.

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- (93) Radios weiß ich nicht, wer repariert.
radios know I not who.NOM repairs
'I do not know who repairs radios.'

Note furthermore that such a general ban on extraction structures would be in conflict with Speyer's original motivation for a Rizzi-style analysis. He agreed that my proposal for the analysis of modern German is basically on the right track but criticized the fact that it was not applicable to Early New High German (Speyer 2008: 461). The interesting fact about earlier stages of German is that the constraint that the elements in the *Vorfeld* have to be in the same order as they would appear in the *Mittelfeld* in unmarked order does not hold for Middle Low German (Petrova 2012: Section 5.2). The following sentences from Petrova (2012: 174–175) illustrate:

- (94) a. [Eine warheit] [ich] wille dir sagen
one truth I want you-Dat tell
'I want to tell you a certain truth.'
b. [Sea] [en thegan] habda Joseph gimahlit
she.ACC a man had Joseph married
'A man [called] Joseph had married her.'

In both sentences the direct object is realized before the subject.

Petrova also assumes a Rizzi-style analysis of Early New High German. So, since there are languages that allow the order of fronted elements to differ from the normal order in the *Mittelfeld*, the restrictions that we observe in modern German cannot be explained by reference to general constraints like the Shortest Move Constraint or the Minimal Link Condition. It follows that the *Vorfeld*-*Mittelfeld* correspondence would have to be stipulated for modern German in Speyer's model, while it is entirely expected in any model with an empty verbal head.

3.3.4.4 Assignment to Topic and Focus positions

While the proposal in Müller (2000) does not make any claims about information structure, the proposal by Speyer (2008) assumes Rizzi-style functional projections. According to Speyer (2008: 482) the *Vorfeld* consists of elements that are moved to the specifier position of a SceneP, a FocP, and a TopP that are ordered in this way. He assumes that the upper topic phrase in the analysis of Rizzi (1997) and Grewendorf (2002) is specialized to contain frame-setting elements. So, the

TopP, FocP, TopP sequence of the former models – which is also depicted in Figure 3.6 – is more constrained in Speyer’s model. Speyer claims that the historical development from Early High German to modern German resulted in this specialization. Speyer’s proposal as presented in his paper predicts that there can be at most three constituents in the *Vorfeld*: one scene element, one focus element, one topic. So if complex frontings with more than three elements are possible, Speyer’s theory is falsified. In Section 3.1.9 I showed that frontings with three elements can be found and provided Arne Zeschel’s example (31) with a complex *Vorfeld* containing four elements. The example is repeated here as (95) for convenience:

- (95) [Ihnen] [für heute] [noch] [einen schönen Tag] wünscht Claudia
 you.DAT for today still a.ACC nice day wishes Claudia
 Perez.⁹⁸
 Perez
 ‘Claudia Perez wishes you a nice day.’

Note that Rizzi and Grewendorf assume that the Topic projections are recursive. So in principle there could be as many topic positions as needed, followed by one optional focus position, followed by arbitrarily many topic positions. This could account for multiple elements in the *Vorfeld* provided some of them are topics. Note, however, that none of the fronted constituents in (95) are topics. The radio speaker announced the program for the next week and said good buy to the hearers. The reason for the fronting was to emphasize the name of the speaker. The fronted material is not put in the *Vorfeld* because it has a certain information structural function like topic or contrastive focus, it is moved out of the way to make other material more prominent. Bildhauer & Cook (2010) discussed a similar construction, which they called Presentational Multiple Fronting. It will be discussed in more detail in Section 5.2.1.1. An example of this construction is (96b), with (96a) and (96c) providing some context:

- (96) a. Spannung pur herrschte auch bei den Trapez-Künstlern. [...]
 Musikalisch begleitet wurden die einzelnen Nummern vom Orchester
 des Zirkus Busch [...]
 ‘It was tension pure with the trapeze artists. [...] Each act was
 musically accompanied by Circus Busch’s own orchestra.’
 b. [Stets] [einen Lacher] [auf ihrer Seite] hatte *die Bubi Ernesto*
 always a laugh on their side had the Bubi Ernesto

⁹⁸Claudia Perez, Länderreport, Deutschlandradio.

3 Multiple fronting

Family_i.

Family

‘Always good for a laugh was the Bubi Ernesto Family.’

- c. Die Instrumental-Clowns_i zeigten ausgefeilte Gags und Sketche [...]

‘These instrumental clowns presented sophisticated jokes and sketches.’

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This example will be discussed in more detail on page 134. What is important here is that the material in the *Vorfeld* is moved out of the way in order to present the NP in the *Mittelfeld*, which is then the topic of the following clause. Speyer’s analysis fails on examples like this and on the Claudia Perez example in (95). In general, feature driven accounts that assume that movement is triggered by features that have to be checked (Chomsky 1995) fail on this data since the movement that is required here is altruistic movement, that is, movement that takes place for the benefit of some other element. See also Fanselow (2003a) on other cases of altruistic movement.

Speyer’s proposal assumed Rizzi/Grewendorf structures and this aspect was criticized in this section. Speyer works in the framework of Stochastic Optimality Theory in order to explain the markedness and rareness of the phenomenon in Modern Standard German and in order to explain the historical development from Early High German. I will turn to the discussion of the OT aspects in Section ??.

3.3.5 V3 as adverb + clause

For examples with sentences adverbs similar to (12) – repeated here as (97) for convenience –, Jacobs (1986: 111) proposed a rule which combines a verbal projection with an adverb.

- (97) [Vermutlich] [Brandstiftung] war die Ursache für ein Feuer in einem
supposedly arson was the cause for a fire in a
Waschraum in der Heidelberger Straße.⁹⁹
washroom in the Heidelberger Street

Jacobs’ rule also licenses the combination of a V2-clause with a sentence adverb and hence can be used for the analysis of sentences like (97). However, this approach encounters problems with similar examples where the sentence adverb

⁹⁹Mannheimer Morgen, 04.08.1989, Lokales; Pflanzendieb.

follows a preposed constituent:¹⁰⁰

- (98) a. *Damit* freilich muß er allein fertig werden.
 with.that simply must he alone finished become
 ‘He will simply have to come to terms with it himself.’
 b. *Ein paar Wochen* immerhin ist noch Zeit.
 a few weeks nevertheless is still time
 ‘Well, we’ve still got a few weeks.’

Dürscheid (1989: 26) argues that these kinds of examples should also be analyzed as instances of multiple fronting, since the sentence adverb refers to the entire sentence and not just to the fronted constituent. In order to explain examples such as (98), Jacobs would have to allow prepositional phrases or pronominal adverbs such as *damit* and NPs such as *ein paar Wochen* to be combined with V2-clauses. This analysis is very similar to the one discussed in Subsection 3.3.4 and therefore shares the previously discussed drawbacks of this analysis.

3.3.6 Remnant movement

The analyses which come closest to the one I will develop in the following section are those of Fanselow (1993) and G. Müller (1998: Chapter 5.3). Both authors assume that a sentence such as (10b) has a structural representation as in (99) (although both authors make different assumptions about the nature of the verb trace in the prefield).

- (99) [_{VP} [Zum zweiten Mal] [die Weltmeisterschaft] _{-V}]_i errang_j Clark
 to.the second time the world.championship won Clark
 1965 _{-i} _{-j}.
 1965

Fanselow claims that _{-V} is a verb trace, similar to the one which plays a role in gapping. G. Müller, on the other hand, assumes that _{-V} is a normal verb trace and that cases such as (99) should be analyzed as (*remnant movement*).¹⁰¹ Fanselow (2002: Abschnitt 7) follows G. Müller’s remnant movement analysis for cases of multiple fronting.

¹⁰⁰The following examples are taken from Engel (1988: 228).

¹⁰¹Analyses using remnant movement have a long tradition. They started with the work of Gert Webelhuth und Hans den Besten (1987) and Craig Thiersch (1986), which was sadly unpublished.

Haider (1993: 281), De Kuthy (2002), De Kuthy & Meurers (2001) and Fanselow (2002) have however shown that remnant movement analyses of discontinuous NPs and the fronting of incomplete verbal and adjectival projections run into empirical problems. G. Müller (2014) discusses the scrambling of indefinite problems, but ignores the other problems pointed out by the authors just cited. Therefore, I will pursue an analysis in which putative cases of multiple fronting are explained via argument attraction (this corresponds to reanalysis approaches in the Principles and Parameters Framework).

3.4 Conclusion

In this chapter, I have presented data which had previously been neglected in many other works. Upon closer inspection, however, it becomes clear that multiple fronting is in fact not that unusual and that it is possible to identify clear patterns. This chapter was an attempt to integrate multiple fronting into the current syntax of German. This chapter provides the analysis of the syntax of apparent multiple frontings and explains how the interface to semantics works. Of course further constraints on prosody and information structure are needed for a better understanding of the phenomenon. I will turn to information structure in Chapter 5 after having discussed clause types in the following chapter.

4 Clause types

This chapter is devoted to a description of the basic clause types and the integration of their semantic contribution with their syntax.

4.1 The phenomenon

Most of the data that is covered in this chapter has been discussed in the previous chapters already. German has interrogative clauses that are V1 clauses (1a), assertive clauses that are V2 clauses (1b) and then there are verb-last clauses of various kinds.

- (1) a. Kennt der Mann die Frau?
b. Der Mann kennt die Frau.
- (2) a. dass der Mann die Frau kennt
b. Ich frage mich, welche Frau der Mann kennt.
c. die Frau, die der Mann kennt

The example in (2a) is a simple assertive embedded clause, (2b) is an embedded interrogative clause and (2c) a relative clause. I assume that interrogative and relative clauses are licensed by a schema that combines a filler that contains a *wh* element or a relative pronoun, respectively, with a sentence in which the respective element is missing. The semantics is contributed by this schema. I will not discuss these clause types any further. What I want to discuss here are the basic V2, V1 and VL patterns that are instantiated by (1a,b) and (2a).

The V1 pattern can also be observed in imperatives (3a) although V2 is also a form that imperatives can take (3b):

- (3) a. Gib mir das Buch!
give me the book
b. Jetzt gib mir das Buch!
now give me the book
'Give me the book now!'

4 Clause types

Similarly questions are not restricted to V1 order. Yes/no-questions typically are V1. Other questions are V2:

- (4) a. Wer kennt diese Frau?
 who knows this woman
 ‘Who does know this woman?’
 b. Wen kennt dieser Mann?
 who knows this man
 ‘Who does this man know?’

However, with the right intonation a V2 clause can also be a yes/no question:

- (5) Der Mann kennt die Frau?
 the man knows the woman
 ‘Does the man know the woman?’

To make things even more interesting German has a construction called *Vorfeldellipse* ‘pre-field ellipses’ or *Topic Drop*. A fronted element that is recoverable from the context can be dropped. The following sentences from Huang (1984) in (6) show that both subjects and objects can be dropped.

- (6) a. [Ihn] hab’ ich schon gekannt.
 him have I yet known
 ‘I knew him.’
 b. [Ich] hab’ ihn schon gekannt.
 I have him yet known

The material in brackets may be omitted.

(7) shows that adjuncts can also be omitted:

- (7) Die (die Pinguine) kommen so nah ran, daß man sie hätte streicheln
 können. Zum Fotografieren zu nah – und zu schnell, unmöglich da scharf
 zu stellen.
 [Da/Hier] Kann man ewig rumkucken.¹
 there/here can one eternally around.look
 ‘The penguins come so close that one could stroke them. One can look
 around eternally.’

The generalization is that things that can be fronted can also be dropped in the *Vorfeldellipse*.²

¹In an Email report from the south pole.

²This is a simplification: More oblique arguments drop less easily. Space limitations prevent me from going into a detailed discussion, but see the cited references.

Finally, there are also conditional clauses like *kommt Peter* ‘comes Peter’ in (8):

- (8) Kommt Peter, komme ich nicht.
 comes Peter come I not
 ‘If Peter comes, I will not come.’

Summarizing what we have seen so far, we can say that German has V1 and V2 clauses and both can be questions (yes/no questions or *wh* questions) and both can be declaratives (with topic drop and without) and both can be imperatives. V1 clauses can function as conditionals in complex sentences. This shows that there is no simple one to one mapping from topological mapping or clause structure to clause types.

4.2 The analysis

Section 2.2 provides the analysis of V1 and V2 clauses. A V1 clause is analyzed as a combination of a finite verb in initial position that selects a clause with verb final order from which it is missing. Sentences with a complementizer differ from the V1 sentences in that the position of the finite verb is taken by the complementizer. So in the examples below *kennt* selects for *der Mann die Frau* _ and *dass* selects for *der Mann die Frau kennt*:

- (9) a. Kennt der Mann die Frau _?
 knows the man the woman
 ‘Does the man know the woman?’
 b. dass der Mann die Frau kennt
 that the man the woman knows

What has to be explained in this section is how Topic Drop is accounted for syntactically and how all the constructions that we dealt with so far are paired with a semantics.

There are two options to account for Topic Drop: The first is to use an empty element Huang (1984) and the second is to use a unary branching rule. The disadvantage of the solution with the empty element is that it has to be ensured that it does not appear in other positions than the *Vorfeld*. If the empty element would be allowed in the *Mittelfeld* or *Nachfeld*, all arguments could be omitted.³

³This is only a small disadvantage though since there are other elements as for instance the reflexive pronouns in constructions with inherently reflexive verbs that cannot be put in the *Vorfeld*:

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So rather than an empty element, I use a schema that drops an element in SLASH. The analysis of (10) is shown in Figure 4.1.

- (10) Kennt er.
 knows he
 ‘He knows him/her/it.’

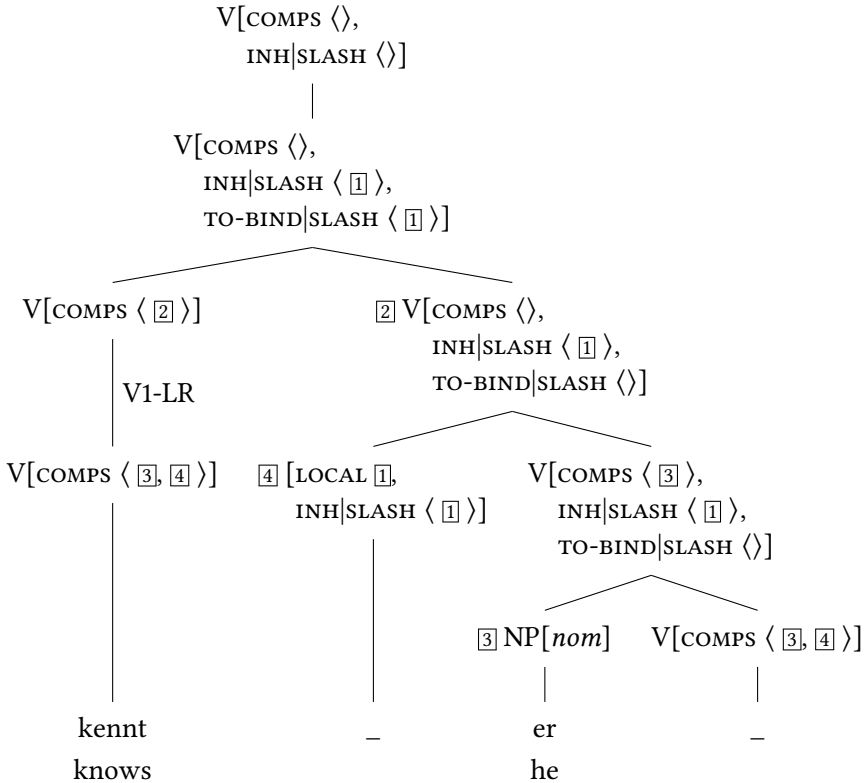


Figure 4.1: Analysis of *Kennt er.* ‘He knew him/her/it.’

The analysis is completely parallel to the analysis of (11), which was provided in

-
- (i) a. Er erholt sich.
 he recreates SELF
 ‘He recreates.’
 b. *Sich erholt er.
 SELF recreates he

For a general discussion of empty elements see Chapter 7.

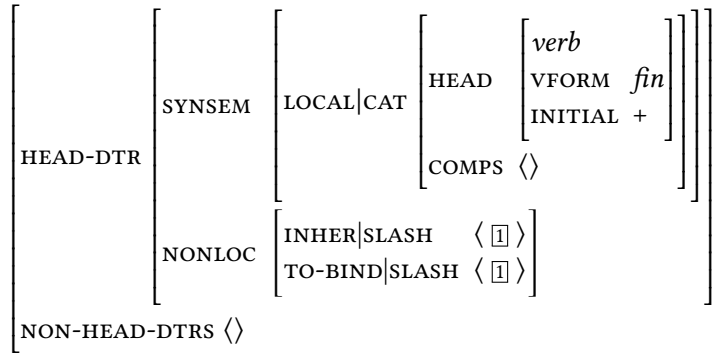
Figure 2.9 on page 37:

- (11) Das Buch kennt er.
 the book knows he
 ‘He knows the book.’

The top-most node in Figure 4.1 is licensed by the following Schema:

Schema 1 (Topic-Drop Schema)

topic-drop-phrase \Rightarrow



This schema projects a projection of a finite verb in initial position with an element in SLASH and binds off this element in SLASH: Pollard and Sag’s nonlocal feature principle ensures that the INHERITED|SLASH value of the resulting projection is the empty set. The semantic/discourse effects of this rule are ignored, but of course it is clear where the additional constraints would be located in a fully specified grammar: the constraints would be attached to the schema above. The semantics of the head daughter is enriched by the semantics that is contributed by the construction.

The schema is similar to the Filler-Head Schema that was introduced on page 3. The only difference is that there is no non-head-daughter since the *Vorfeld* is not filled. The commonalities of the two schemata are captured in the hierarchical organization of dominance schemata without the reference to surface linearization.

The discussion of the data in Section 4.1 showed that the clause types cannot simply be derived from the position of the verb since, for instance, a V1 clause can be a clause with topic drop, a yes/no question or a conditional. What I suggest here is different: because of the passing on of information about the extracted elements in a tree, the information whether an element is missing in a tree is directly accessible. For instance the verb in Figure 2.9 on page 37 selects the

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sentence [_ er _]. This sentence contains an element in SLASH and hence it is clear that the combination of *kennt* ‘knows’ and *er* ‘he’ has to be part of a V2 clause or a clause with topic drop.

Therefore we can formulate an implicational constraint that says that verbal projections with a finite verb and something in SLASH must be imperatives, questions or assertions.⁴

$$(12) \left[\begin{array}{l} \text{verb-initial-lr} \\ \text{SYNSEM|NONLOC|INHER|SLASH } ne_list \end{array} \right] \Rightarrow \left[\text{SYNSEM|LOC|CONT|RELS } \langle [\text{imperative-interrogative-assertion}] \rangle \oplus \square \right]$$

The lexical rule that was given on page 31 is modified in a way that includes a relation that represents the clause type.

⁴The empty tag \square stands for some value which is not shared anywhere in the description.

- (13) Lexical rule for verbs in initial position (including relation for clause types):

$$\left[\begin{array}{c} \text{SYNSEM|LOC } \boxed{1} \\ \left[\begin{array}{c} \text{CAT|HEAD} \left[\begin{array}{c} \text{verb} \\ \text{VFORM } \textit{fin} \\ \text{INITIAL } - \end{array} \right] \\ \text{CONT} \left[\begin{array}{c} \text{HOOK} \left[\begin{array}{c} \text{LTOP } \boxed{2} \\ \text{IND } \boxed{3} \end{array} \right] \\ \text{RELS } \boxed{4} \end{array} \right] \end{array} \right] \end{array} \right] \mapsto$$

$$\left[\begin{array}{c} \text{SYNSEM|LOC} \\ \left[\begin{array}{c} \text{CAT} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{verb} \\ \text{VFORM } \textit{fin} \\ \text{INITIAL } + \end{array} \right] \\ \text{SPR } \langle \rangle \\ \text{COMPS } \left\langle \begin{array}{c} \text{LOC} \left[\begin{array}{c} \text{CAT} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{verb} \\ \text{DSL } \boxed{1} \end{array} \right] \\ \text{SPR } \langle \rangle \\ \text{COMPS } \langle \rangle \\ \text{CONT|HOOK } \boxed{4} \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right]$$

$$\left[\begin{array}{c} \text{CONT} \left[\begin{array}{c} \text{HOOK } \boxed{4} \\ \text{RELS } \left\langle \begin{array}{c} \text{ARG0 } \boxed{2} \\ \text{ARG3 } \boxed{3} \end{array} \right\rangle \oplus \boxed{4} \end{array} \right] \end{array} \right]$$

This means that we can infer possible clause types from the knowledge about the presence of an extracted element. The actual clause type remains underspecified though since imperatives, interrogatives and assertions can be V2 clauses. In order to fully determine the clause type, one has to refer to the intonation pattern of the clause, one has to have information about the presence or absence of an interrogative pronoun in the *Vorfeld*. I do not go into the details of intonation here, but since HPSG represents phonological information in every complex linguistic object and not just at the terminal nodes it is clear that phonological information can be used in implicational constraints as well. It is possible to formulate constraints saying: if the phonological representation has the properties X and Y, the semantics/information structure has to contain Z. For information on how

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phonological constraints are represented in HPSG see Bird & Klein (1994); Höhle (1999); Bildhauer (2008b).

While we can see in the lexical item whether an element is extracted or not, we cannot see whether the filler of the nonlocal dependency contains a *wh* element or not. The reason for this is that the information about *wh* elements is treated as nonlocal information in order to be able to account for pied-piping.

- (14) Von welchem Musiker hat Peter geschwärmt?
from which musician has Peter enthused
'Which musician thrilled Peter?'

The phrase *von welchem Musiker* contains a *w* word, but it is deeply embedded as the determiner of a noun phrase that is part of a PP. The information about the interrogative element is passed up in the tree as it is common for other nonlocal information. The feature that is used for this kind of nonlocal dependency is the *QUE* feature. The information that is passed up is the semantic index of the interrogative pronoun. In comparison only locally relevant information is passed up in *SLASH*, that is, information about part of speech, valence, case and semantic information. Information about other nonlocal dependencies as for instance the *QUE* value is not contained in *SLASH*. Therefore it is impossible to determine from within the phrase *kennt jeder* 'knows everybody' whether the constituent in the *Vorfeld* contains a *w* element or not.⁵ Hence the clause type determination has to happen with reference to the constituent in the *Vorfeld*. There are several ways to do this in HPSG. One is suggested by Sag (2010) for the analysis of extraction structures in English:⁶ Sag uses schemata for various types of sentences (relative clauses and interrogative clauses) to be able to account for the idiosyncratic distribution of *wh* pronouns. Each schema corresponds to a specific type. Types are arranged in type hierarchies and more specific types inherit constraints from their supertypes. This makes it possible to capture generalizations. For instance, Sag assumes a general type for filler-head structures and then assumes subtypes of this type for the specific cases he discusses. Rather than enumerating all the syntactic patterns and associating them with types, I would like to suggest that there is just one schema for the combination of filler

⁵Hinrichs & Nakazawa (1994b) suggest an analysis in which complete signs are elements of *SLASH*. This makes a completely lexical determination of clause types possible, since both the local information and the nonlocal information of the fronted constituent can be addressed from within the partial clause. I nevertheless assume the more restrictive analysis that is usually assumed in HPSG.

⁶See also Jacobs2016a for a suggestion that can be transferred into HPSG and that would be parallel to Sag's proposal.

and head in German V2 clauses and that the semantic information regarding the sentence type is dependent on the form of the element in the prefield. If the element contains a *w* element, the clause is an interrogative clause, if it does not, the clause is a declarative clause. Formally this can be expressed by implicational constraints that have a complex structure with or without *w* element as antecedent and which specify in the consequence the semantic relation that is contributed by the respective utterance. Figure 4.2 shows the implication in tree notation. If we have a tree structure with a *w* element in initial position, the sec-

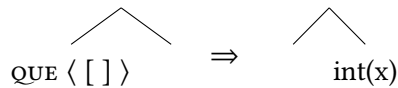


Figure 4.2: Implicational constraint for interrogative clauses

ond daughter has to contribute an interrogative semantics. The good thing about the representational format of HPSG is that tree structures are also modeled by feature structures. Since we can use complex feature descriptions in antecedents of implicational constraints, implications like the one sketched in Figure 4.2 can be formulated.

The implication in Figure 4.2 is a simplification. In addition one has to require in the antecedence that the interrogative semantics is possible at all since otherwise sentences like (15b) – quoted from Reis & Rosengren (1992: 113) – would result in a contradiction, since the imperative form of the verb enforces an imperative meaning.

- (15) a. Sag mal, wem du die Rezension anvertraut hast!
 say once who you the review trust have
 ‘Who did you trust the review with?’
 b. Wem sag mal, dass du die Rezension anvertraut hast!
 who say once that you the review trust have
 ‘Who did you trust the review with?’

4.3 Alternatives

In what follows I briefly discuss two alternatives. Section 4.3.1 compares the implication-based proposal that was suggested here with proposals that attach the respective constraints to very specific dominance schemata. This is a rather abstract discussion, concrete schema-based suggestions are discussed in Chapter 6.

4 Clause types

Section 4.3.2 deals with recent suggestions within the Minimalist Programm that rely on Rizzi-style functional projections (Rizzi 1997).

4.3.1 Schema-based analyses

I suggested an analysis in which the relation that is needed for the clause type is introduced by a lexical rule (a unary branching schema). The alternative is a phrasal view that refers to a certain configuration.

The approaches can be depicted as in Figure 4.3. The semantic contribution at

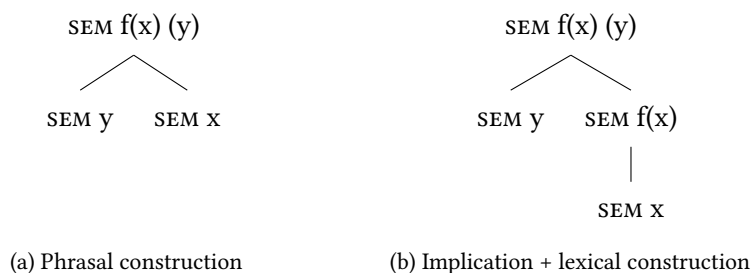


Figure 4.3: constructional, phrasal approach and approach with implicational constraint

the mother node in Figure 4.3a is not derived compositionally from the daughters since it is not the combination of x and y but rather the combination of $f(x)$ and y . The function f is contributed by the construction. In contrast the additional meaning component is contributed lexically in Figure 4.3b, that is, there already is a function that is applied to x . The combination of $f(x)$ and y is compositional. The exact content of f depends from the environment in which the verb is realized. An example for a constraint that determines the function was given in Figure 4.2, which shows the implication that constraints the semantic contribution of interrogative clauses.

4.3.2 Functional projections

This section compares the analysis of clause types that was developed in this chapter with an analysis that was suggested within the framework of the Minimalist Program (Chomsky 1993; 1995). The analysis of V2 clauses that is developed in this book can be sketched as in Figure 4.4. This analysis is pretty similar to what Haider (1993) and Fanselow & Lenertová (2011) assume. The analysis

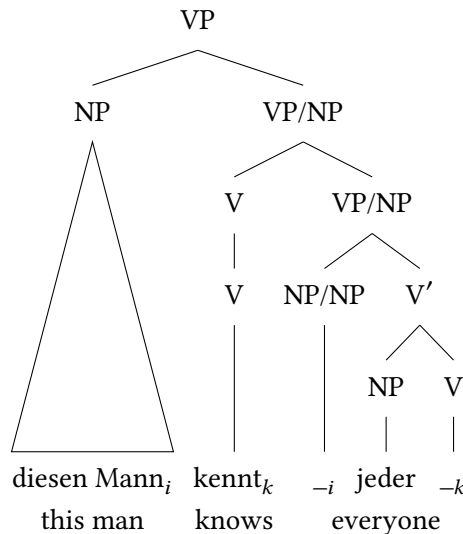


Figure 4.4: Analysis of long-distance dependencies in HPSG

is compatible with current Minimalist assumptions: the combination of heads with their arguments are licenced by the Head-Complement Schema and by the Head-Filler Schema. As I have shown in Müller (2013d) these schemata correspond to the operations *Move* and *Merge*, which are assumed in Minimalism. Self-induced technical problems with Labelling and so on that Chomsky's analyses (2008; 2013) are plagued with do not exist in the proposal advocated here. In comparison to the analysis of Lohnstein (2007) – which is depicted in Figure 4.5 – the analysis that is developed in this book is minimal.^{7,8} In what follows I want to explain why I do not consider Rizzi-style analyses minimalistic in the sense of the Minimalist Program. The goal of the Minimalist Program (Chomsky 1995) is to explain language evolution. Structures should be simple so that their evolution and their repeated acquisition by speakers of succeeding generations is plausible. Chomsky admits the possibility that the innate language-specific knowledge that is necessary for this is minimal (Hauser, Chomsky & Fitch 2002; Chomsky

⁷Lohnstein's analyse is a simplification of Rizzi's analysis (1997). Rizzi and also Grewendorf (2002: 70) assume a Force head and a Typ head, respectively.

⁸Chomsky emphasises in several of his publications and talks that the Minimalist Program cannot be criticized for not being minimal or minimalistic, since it is a program and not a theory and the goals of the program correspond to usual scientific goals (e.g., Chomsky (2013: 38)). I am not criticizing the program here, but – as many others before me – a specific analysis, which was suggested within the program.

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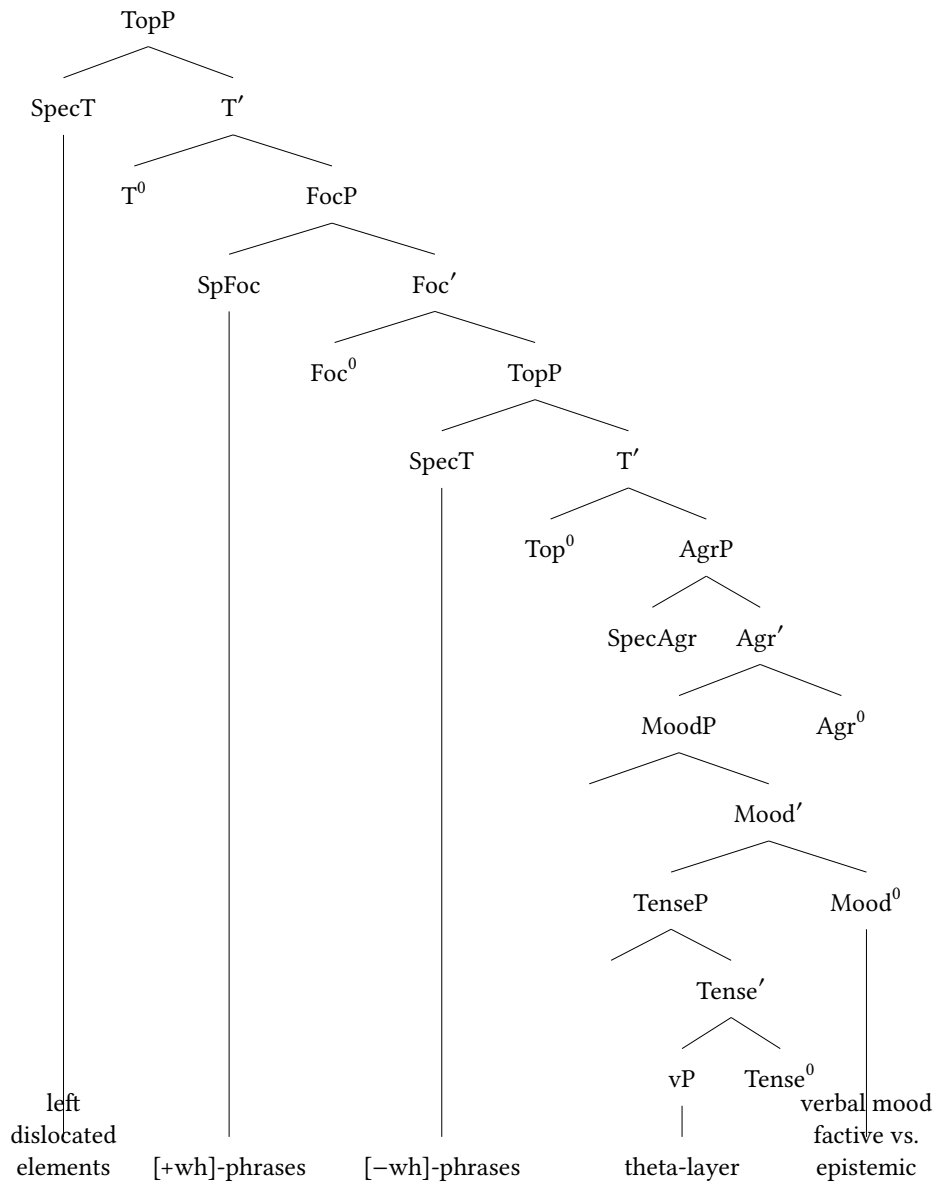


Figure 4.5: Rizzi-style analysis of the German clause according to Lohnstein (2007: 84)

2007: 4). If one compares Figure 4.4 with Figure 4.5, it is obvious that there are several tree positions in the latter figure that do not exist in the former: there is no distinction between FocP and TopP. Clauses always are verbal projections. This is what is visible as far as syntactic categories are concerned. Focus and topic are part of the information structure of a sentence and are modelled separately from syntactic categories like verb(al projection), noun or noun phrase, and so on. In Rizzi-style analyses like the one suggested by Lohnstein the topic or focus position may be empty in clauses of the appropriate kind. Such empty positions do not exist in my analysis. Children have to learn that certain clauses have a topic element in the *Vorfeld* and others have a focus element. Children do not have to learn that there are clauses in which there is a topic, but the focus element is empty both phonologically and semantically. I consider the use of topic and focus projections an aberration in a syntax-centered research context that realized that language cannot be described adequately with syntactic categories alone and that models that assume highly separate modules like syntax, semantics, and information structure and pose a linear sequence of such modules with limited interaction are inadequate. These insights resulted in a proliferation of semantically and information structurally motivated functional categories.^{9,10} It is clear that relevant semantic distinctions have to be modelled but this has to take place on respective semantic and pragmatic levels, that are related to the syntactic level. This can be established by the semantic or information structural contribution of single lexemes or of phrasal configurations. What has been shown in this section is how the semantics of clause types can be integrated into the architecture of grammar without mixing the semantic categories with the syntactic ones. We will deal with information structure in Chapter 5.

⁹Rizzi (1997) and Grewendorf (2002: 70) assume ForceP, TopP, FocP and Poletto (2000: 31) assumes HearerP and SpeakerP, Wiklund, Hrafnbjargarson, Bentzen & Hróarsdóttir (2007) suggest TopP, ForceP and OuterTopP Cinque (1994: 96, 99) assumes Quality, Size, Shape, Color, Nationality. See Webelhuth (1995: 76) for an overview. He also lists Honorific and Predicate. For a recent overview see Müller (2016: Abschnitt 4.6.1).

¹⁰Some projections are also motivated by the presence of morphemes in other languages. Such an argumentation is only sound if simultaneously a rich UG is assumed since monolingual children do not have information about topic and focus morphemes in other languages (Müller 2015b: Section 2).

5 Information structure constraints on multiple frontings

Chapter 3 provided the syntactic aspects of the analysis of apparent multiple frontings. Of course this analysis vastly overgenerates: it admits structures that are not well-formed. This chapter discusses information structure constraints on multiple frontings and shows how they can be formalized in HPSG. The analysis is based on Bildhauer & Cook (2010), which is one result of the project A6 in the Collaborative Research Center SFB 632 on information structure. Felix Bildhauer and Philippa Cook are co-authors of this chapter.

5.1 A note on terminology

There is no general terminological consensus about information structural categories. The definitions of such categories tend to vary across different research traditions, and sometimes they are not even used consistently within the same paradigm of research (see Kruijff-Korbayová & Steedman 2003 for an overview of the evolution and interdependencies of such terms). In what follows, we adopt the view that topic-comment and focus-background are distinct, orthogonal dimensions of information structure, along the lines of Krifka (2007). Thus, we think of utterances as being structured along both of these two dimensions, which serve different purposes: A focus evokes a set of alternatives and selects a particular one among them (Rooth 1985; 1992). On the other hand, a topic singles out a specific discourse referent as an “address” in the mental representation of the discourse (“aboutness topic”) or it narrows down the domain within which the comment is supposed to hold at all (“framesetting topic”; see also Jacobs 2001 for discussion). The kind of topic we will be dealing with in this chapter is of the “aboutness”-type.

5.2 The phenomenon

As we saw earlier in Chapter 2.1.3, German is classed as V2 language, that is, normally exactly one constituent occupies the position before the finite verb in declarative main clauses. In what have been claimed to constitute rare, exceptional cases, however, more than one constituent appears to precede the finite verb, as illustrated in the attested examples that were discussed in Section 3.1. Some attested examples with two fronted objects are repeated here for ease of reference in (1):¹

- (1) a. [Dem Saft] [eine kräftigere Farbe] geben Blutorangen.²
the.DAT juice a.ACC more.vivid colour give blood.oranges
‘What gives the juice a more vivid colour is blood oranges.’
- b. [Dem Frühling] [ein Ständchen] brachten Chöre aus dem
the.DAT spring a.ACC little.song brought choirs from the
Kreis Birkenfeld im Oberbrombacher Gemeinschaftshaus.³
county Birkenfeld in.the Oberbrombach municipal.building
‘Choirs from Birkenfeld county welcomed (the arrival of) spring with
a little song in the Oberbrombach municipal building.’
- c. [Dem Ganzen] [ein Sahnehäubchen] setzt der Solist Klaus
the.DAT everything a.ACC little.cream.hood puts the soloist Klaus
Durstewitz auf⁴
Durstewitz on
‘Soloist Klaus Durstewitz is the cherry on the cake.’

There has been ongoing debate in the theoretical literature concerning the status of examples seemingly violating this V2 constraint. The examples in (2) (from Fanselow 1993) and (3) (from G. Müller 2004a), are similar to (1a)–(1c) in that both objects of a ditransitive verb are fronted. The grammaticality judgments given by these authors diverge and, as can be seen from G. Müller’s assessment of the data, such constructed examples tend to be deemed at best marginal, or even ungrammatical if presented without context.

¹Unless otherwise indicated, corpus examples in this chapter were extracted from the German Reference Corpus (Institut für Deutsche Sprache 2005–2015).

²R99/JAN.01605.

³RHZ02/JUL.05073.

⁴NON08/FEB.08467.

- (2) [Kindern] [Heroin] sollte man besser nicht geben.
 children.DAT heroin.ACC should one better not give
 ‘One shouldn’t give heroin to children.’
- (3) a. ?? [Kindern] [Bonbons] sollte man nicht geben.
 children.DAT candies.ACC should one not give
 ‘One shouldn’t give candies to children.’
 b. * [Dieses billige Geschenk] [der Frau] sollte man nicht
 this.ACC cheap present the.DAT woman should one not
 geben.
 give
 ‘One shouldn’t give the woman this cheap present.’

Chapter 3.2 provided the syntactic aspects of the analysis that treats the fronted constituents as dependents of an empty verbal head, thus preserving the assumption that the preverbal position is occupied by exactly one constituent (namely a VP):⁵

- (4) [_{VP} [Dem Saft] [eine kräftigere Farbe] _{-V}]_i geben_j Blutorangen _{-i} _{-j}.

While this account by itself correctly predicts certain syntactic properties of MFs, such as the fact that the fronted parts must depend on the same verb, it is in need of further refinement. In particular, multiple fronting seems to require very special discourse conditions in order to be acceptable (which is why out-of-context examples often sound awkward). Relying on findings from a corpus of naturally occurring data, we have identified two different information-structural environments in which MFs are licensed. Section 5.2.1 briefly sketches these two patterns, which in Section 5.3 we will analyze as being licensed by two related but distinct constructions, each of them instantiating a specific pairing of form, meaning and contextual appropriateness.

5.2.1 Multiple Fronting in Context

In this section we examine two possible contexts of MF: Section 5.2.1.1 deals with what we term *Presentational MF* and Section 5.2.1.2 with *Propositional Assessment*

⁵For simplicity, we continue to refer to this phenomenon as ‘multiple fronting’, but in the light of the analysis given in Chapter 3.2, the term is exchangeable with ‘apparent multiple fronting’ or ‘fronting of a VP that has an empty head’. Interestingly, multiple fronting rivals regular VP fronting in frequency for certain combinations of lexical material. For a comparison of multiple fronting and regular VP fronting (i. e., fronting of a VP with a lexically filled head), see Müller et al. 2012: Section 4.

MF.

5.2.1.1 Presentational MF

One of the configurations in which MF is well attested in naturally occurring data is illustrated in (5), (6) and (7), where the (b) line contains the MF structure and the (a) and (c) lines provide the context before and after it, respectively. We call this type *Presentational Multiple Fronting*.

- (5) a. Spannung pur herrschte auch bei den Trapez-Künstlern. [...] Musikalisch begleitet wurden die einzelnen Nummern vom Orchester des Zirkus Busch [...]
'It was tension pure with the trapeze artists. [...] Each act was musically accompanied by Circus Busch's own orchestra.'
- b. [Stets] [einen Lacher] [auf ihrer Seite] hatte *die Bubi Ernesto*
always a laugh on their side had the Bubi Ernesto
Family_i.
Family
'Always good for a laugh was the Bubi Ernesto Family.'
- c. Die Instrumental-Clowns_i zeigten ausgefeilte Gags und Sketche [...]
'These instrumental clowns presented sophisticated jokes and sketches.'
M05/DEZ.00214
- (6) a. [...] wurde der neue Kemater Volksaltar [...] geweiht. Die Finanzierung haben die Kemater Basarfrauen übernommen. Die Altarweihe bot auch den würdigen Rahmen für den Einstand von Msgr. Walter Aichner als Pfarrmoderator von Kematen.
'... the new altar in Kemate ... was consecrated. It was financed by the Kemate bazar-women. The consecration of the altar also presented a suitable occasion for Msgr. Walter Aichner's first service as Kematen's parish priest'
- b. [Weiterhin] [als Pfarrkurator] wird *Bernhard Deflorian_i* fungieren.
further as curate will Bernhard Deflorian function.
'Carrying on as curate, we have Bernhard Deflorian.'
- c. Ihn_i lobte Aichner besonders für seine umsichtige und engagierte Führung der pfarrerlosen Gemeinde. Er_i solle diese Funktion weiter ausüben, „denn die Entwicklung, die die Pfarrgemeinde Kematen genommen hat, ist sehr positiv“.

‘Aichner praised him especially for his discreet and committed leading of the priestless congregation. He should carry on with his work, “for the development of the Kematen congregation has been very positive.”’

I97/SEP.36591

We take Presentational MF to be a topic shift strategy. What is typical for this construction, we claim, is that a new entity (in italics in the examples (5b), (6b) and (7b)) is first introduced into the discourse and can then better serve as a topic in the continuation of the discourse or text. We argue that this introduced element benefits from first being ‘presented’ in a construction such as Presentational MF before then functioning as an aboutness topic precisely because at the moment it is introduced into the discourse it bears some features that are not typical for topics (e.g. focus, discourse newness). The position for this ‘presentation’ to take place is late in the clause, where the main accent typically falls in German declaratives. Presentational MF is never obligatory though; we are simply highlighting here why a speaker or an author might choose this construction in a particular context. Conversely, this kind of presentation is also found in canonical sentences not involving multiple fronting. In the corpus data we looked at, the presented entity is frequently a subject, but not always. We have also found experiencer objects and locative dependents. Our account below is intended to capture this observed distribution of presented entities.

What is it then that unites (agentive) subjects on the one hand and (non-subject) experiencer or locative dependents on the other and makes them candidates for being presented in such a construction? On the basis of a close examination of a large quantity of naturally occurring data⁶, we suggest that this presented entity corresponds to the dependent of the verb that is – in general – the most topic-worthy of all the verb’s dependents and is thus most likely to actually be realized as a topic in some particular discourse context. We will refer to this dependent as the verb’s ‘designated topic’ (DT) – a term intended to apply to a verb’s most likely topical dependent outside of any particular discourse context. This element does not *have to* instantiate the topic, but it is the *most likely* candidate to instantiate topic. Agents are dependents which typically are

⁶In the context of the Collaborative Research Center SFB 632, a reasonably large database of multiple frontings (containing more than 2400 instances, most of them extracted from the German Reference Corpus (Institut für Deutsche Sprache 2005–2015)) was compiled and annotated by the authors. Annotations include topological fields, syntactic function and various information structure categories. The collection is publically accessible through a search interface at <https://hpsg.fu-berlin.de/Resources/MVB/>.

the designated topic (DT) of their predicates but when the subject is semantically a theme (e. g. with unaccusatives or some psych verbs), then we find that it is the experiencer or a locative dependent that has a closer affinity with topic (cf. van Oosten (1984) for similar observations about topic prototypicality, but without the notion of DT).

As mentioned above, since focus and newness are not prototypical topic features cross-linguistically, cf. again Krifka (2007), it has been argued that new entities often have to be first ‘presented’ before they can function as aboutness topics and we claim this is what is happening here (cf. Lambrecht 1994, for whom the type of phrases introducing brand new referents into the discourse are lowest on the scale of ‘Topic Accessibility’). Interestingly, then, rather than checking/spelling out a discourse function of the fronted material, a motivating factor in Presentational MF is the tendency to realize certain material external to the post-verbal domain in order to maximize the presentational effect lower down in the clause. Note that the pattern is not characterized adequately if the description makes reference to the subject rather than to the ‘designated topic’. The reason is, as mentioned above, that the presented element need not be the subject in all cases, as illustrated in (7b): here, the subject is actually part of the fronted material, while the newly introduced entity is coded as a locative PP. Our analysis in terms of designated topic accommodates these data since the locative phrase, rather than the subject, plays this role in the case of *herrschen* ‘to reign’ (in the relevant ‘existential’ reading). It also predicts that a subject can occur among the fronted material in a MF construction if it is not the verb’s designated topic.

- (7) a. *Gesucht? Schnelle Sprinter*
 ‘Wanted: fast sprinters’
- b. *[Weiterhin] [Hochbetrieb] herrscht am Innsbrucker Eisoval.*
 further high.traffic reigns at.the Innsbruck icerink
 ‘It’s still all go at the Innsbruck icerink.’
- c. *Nach der Zweibahntournee am Dreikönigstag stehen an diesem*
 Wochenende die Österreichischen Staatsmeisterschaften im Sprint
 am Programm.
 ‘Following the two-rink tournament on Epiphany-Day there’s now
 the Austrian National Championship in Sprinting coming up at the
 weekend.’ I00/JAN.00911

5.2.1.2 **Propositional Assessment MF**

The second configuration in which MF occurs is best described as *Propositional Assessment MF*. Examples (8c) and (9c) illustrate this type of structure.

- (8) a. Bauern befürchten Einbußen
‘Farmers fear losses’
- b. [Nach Brüssel] [zum Demonstrieren] ist Gerd Knecht *nicht* gefahren
to Brussels to demonstrate is Gerd Knecht not gone
‘G. K. did not go to Brussels for the demo’
- c. aber gut verstehen kann der Vorsitzende des Lampertheimer Bauern-
verbands die Proteste der Kollegen.
‘but the president of the Lampertheim Farmers’ Association can well
understand his colleagues’ protest.’ M99/FEB.12802
- (9) a. Im Schlussabschnitt war den Berlinern das Bemühen durchaus anzu-
merken, vor ausverkauftem Haus ein Debakel zu verhindern.
‘During the last phase of the match, it was clearly visible that the Berlin
players were struggling to fight off a debacle in the packed arena.’
- b. [Dem Spiel] [eine Wende] konnten sie aber *nicht* mehr geben.
to.the match a turn could they however not more give
‘However, they didn’t manage to turn the match around.’
- c. Rob Shearer (46.) traf noch einmal den Pfosten, das nächste Tor
erzielten aber wieder die Gäste.
In the 46th minute, Rob Shearer hit the post again, but it was the
guests who scored the next goal.’ NUZ07/MAI.01360

We analyze Propositional Assessment MF as involving a Topic-Comment struc-
ture plus an assessment of the extent to which the Comment holds of the Topic.
More precisely, we are dealing with an inverted Topic-Comment configuration,
in which the fronted material constitutes (part of) the Comment, while the Topic
is instantiated by a discourse-given element in the middlefield (*Gerd Knecht* in
(8c), *sie* in (9c)). Also in the middlefield, we regularly find an ‘evaluative’ expres-
sion, generally an adverb or particle, frequently but not exclusively negation. It
must be prosodically prominent (i. e., it must probably receive the main stress
of the sentence), and it expresses/highlights the degree to which the Comment
holds for the Topic. Besides *nicht* ‘not’, particles/adverbs frequently found in
Propositional Assessment MF include *nie* ‘never’, *selten* ‘rarely’, *oft* ‘often’.

5.3 The analysis

Before we turn to the analysis of the interaction between syntax and information structure in apparent multiple frontings in Section 5.3.3, we have to introduce the notation that we use for representing constraints on information structure (Section 5.3.2). Before we can do this, we have to introduce the representational format of Minimal Recursion Semantics (Section 5.3.1). MRS is particularly well-suited for modelling information structure constraints since embedding of predicates is not done in the representation directly, but rather elementary predications are represented in a list and embedding is expressed by pointers.

5.3.1 Introduction to Minimal Recursion Semantics

This introduction is divided into two parts: first, we introduce the basic representation of semantic information and explain how scope can be represented in an underspecified way and then we turn to the analysis of non-compositional constructions in which some semantic information is contributed by a certain phrasal pattern itself.

5.3.1.1 Basic representation and compositional semantics

(10) shows the examples for the semantic contribution of a noun and a verb in Minimal Recursion Semantics (MRS):

- (10) a. *dog* b. *chases*
- $$\left[\begin{array}{l} mrs \\ IND \quad [1] \quad \left[\begin{array}{l} index \\ PER \quad 3 \\ NUM \quad sg \end{array} \right] \\ RELS \quad \left\langle \left[\begin{array}{l} dog \\ INST \quad [1] \end{array} \right] \right\rangle \end{array} \right]$$
- $$\left[\begin{array}{l} mrs \\ IND \quad [1] \quad event \\ RELS \quad \left\langle \left[\begin{array}{l} chase \\ EVENT \quad [1] \\ AGENT \quad index \\ PATIENT \quad index \end{array} \right] \right\rangle \end{array} \right]$$

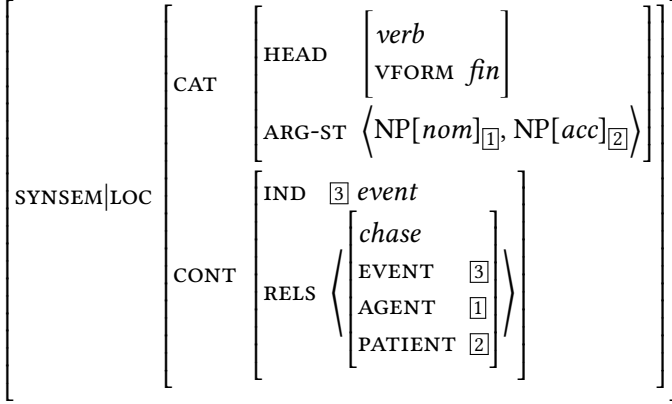
An MRS consists of an index, a list of relations, and a set of handle constraints, which will be introduced below. The index can be a referential index⁷ of a noun (10a) or an event variable (10b). In the examples above the lexical items contribute the *dog*' relation and the *chase*' relation. The relations can be modeled with feature structures by turning the semantic roles into features. The semantic index of

⁷Phrases like *no dog* also have a referential index in this sense. These referential indices are like variables.

nouns is basically a variable, but it comes with an annotation of person, number, and gender since this information is important for establishing correct pronoun bindings.

The arguments of each semantic relation (e.g. agent, patient) are linked to their syntactic realization (e.g. NP[nom], NP[acc]) in the lexicon. (11) shows an example. NP[nom]_[1] stands for a description of an NP with the semantic index identified with [1]. The semantic indices of the arguments are structure shared with the arguments of the semantic relation *chase*'.

(11) *chase*:



Generalizations over linking patterns can be captured elegantly in inheritance hierarchies (see Davis (1996); Wechsler (1991); Davis & Koenig (2000) for further details on linking in HPSG).

Before turning to the compositional analysis of (12a), we want to introduce some additional machinery that is needed for the underspecified representation of the two readings in (12b,c).

- (12) a. Every dog chased some cat.
 b. $\forall x(\textit{dog}(x) \rightarrow \exists y(\textit{cat}(y) \wedge \textit{chase}(x, y)))$
 c. $\exists y(\textit{cat}(y) \wedge \forall x(\textit{dog}(x) \rightarrow \textit{chase}(x, y)))$

Minimal Recursion Semantics assumes that every elementary predication comes with a label. Quantifiers are represented as three place relations that relate a variable and two so-called handles. The handles point to the restriction and the body of the quantifier, that is, to two labels of other relations. (13) shows a (simplified) MRS representation for (12a).

- (13) $\langle \text{h0}, \{ \text{h1: every}(x, \text{h2}, \text{h3}), \text{h2: dog}(x), \text{h4: chase}(e, x, y), \text{h5: some}(y, \text{h6}, \text{h7}), \text{h6: cat}(y) \} \rangle$

The three-place representation is a syntactic convention. Formulae like those in (12) are equivalent to the results of the scope resolution process that is described below.

The MRS in (13) can best be depicted as in Figure 5.1. h_0 stands for the top element. This is a handle that dominates all other handles in a dominance graph. The restriction of *every* points to *dog* and the restriction of *some* points to *cat*. The interesting thing is that the body of *every* and *some* is not fixed in (13). This is indicated by the dashed lines in Figure 5.1 in contrast to the straight lines connecting the restrictions of the quantifiers with elementary predications for *dog* and *cat*, respectively. There are two ways to plug an elementary predication

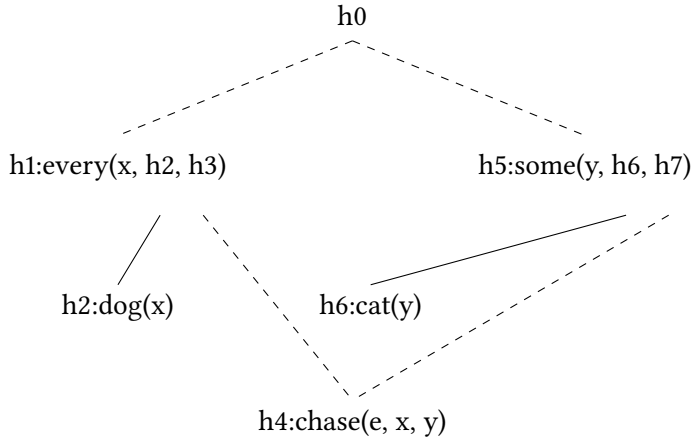


Figure 5.1: Dominance graph for *Every dog chases some cat*.

into the open slots of the quantifiers:

- (14) a. Solution one: $h_0 = h_1$ and $h_3 = h_5$ and $h_7 = h_4$.
 (*every dog* has wide scope)
 b. Solution two: $h_0 = h_5$ and $h_7 = h_1$ and $h_3 = h_4$.
 (*some cat* has wide scope)

The solutions are depicted as Figure 5.2 and Figure 5.3.

There are scope interactions that are more complicated than those we have been looking at so far. In order to be able to underspecify the two readings of (15) both slots of a quantifier have to stay open.

- (15) a. Every nephew of some famous politician runs.
 b. $\text{every}(x, \text{some}(y, \text{famous}(y) \wedge \text{politician}(y), \text{nephew}(x, y)), \text{run}(x))$

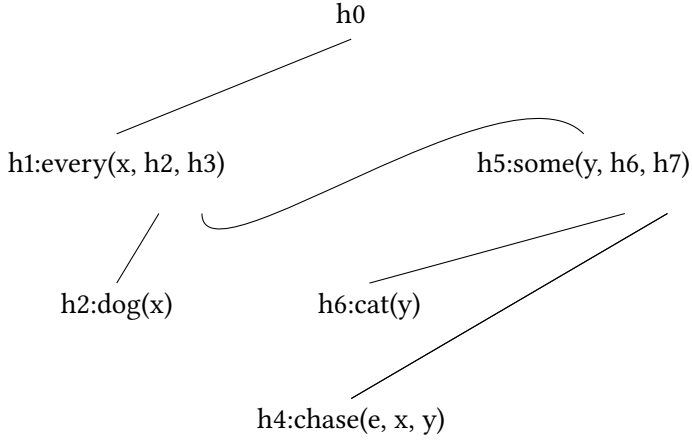


Figure 5.2: $\text{every}(x, \text{dog}(x), \text{some}(y, \text{cat}(y), \text{chase}(x, y)))$

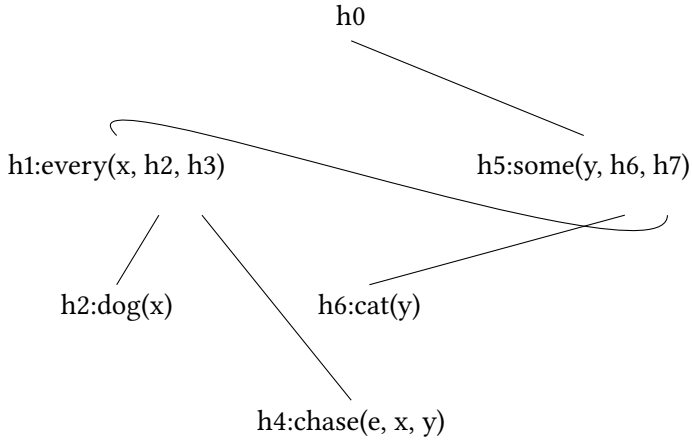


Figure 5.3: $\text{some}(y, \text{cat}(y), \text{every}(x, \text{dog}(x), \text{chase}(x, y)))$

c. $\text{some}(y, \text{famous}(y) \wedge \text{politician}(y), \text{every}(x, \text{nephew}(x, y), \text{run}(x)))$

In the analysis of example (12a), the handle of *dog'* was identified with the restriction of the quantifier. This would not work for (15a) since either *some'* or *nephew'* can be the restriction of *every'*. Instead of direct specification so-called handle constraints are used (*qeq* oder $=_q$). A *qeq* constraint relates an argument handle and a label: $h =_q l$ means that the handle is filled by the label directly or one or more quantifiers are inserted between *h* and *l*. Taking this into account, we can now return to our original example. A more accurate MRS representation of (12a) is given in (16).

(16) $\langle h0, \{ h1:\text{every}(x, h2, h3), h4:\text{dog}(x), h5:\text{chase}(e, x, y),$
 $h6:\text{some}(y, h7, h8), h9:\text{cat}(y) \}, \{ h2 =_q h4, h7 =_q h9 \} \rangle$

The handle constraints are associated with the lexical entries for the respective quantifiers. Figure 5.4 shows the analysis. For compositional cases as in Figure 5.4, the RELS value of a sign is simply the concatenation of the RELS values of the daughters. Similarly the HCONS value is a concatenation of the HCONS values of the daughters.

5.3.1.2 The Analysis of “Non-Compositional” Constructions

Copestake, Flickinger, Pollard & Sag (2005) extended the basic analysis that concatenates RELS and HCONS to cases in which the meaning of an expression is more than the meaning that is contributed by the daughters in a certain structure. They use the feature *c-cont* for the representation of constructional content. While usually the semantic functor (the head in head argument combinations and the adjunct in head adjunct structures) determines the main semantic contribution of a phrase, the *c-cont* feature can be used to specify a new main semantic contribution. In addition relations and scope constraints may be introduced via *c-cont*. The feature geometry for *c-cont* is given in (17):

(17)
$$\left[\begin{array}{l} c\text{-cont} \\ \text{HOOK} \left[\begin{array}{l} \text{INDEX} \text{ event-or-index} \\ \text{LTOP} \text{ handle} \end{array} \right] \\ \text{RELS} \text{ list of relations} \\ \text{HCONS} \text{ list of handle constraints} \end{array} \right]$$

The *HOOK* provides the local top for the complete structure and a semantic index, that is a nominal index or an event variable. In compositional structures the

HOOK value is structure shared with the semantic contribution of the semantic functor and the RELS list and the HCONS list is the empty list. As an example for a non-compositional combination Copestake et al. (2005) discuss determinerless plural NPs in English. For the analysis of *tired squirrels* they assume an analysis using a unary branching schema. Their analysis corresponds to the one given in (18).⁸

$$(18) \left[\begin{array}{c} \text{SYNSEM|LOC|CONT} \left[\begin{array}{l} \text{HOOK } [1] \\ \text{RELS } [2 \oplus 3] \\ \text{HCONS } [4 \oplus 5] \end{array} \right] \\ \\ \text{C-CONT} \left[\begin{array}{l} \text{HOOK } [1] \left[\text{IND } [0] \right] \\ \text{RELS } [2] \left\langle \begin{array}{l} \text{udef-rel} \\ \text{ARG0 } [0] \\ \text{RESTR } [6] \\ \text{BODY } \textit{handle} \end{array} \right\rangle \\ \text{HCONS } [4] \left\langle \begin{array}{l} \text{qeq} \\ \text{HARG } [6] \\ \text{LARG } [7] \end{array} \right\rangle \end{array} \right] \\ \\ \text{HEAD-DTR} \left[\begin{array}{l} \text{SYNSEM|LOC|CONT} \left[\begin{array}{l} \text{IND } [0] \\ \text{LTOP } [7] \end{array} \right] \\ \text{RELS } [3] \left\langle \begin{array}{l} \textit{tired} \\ \text{LBL } [7] \\ \text{ARG1 } [0] \end{array} \right\rangle, \left[\begin{array}{l} \textit{squirrel} \\ \text{LBL } [7] \\ \text{ARG0 } [0] \end{array} \right] \\ \text{HCONS } [5] \langle \rangle \end{array} \right] \end{array} \right]$$

The semantic content of the determiner is introduced constructionally in C-CONT. It consists of the relation *udef-rel'*, which is a placeholder for the quantifier that corresponds to *some* or *every* in the case of overt determiners. The RELS and HCONS values that are introduced constructionally ([2] and [4]) are concatenated

⁸We do not assume a unary branching schema for bare plurals but an empty determiner, since using an empty determiner captures the generalizations more directly: while the empty determiner is fully parallel to the overt ones, the unary branching schema is not parallel to the binary branching structures containing an overt determiner. See also Alqurashi & Borsley (2012) for a similar point regarding relative clauses in Modern Standard Arabic with and without a complementizer.

with the RELS and HCONS values of the daughters ([3] and [5]).

The Semantics Principle can now be specified as follows:

Principle 1 (Semantics Principle) *The hook value of a phrase (containing the main index and the local top) is identical to the value of C-CONT/HOOK. The RELS value is the concatenation of the RELS value in C-CONT and the concatenation of the RELS values of the daughters. The HCONS value is the concatenation of the HCONS value in C-CONT and the concatenation of the HCONS values of the daughters.*

5.3.2 Information structure features

Various approaches to information structure have been proposed within HPSG, differing both in the features that are assumed to encode aspects of IS, and in the sort of objects these features take as their value Engdahl & Vallduví (among others, 1996); Wilcock (2001); De Kuthy (2002); Paggio (2005); Webelhuth (2007). The representation we use here is based on Bildhauer (2008a). As mentioned above, we take topic/comment and focus/background to be two information structural dimensions that are orthogonal to one another. We thus introduce both a TOPIC and a FOCUS feature, bundled under a IS feature on *synsem*-objects.⁹ These take as their value a list of lists of *elementary predications*. In the basic case, i. e. in a sentence with a single topic and a single focus, the TOPIC and FOCUS lists each contain one list of *EPs*, which are structure shared with elements on the sign's RELS-list. In other words, we are introducing pointers to individual parts of a sign's semantic content. By packaging the *EPs* pertaining to a focus or topic in individual lists, we are able to deal with multiple foci/topics. The feature architecture just outlined is shown in (19), and (20) illustrates a possible instantiation of the TOPIC, FOCUS and CONT values.

⁹Information-structure should be inside *synsem* because at least information about focus must be visible to elements (such as focus sensitive particles) that select their sister constituent via some feature (MOD, SPEC, COMPS/SUBCAT). Possibly, the situation is different with topics: we are not aware of data showing that topicality matters for selection by modifiers or heads. We leave open the question whether TOPIC is better treated as an attribute of, say, *sign* rather than *synsem*.

$$\begin{aligned}
 (19) \quad & \left[\begin{array}{c} \text{sign} \\ \text{SYNSEM} \left[\begin{array}{cc} \text{LOC} & \text{local} \\ \text{NONLOC} & \text{nonloc} \\ \text{IS} & \left[\begin{array}{cc} \text{is} \\ \text{TOPIC} & \text{list} \\ \text{FOCUS} & \text{list} \end{array} \right] \end{array} \right] \end{array} \right] \\
 (20) \quad & \left[\begin{array}{c} \text{sign} \\ \text{SYNSEM} \left[\begin{array}{c} \text{IS} \left[\begin{array}{c} \text{is} \\ \text{TOPIC} \langle \langle \boxed{1} \rangle \rangle \\ \text{FOCUS} \langle \langle \boxed{2}, \boxed{3} \rangle, \langle \boxed{4} \rangle \rangle \end{array} \right] \\ \text{LOC|CONT|RELS} \langle \boxed{1}, \boxed{2}, \boxed{3}, \boxed{4}, \boxed{5} \rangle \end{array} \right] \end{array} \right]
 \end{aligned}$$

Next, we introduce a subtyping of *is*, given in Figure 5.5. These subtypes can then be used to refer more easily to particular information-structural configurations, that is, to specific combinations of TOPIC and FOCUS values.¹⁰ The subtypes that are relevant for our purpose are *pres* (‘presentational’) and *a-top-com* (‘assessed-topic-comment’, a subtype of the more general *topic-comment* type).

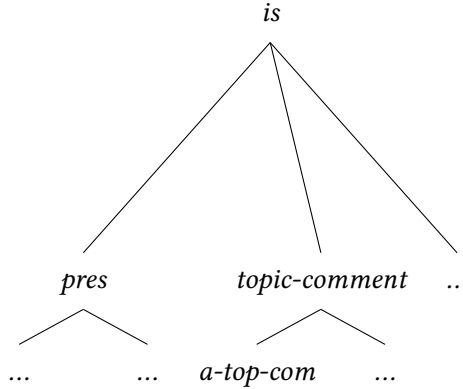


Figure 5.5: Type hierarchy of information structure types

¹⁰These types are thus used as abbreviations or labels for specific combinations of attributes and their values. From a technical perspective, they are not strictly necessary, but we use them here for clarity of exposition.

Those *head-filler* phrases that are instances of multiple fronting can then be restricted to have an IS-value of an appropriate type, as shown in (21).

$$(21) \left[\begin{array}{c} \text{head-filler-phrase} \\ \text{NON-HD-DTRS } \langle [\text{HEAD|DSL } \textit{local}] \rangle \end{array} \right] \Rightarrow [\text{IS } \textit{pres} \vee \textit{a-top-com} \vee \dots]$$

5.3.3 Information structure and apparent multiple frontings

Having introduced MRS and the general representation of information structure constraints, we can now go on and demonstrate how two of the MF patterns that we identified can be modeled in HPSG. Section 5.3.3.1 highlights the syntactic property of MF structures, which can be used to enforce information structure constraints, Section 5.3.3.2 discusses Presentational MFs and Section 5.3.3.3 Propositional Assessment MFs.

5.3.3.1 Identifying cases of MF

To account for the multiple fronting data within HPSG, it is necessary to appropriately constrain syntactic, semantic, and information-structural properties of a sign whenever it instantiates a multiple fronting configuration. Thus, in order to be able to specify any constraints on their occurrence, instances of multiple fronting must be identified in the first place. Since we base our proposal on Müller (2005b) syntactic analysis of multiple fronting, this is not a major problem: on this approach, the occurrence of elements in the preverbal position in general is modeled as a filler-gap-relation, where the non-head daughter corresponds to the preverbal material (prefield) and the head daughter corresponds to the rest of the sentence (in the topological model of the German sentence, this would be the finite verb, the middlefield, and the right bracket, and the final field). In the analysis of multiple frontings that is presented in Section 3.2, filler daughters in multiple fronting configurations (and only in these) have a HEAD|DSL value of type *local*, that is, conforming to the analysis sketched in (4) above, they contain information about an empty verbal head, as shown in (22).

$$(22) \left[\begin{array}{c} \text{head-filler-phrase} \\ \text{NON-HD-DTRS } \langle [\text{HEAD|DSL } \textit{local}] \rangle \end{array} \right]$$

This specification then allows us to pick out exactly the subset of *head-filler*-phrases we are interested in, and to formulate constraints such that they are

only licensed in some specific information-structural configurations, to which we turn next.

5.3.3.2 Modeling Presentational MF

In order to model Presentational MF, we introduce a pointer to the designated topic as a head feature of the verb that subcategorizes for it. The feature DT takes a list (empty or singleton) of *synsem*-objects as its value, and it states which element, if any, is normally realized as the Topic for a particular verb. This is not intended to imply that the designated topic must in fact be realized as the topic in all cases. Rather, it merely encodes a measurable preference in topic realization for a given verb. The statement in (23) is intended as a general constraint, with further constraints on verbs (or classes of verbs) determining which element on ARG-ST is the Designated Topic.

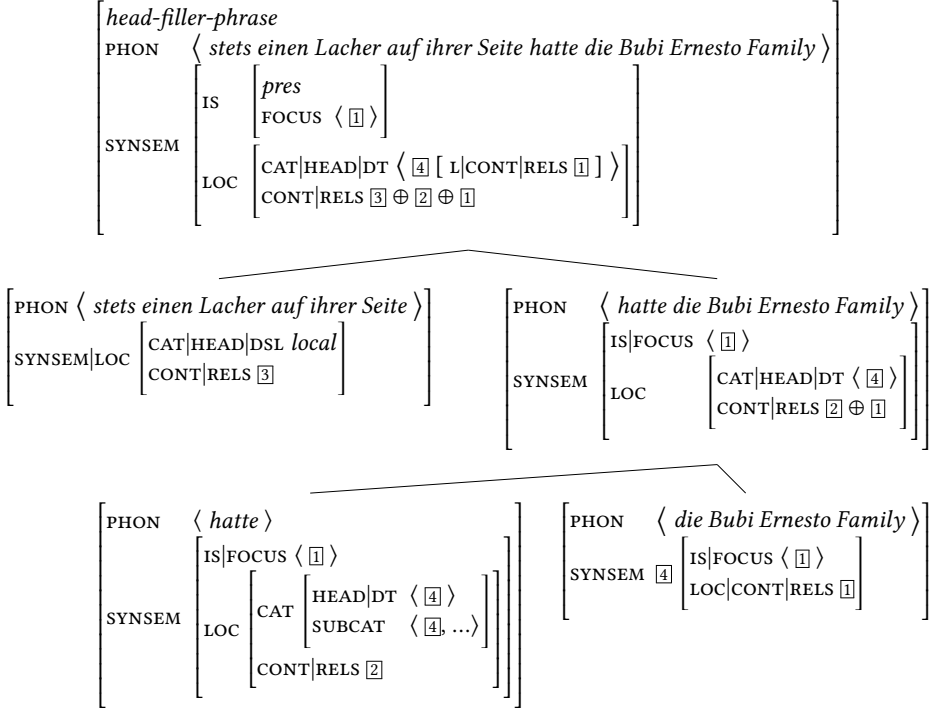
$$(23) \quad verb-stem \Rightarrow \left[\text{HEAD|DT} \langle \rangle \right] \vee \left[\begin{array}{c} \text{HEAD|DT} \langle \boxed{1} \rangle \\ \text{ARG-ST} \quad \square \oplus \langle \boxed{1} \rangle \oplus \square \end{array} \right]$$

The constructional properties of Presentational MF are defined in (24): the designated topic must be located within the non-head daughter and must be focused. Figure 5.6 shows the relevant parts of the analysis of sentence (5) above.

$$(24) \quad \left[\begin{array}{c} \text{head-filler-phrase} \\ \text{IS } pres \end{array} \right] \Rightarrow \left[\begin{array}{c} \text{SYNSEM|L|CAT|HEAD|DT} \langle [\text{L|CONT|RELS } \boxed{1}] \rangle \\ \text{HEAD-DTR|SYNSEM|IS|FOCUS} \langle \boxed{1} \rangle \end{array} \right]$$

5.3.3.3 Modeling Propositional Assessment MF

For Propositional Assessment MF, we use a special subtype of *topic-comment*, namely *a(ssessed)-top-com*. We then state that the designated topic must in fact be realized as the topic, and that it must occur somewhere within the head daughter (which comprises everything but the prefield). Most importantly, the head-daughter must also contain a focused element that has the appropriate semantics (i. e. one which serves to spell out the degree to which the comment holds of the topic; glossed here as *a-adv-rel*). However, the mere presence of such an element on the RELS list does not guarantee that it actually modifies the highest verb in the clause (e. g., it could modify a verb in some embedded clause as well.) Therefore, the construction also adds a handle constraint specifying that the focused element takes scope over the main verb. This handle constraint needs to

Figure 5.6: Sample analysis of *Presentational Multiple Fronting*

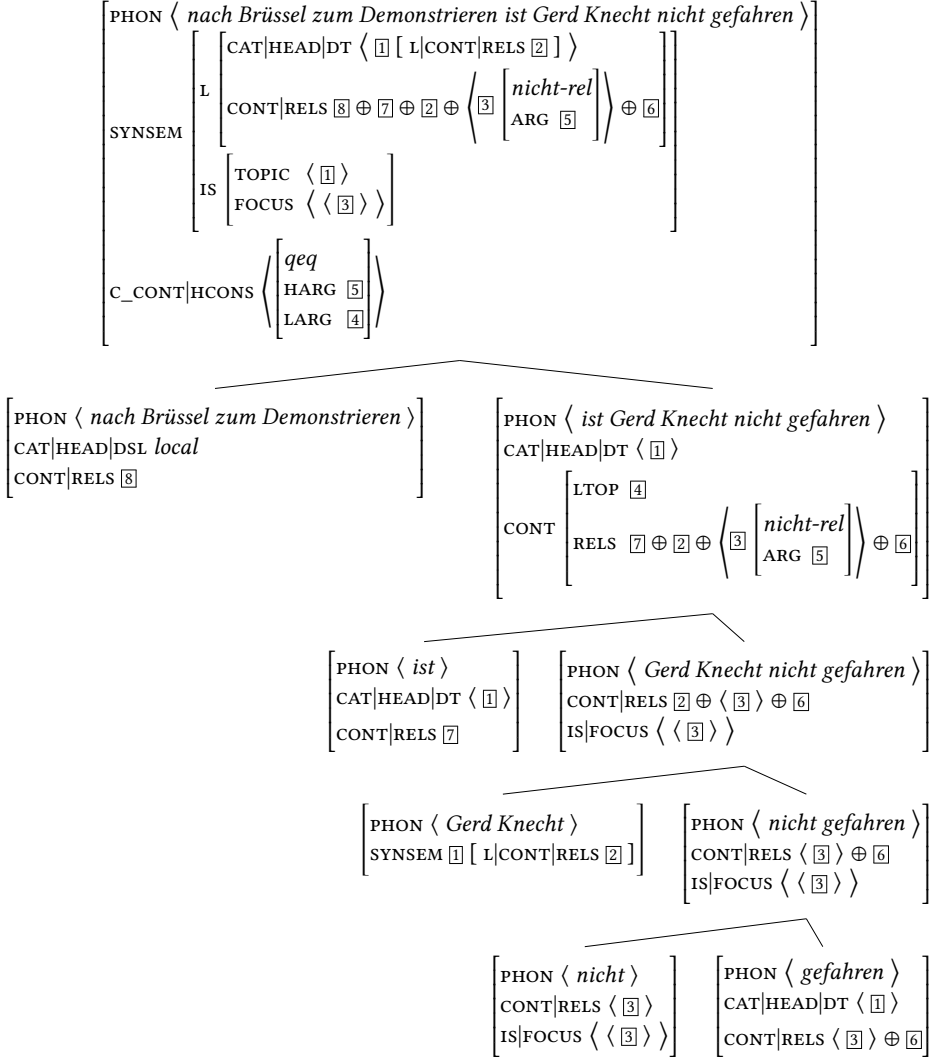
be added rather than just be required to exist among the head-daughter's handle constraints because the *outscooped* relation need not be an immediate one, i. e., there can be more than one scope-taking element involved. An appropriate handle constraint can be introduced via the *c_CONT*-feature, i. e. as the construction's contribution to the overall meaning. If the relevant element does not in fact outscope the main verb, the MRS will contain conflicting information and cannot be scope-resolved. In that case, the phrase's semantics will not be well-formed, which we assume will exclude any unwanted analysis due to focussing of the wrong element. The necessary specifications are stated in (25). A sample analysis of sentence (8c) above is given in Figure 5.7.

$$(25) \quad \left[\begin{array}{l} \text{head-filler-phrase} \\ \text{IS } a\text{-top-com} \end{array} \right] \Rightarrow$$

$$\left[\begin{array}{l} \text{SYNSEM} \left[\begin{array}{l} \text{L|CAT|HEAD|DT} \langle [\text{L|CONT|RELS } \boxed{1}] \rangle \\ \text{IS} \left[\begin{array}{l} \text{TOPIC} \langle \boxed{1} \rangle \\ \text{FOCUS} \langle \langle \boxed{3} \rangle \rangle \end{array} \right] \end{array} \right] \\ \text{C_CONT|HCONS} \left\langle \begin{array}{l} qeq \\ \text{HARG } \boxed{5} \\ \text{LARG } \boxed{4} \end{array} \right\rangle \\ \text{HEAD-DTR|SYNSEM|CONT} \left[\begin{array}{l} \text{LTOP } \boxed{4} \\ \text{RELS} \left\langle \boxed{3} \left[\begin{array}{l} a\text{-adv-rel} \\ \text{ARG } \boxed{5} \end{array} \right] \right\rangle \bigcirc \boxed{1} \bigcirc \square \end{array} \right] \end{array} \right]$$

5.4 Conclusion

In the way outlined above, the relative freedom of the fronted material in the analysis of multiple frontings that was provided in Chapter 3.2 is appropriately restricted with respect to the contexts in which multiple frontings can felicitously occur. While we are not claiming to have identified these contexts exhaustively, the two configurations modeled here, if taken together, account for the majority of naturally occurring examples in our database. In sum, then, this chapter underlines the importance of examining attested examples in context and demonstrates that it is possible to further constrain a syntactic phenomenon which in the past has even been deemed ungrammatical in many (decontextualized) examples.

Figure 5.7: Sample analysis of *Propositional Assessment MF*

6 Alternatives

This chapter discusses alternative proposals of German sentence structure. The phenomena that have to be explained by all proposals are the placement of the (finite) verb in initial or final position, the possibility of scrambling of arguments, the fact that German is a V2 language that allows to front an arbitrary constituent even if the constituent is dependent on a deeply embedded head and the fact that sometimes there seem to be more than one constituent in the position before the finite verb.

Existing approaches can be classified along the following dimensions:

- phrase structure-based vs. dependency-based
- flat structures vs. binary branching structures
- discontinuous vs. continuous constituents
- linearization vs. “head movement”
- linearization-based approaches vs. “movement”

Movement and head movement are put in quotes since I include GPSG, HPSG, and Dependency Grammar analyses among the movement analyses although technically, there is no movement in any of these frameworks, but there are special relationships between fillers and gaps. In the following I will explore proposals from various frameworks (GPSG, HPSG, Dependency Grammar) that differ along these dimensions.

The first proposal I want to look at is a GPSG proposal that does not assume a head-movement mechanism.

6.1 Flat structures and free linearization of the verb

Uszkoreit (1987) has developed a GPSG grammar for German which assumes that a verb is realized with its arguments in a local tree. As the verb and its arguments are dominated by the same node, they can – under GPSG assumptions

– exhibit free ordering as long as certain theory-specific linearization constraints are respected. For instance there is a rule for ditransitive verbs that states that a sentence (V3) may consist of a verb (the head, abbreviated as H) and three NPs:

- (1) $V3 \rightarrow H[8], N2[CASE\ dat], N2[CASE\ acc], N2[CASE\ nom]$

Each lexical item of a verb comes with a number which is associated with its valence and regulates into which kind of phrase a verb can be inserted. The example in (1) shows a rule for ditransitive verbs. Since this rule does not restrict the order in which the elements at the right hand side of the rule have to be realized, verb initial and verb final orderings are possible. Furthermore all six permutations of the NPs can be derived.

Pollard (1996) has adapted Uszkoreit’s approach for his HPSG analysis of sentence structure in German.

These kinds of analyses have the advantage of not needing empty heads to describe the position of the verb. However, there does not seem to be any possibility of expressing the generalizations that are captured in the analysis of apparent multiple frontings that was presented in the previous chapter in a flat linearization model. In head-movement analyses it is possible to assume that the verb trace forms a constituent with other nonverbal material, but this option is simply excluded in approaches like the GPSG one for the simple reason that there is no empty verbal head.

Of course one could assume an empty element into the *Vorfeld* as I did in Müller (2002b,c; 2005b), but this empty element would be a special empty element that would not be needed in any other part of the grammar and it would be stipulated with the only purpose of getting an analysis of apparent multiple frontings.

GPSG is famous for its non-transformational treatment of non-local dependencies (Gazdar 1981) and the tools that were developed by Gazdar for extraction in English were used by Uszkoreit (1987) for the analysis of V2 sentences in German. However, some researchers assume that such mechanisms are not necessary for simple sentences. They see the possible orderings as a simple reordering of elements that depend on the same head. Such proposals are discussed in the following section.

6.2 Flat structures and no extraction in simple sentences

This section deals with approaches that assume that the constituent orders in (2) are just linearization variants of each other:

- (2) a. Der Mann kennt die Frau.
the.NOM man knows the.ACC woman
- b. Die Frau kennt der Mann.
the.ACC woman knows the.NOM man
- c. Kennt der Mann die Frau?
knows the.NOM man the.ACC woman
- d. [dass] der Mann die Frau kennt
that the.NOM man the.ACC woman knows

(2) shows two V2 sentences and one V1 and one VL sentence. While most theories assume that *der Mann* in (2a) and *die Frau* in (2b) are extracted, there are some researchers that assume that these two sentences are just possible linearizations of the dependents of *kennt* ‘knows’. Such linearization proposals have been made in HPSG (Kathol 1995: Chapter 6.3; Wetta 2011; 2014)¹ and in Dependency Grammar. In what follows, I discuss the Dependency Grammar proposal in more detail.

One option in a Dependency Grammar analysis would be to allow for discontinuous constituents and assume that dependents of deeply embedded heads can be serialized in the *Vorfeld* even if the head is not adjacent to the *Vorfeld*. However, such radical approaches are difficult to constrain (Müller 2016) and are hardly ever proposed in Dependency Grammar. Instead Dependency Grammarians like Kunze (1968), Hudson (1997; 2000), Kahane, Nasr & Rambow (1998), and Groß & Osborne (2009) suggested analyses in which dependents of a head rise to a dominating head for those cases in which a discontinuity would arise otherwise. The approach is basically parallel to the treatment of non-local dependencies in GPSG, HPSG, and LFG, but the difference is that it is only assumed for those cases in which discontinuity would arise otherwise. However, there seems to be a reason to assume that fronting should be treated by special mechanisms even in cases that allow for continuous serialization. In what follows I discuss three phenomena that provide evidence for a uniform analysis of V2 sentences: scope of adjuncts, coordination of simple and complex sentences, and apparent multiple frontings that cross clause boundaries.

¹Kathol (2001) revised his treatment and assumes a uniform analysis of V2 phenomena in German.

6.2.1 Scope of adjuncts

The ambiguity or lack of ambiguity of the examples in (17a) from page 14–repeated here as (3)–cannot be explained in a straightforward way:

- (3) a. *Oft liest er das Buch nicht.*
 often reads he the book not
 ‘It is often that he does not read the book.’ or ‘It is not the case that he reads the book often.’
- b. *dass er das Buch nicht oft liest*
 that he the book not often reads
 ‘It is not the case that he reads the book often.’
- c. *dass er das Buch oft nicht liest*
 that he the book often not reads
 ‘It is often that he does not read the book.’

The point about the three examples is that only (3a) is ambiguous. Even though (3c) has the same order as far as *oft* ‘often’ and *nicht* ‘not’ are concerned, the sentence is not ambiguous. So it is the fronting of an adjunct that is the reason for the ambiguity. The dependency graph for (3a) is shown in Figure 6.1. Of

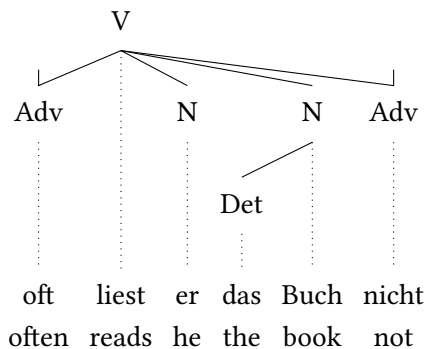


Figure 6.1: Dependency graph for *Oft liest er das Buch nicht.* ‘He does not read the book often.’

course the dependencies for (3b) and (3c) do not differ, so the graphs would be the same only differing in serialization. Therefore, differences in scope could not be derived from the dependencies and complicated statements like (4) would be necessary:

- (4) If a dependent is linearized in the *Vorfeld* it can both scope over and under all other adjuncts of the head it is a dependent of.

Eroms (1985: 320) proposes an analysis of negation in which the negation is treated as the head, that is, the sentence in (5) has the structure in Figure 6.2.² This analysis is equivalent to analyses in the Minimalist Program that assume a

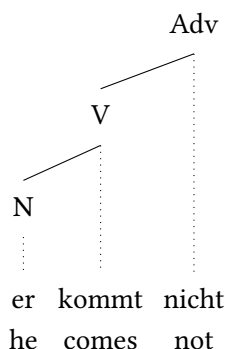


Figure 6.2: Analysis of negation according to Eroms (1985: 320)

NegP and it has the same problem: The category of the whole object is Adv, but it should be V. This is a problem since higher predicates may select for a V rather than an Adv. See for instance the analysis of embedded sentences like (6) below.

The same is true for constituent negation or other scope bearing elements. For example, the analysis of (5) would have to be the one in Figure 6.3.

- (5) der angebliche Mörder
the alleged murderer

This structure would have the additional problem of being non-projective. Eroms does treat the determiner differently from what is assumed here, so this type of non-projectivity may not be a problem for him. However, the head analysis of negation would result in non-projectivity in so-called coherent constructions in German. The following sentence has two readings: in the first reading the negation scopes over *singen* 'sing' and in the second one over *singen darf* 'sing may'.

- (6) dass er nicht singen darf
that he not sing may
'that he is not allowed to sing' or 'that he is allowed not to sing'

²But see Eroms (2000: Section 11.2.3).

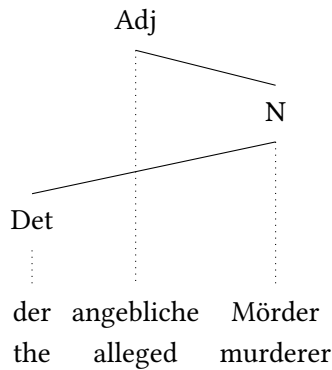


Figure 6.3: Analysis that would result if one considered all scope-bearing adjuncts to be heads

The reading in which *nicht* scopes over the whole verbal complex would result in the non-projective structure that is given in Figure 6.4. Eroms also considers an

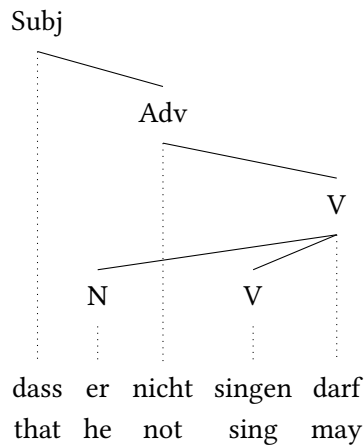


Figure 6.4: Analysis that results if one assumes the negation to be a head

analysis in which the negation is a word part ('Wortteiläquivalent'), but this does not help here since first the negation and the verb are not adjacent in V2 contexts like (17a) and even in verb final contexts like (6). Eroms would have to assume that the object to which the negation attaches is the whole verbal complex *singen darf*, that is, a complex object consisting of two words.

So, this leaves us with the analysis provided in Figure 6.1 and hence with a

problem since we have one structure with two possible adjunct realizations that correspond to different readings, which is not predicted by an analysis that treats the two possible linearizations simply as alternative orderings.

Thomas Groß (p. c. 2013) suggested an analysis in which *oft* does not depend on the verb but on the negation. This corresponds to constituent negation in phrase structure approaches. The dependency graph is shown at the left-hand side in Figure 6.5. The figure at the right-hand side shows the graph for the

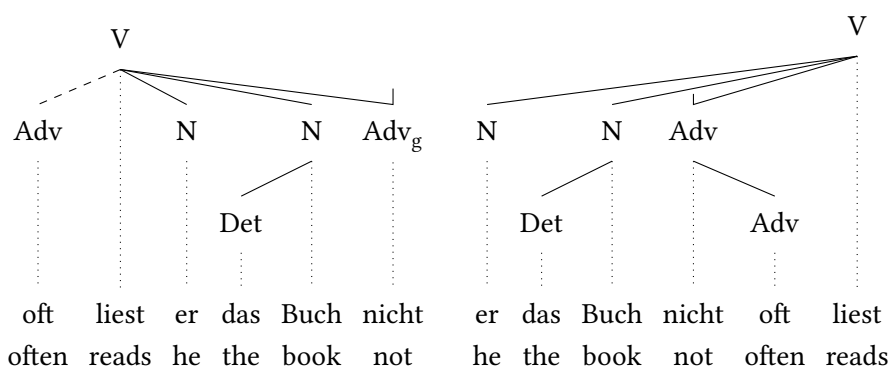


Figure 6.5: Dependency graph for *Oft liest er das Buch nicht*. ‘He does not read the book often.’ according to Groß and verb-final variant

corresponding verb-final sentence. The reading that corresponds to constituent negation can be illustrated with contrastive expressions. While in (7a) it is just the *oft* ‘often’ that is negated, it is *oft gelesen* ‘often read’ that is in the scope of negation in (7b).

- (7) a. Er hat das Buch nicht oft gelesen, sondern selten.
 he has the book not often read but seldom
 ‘He did not read the book often, but seldom.’
 b. Er hat das Buch nicht oft gelesen, sondern selten gekauft.
 he has the book not often read but seldom bought
 ‘He did not read the book often but rather bought it seldom.’

These two readings correspond to the two phrase structure trees in Figure 6.6. Note that in an HPSG analysis, the adverb *oft* would be the head of the phrase *nicht oft* ‘not often’. This is different from the Dependency Grammar analysis suggested by Groß. Furthermore, the Dependency Grammar analysis has two structures: a flat one with all adverbs depending on the same verb and one in which *oft* depends on the negation. The phrase structure-based analysis has

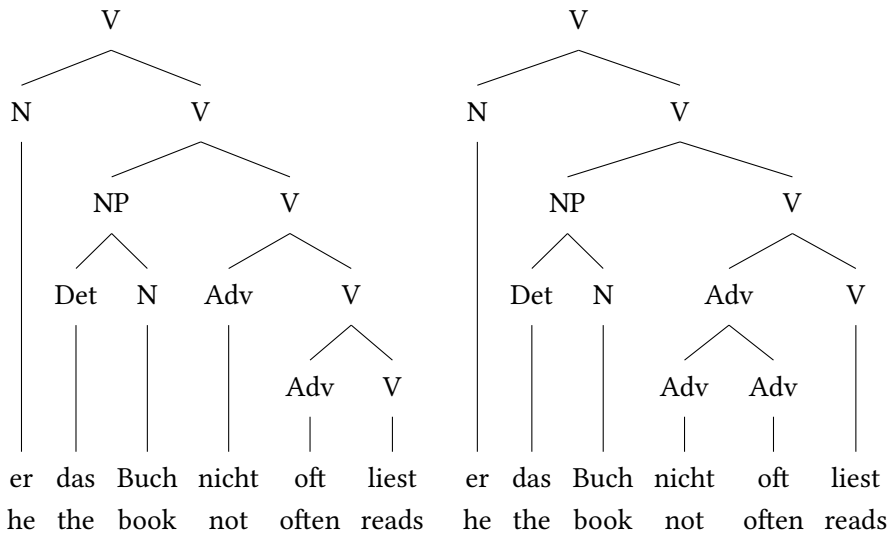


Figure 6.6: Possible syntactic analyses for *er das Buch nicht oft liest* 'He does not read the book often.'

three structures: one with the order *oft* before *nicht*, one with the order *nicht* before *oft* and the one with direct combination of *nicht* and *oft*. The point about the example in (17a) is that one of the first two structures is missing in the Dependency Grammar representations. This probably does not make it impossible to derive the semantics, but it is more difficult than it is in constituent-based approaches.

6.2.2 Coordination of simple and complex sentences

A further argument against linearization approaches for simple sentences can be based on the following coordination example:

- (8) Wen_i kennst _i du und glaubst du, dass _i jeder kennt?
 who knows you and believe you that everybody knows
 'Who do you know and do you believe that everybody knows?'

The classical analysis of Across the Board Extraction by Gazdar (1981) assumes that two slashed clauses are coordinated. If one assumes that simple clauses are analyzed via linearization of one element into the *Vorfeld* while long-distance dependencies are analyzed with a special mechanism (for instance the SLASH

mechanism of GPSG/HPSG or special dependencies Hudson (2000)), the two coordinated clauses in (8) would differ fundamentally in their structure and all coordination theories would fail. The conclusion is that coordination forces us to treat the frontings in the sentences in (9) in the same way:

- (9) a. Wen kennst du?
 who knows you
 ‘Who do you know?’
 b. Wen glaubst du, dass jeder kennt?
 who believe you that everybody knows
 ‘Who do you believe that everybody knows?’

Either both sentences are analyzed via linearization or both are analyzed using a special mechanism for extraction. Since linearization analyses of (9b) are either very complicated (in HPSG) or open Pandora’s box (in Dependency Grammar, see Müller 2016: Section 11.7.1), extraction-based analyses with a special mechanism for both sentences should be preferred.

6.2.3 Apparent multiple frontings

Furthermore, note that models that directly relate dependency graphs to topological fields will not be able to account for sentences like (10).

- (10) Dem Saft eine kräftige Farbe geben Blutorangen.³
 the juice a strong color give blood.oranges
 ‘Blood oranges give the juice a strong color.’

The dependency graph of this sentence is given in Figure 6.7.

Such apparent multiple frontings are not restricted to NPs. As was shown in Section 3.1, various types of dependents can be placed in the *Vorfeld*. Any theory that is based on dependencies alone and that does not allow for empty elements is forced to give up the restriction that is commonly assumed in the analysis of V2 languages, namely that the verb is in second position. In comparison, analyses like GB and those HPSG variants that assume an empty verbal head can assume that a projection of such a verbal head occupies the *Vorfeld*. This explains why the material in the *Vorfeld* behaves like a verbal projection containing a visible verb: Such *Vorfelds* are internally structured topologically, they may have a filled

³Bildhauer & Cook (2010) found this example in the *Deutsches Referenzkorpus* (DeReKo), hosted at Institut für Deutsche Sprache, Mannheim: <http://www.ids-mannheim.de/kl/projekte/korpora>

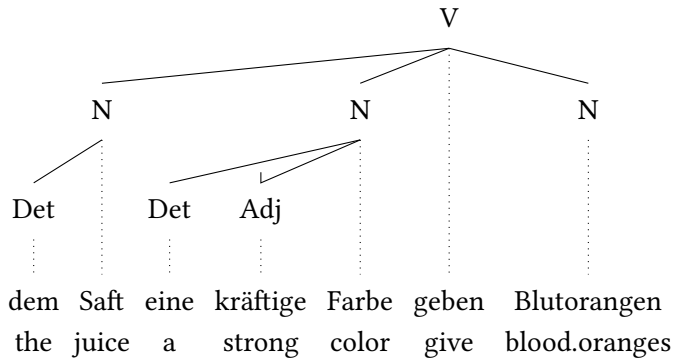


Figure 6.7: Dependency graph for *Dem Saft eine kräftige Farbe geben Blutorange*.
 ‘Blood oranges give the juice a strong color.’

Nachfeld and even a particle that fills the right sentence bracket (Examples with verbal particle and *Mittelfeld* or *Nachfeld* are given in (51) on page 84). The equivalent of the analysis in Gross & Osborne’s framework (2009) would be something like the graph that is shown in Figure 6.8, but note that Groß & Osborne (2009: 73) explicitly reject empty elements and in any case an empty element that is stipulated just to get the multiple fronting cases right would be entirely ad hoc.⁴ It is important to note that the issue is not solved by simply dropping the V2 constraint and allowing dependents of the finite verb to be realized to its left, since the fronted constituents do not necessarily depend on the finite verb as the examples in (11a) and (11c) from page 61 – repeated here as (11) – show:

- (11) a. [Gezielt] [Mitglieder] [im Seniorenbereich] wollen die
 targeted members in.the senior.citizens.sector want.to the
 Kendoka allerdings nicht werben.⁵
 Kendoka however not recruit
 ‘However, the Kendoka do not intend to target the senior citizens
 sector with their member recruitment strategy.’
- b. [Kurz] [die Bestzeit] hatte der Berliner Andreas Klöden [...]
 briefly the best.time had the Berliner Andreas Klöden

⁴I stipulated such an empty element in a linearization-based variant of HPSG allowing for discontinuous constituents (Müller 2002c), but later modified this analysis so that only continuous constituents are allowed and verb position is treated as head-movement and multiple frontings involve the same empty verbal head as is used in the verb movement analysis. The revised theory is presented in this book.

⁵taz, 07.07.1999, p. 18. Quoted from Müller (2002c).

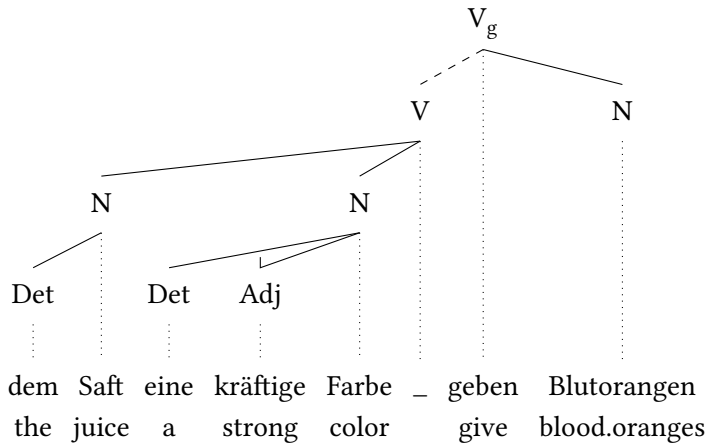


Figure 6.8: Dependency graph for *Dem Saft eine kräftige Farbe geben Blutorangen*. ‘Blood oranges give the juice a strong color.’ with an empty verbal head for the *Vorfeld*

gehalten.⁶

held

‘Andreas Klöden from Berlin had briefly held the record time.’

And although the respective structures are marked, such multiple frontings can even cross clause boundaries:

- (12) a. Der Maria einen Ring glaube ich nicht, daß er je schenken
the Maria a ring believes I not that he ever give
wird.⁷
will

‘I dont think that he would ever give Maria a ring.’

- b. Kindern Bonbons denke ich daß man besser nicht gibt.⁸
children candy think I that one better not gives
‘I think it’s better not to give candy to children.’

If such dependencies are permitted it is really difficult to constrain them. As was discussed in Section 3.1.11, I started with an approach that admitted several

⁶Märkische Oderzeitung, 28./29.07.2001, p. 28.

⁷Fanselow (1993: 67).

⁸G. Müller (1998: 261).

elements in SLASH, but the disadvantage was that it was difficult to explain why certain parts of idioms could not be extracted. Furthermore, it would be difficult to represent the fact that the fronted elements have to be clausemates (see also Section 3.1.11).

So far I only discussed Dependency Grammar approaches but all the issues mentioned in this and the previous subsections are also problematic for Wetta's approach (2011; 2014). Wetta, working in the framework of linearization-based HPSG (Reape 1994; Kathol 1995; 2001; Müller 1999; 2002a), assumes that sentences in which the fronted elements belong to a verb in the same clause are simply reordering variants of sentences with the verb in initial or final position. For the analysis of apparent multiple frontings Wetta (2011) assumes a relational constraint that takes arbitrarily many preverbal objects and forms a new complex one:⁹

- (13) Discourse prominence constructions for German according to Wetta (2011: 264):

a. $\text{doms}_\circ(\langle [\text{DOM } X_1], \dots, [\text{DOM } X_n] \rangle) \equiv X_1 \circ \dots \circ X_n$

b. *prom-part-compact-dom-cxt* \Rightarrow

$$\left[\begin{array}{c} \text{MTR} \left[\text{DOM} \left\langle \left[\begin{array}{c} \text{PROM} + \\ \text{DOM} \quad \text{doms}_\circ(L_1) \end{array} \right] \right\rangle \circ \text{doms}_\circ(L_2) \right] \\ \text{DTRS } L_1:\text{list}([\text{PROM}+]) \circ L_2:\text{list} \end{array} \right]$$

The list L_1 in (13) is a list of elements that are marked as prominent (PROM+). The idea is that these elements are compacted into one element which is then the element that is placed in the *Vorfeld*. The daughters that are not marked as prominent are collected in L_2 .¹⁰ Since they are combined with \circ with the prominent element, they can appear in any order provided no linearization constraint is violated. Figure 6.9 shows what (13b) does.¹¹ The daughters of the complete construction are shown in the figure. *zum zweiten Mal* and *die Weltmeisterschaft*

⁹I added a DOM feature in the first domain element of the mother, which was missing in the original.

¹⁰Actually the fact that L_2 does contain PROM- elements is not specified in (13b). It may follow from other constraints in the theory. They were not given in the paper though.

¹¹Note that Wetta (2011: 259) assumes an unusual definition of compaction and hence that the DOM value of *die Weltmeisterschaft* is a single object, while all other domain-based approaches assume that *die Weltmeisterschaft* has two DOMAIN objects: *die* and *Weltmeisterschaft* (Kathol & Pollard 1995; Kathol 2001; Müller 1996b; 1999). Without these rather unusual assumptions the call of doms_\circ would be unnecessary and L_1 and L_2 could be used directly.

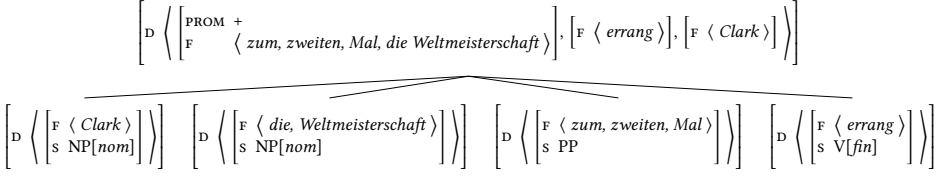


Figure 6.9: Vn with partial compaction according to Wetta (2011: 264)

will be marked *PROM+* and their *DOM* values will be combined via \bigcirc and the result will be the *DOM* value of the first element in the *DOM* list of the mother. This begs the question what the properties of this new object would be. This is not made explicit in Wetta's paper but he assumes that domain objects are of type *sign*, so this object has to have syntactic and semantic properties. Note that HPSG grammars are descriptions of models. Descriptions are usually partial. Everything that is not specified can vary as long as no appropriateness conditions on types are violated (King 1999). For example, a theory of German could leave the actual case value of the German noun *Frau* 'woman' unspecified since it is clear that the type *case* has the four subtypes *nom*, *gen*, *dat*, *acc*. In a model, the value can only vary in this limit, that is, the actual case has to be one of these four values (Müller 2007a: Section 2.7). If this is applied to Wetta's theory we get infinitely many models since the syntactic properties of the first domain element are not specified. Since valence lists are part of syntactic descriptions and since they may be arbitrarily long in principle, there are infinitely many models for Wetta's structures. To fix this, he would have to specify the category of the element in the *Vorfeld*. But what could the category be? In other partial compaction theories the category of the created element is the category of the head (Kathol & Pollard 1995; Kathol 2001; Müller 1996b; 1999), but in Wetta's theory there is no common head for the compacted objects. He could stipulate that the newly created object would be something like the object one gets in an analysis with an empty verbal head. But then a relational constraint is used that creates structure out of nothing instead of the assumption of an empty head that basically behaves like a normal visible verb. The constraint introducing this verbal element would be something unseen elsewhere in the grammar. Nothing is gained by such an analysis.

Wetta (2014) drops the relational constraint that compacts several fronted elements into one consituent and just states that arbitrarily many constituents can appear in front of the finite verb in German. This has the advantage that no stipulation of the properties of the preverbal constituent is needed but it leaves the

fact unexplained that the material in front of the finite verb behaves like a verbal projection with all topological fields in them (see below).

Neither Wetta (2011) nor Wetta (2014) addresses data like (12) and indeed it would be difficult to integrate such data into his picture, since he does assume that nonlocal frontings are handled via the SLASH mechanism. Wetta (2018) suggested a modification of the Filler-Head Schema that allows multiple elements in SLASH and inserts the SLASH elements into the order domain of the head.¹²

(14) *filler-s-p-cxt* \Rightarrow

$$\left[\begin{array}{l} \text{MTR} \\ \text{DTRS} \\ \text{HD-DTR} \end{array} \left[\begin{array}{l} \left[\begin{array}{l} \text{SYN} \left[\begin{array}{l} \text{CAT } y \\ \text{VAL } \langle \rangle \\ \text{GAP } \langle \rangle \end{array} \right] \\ \langle H \rangle \circ L_1 \circ L_2 \circ \langle C \rangle \\ H: \left[\begin{array}{l} \text{SYN} \left[\begin{array}{l} \text{CAT } Y: [\text{VF } \textit{fin}] \\ \text{VAL } L_1 \oplus \left\langle C: \left[\begin{array}{l} \textit{clause} \\ \text{SYN } [\text{GAP } L_2] \end{array} \right] \right\rangle \end{array} \right] \end{array} \right] \end{array} \right] \right] \right]$$

H is the head of the matrix clause, the finite verb, C is the clausal complement of H, L_1 is the list of other arguments of H and L_2 is the list of gaps coming up from the embedded clause. The DTRS list of the complete construction consists of the shuffling of lists containing the head and the complement clause and L_1 and L_2 . Shuffling means that the elements of the involved lists can be ordered in any order as long as the relative order of elements in the lists remains constant (Reape 1994). That is, elements from L_1 can be ordered before or after any elements from the other lists as long as the order of elements in L_1 is not changed.¹³

¹²I adapted the schema and put the C inside of the angle brackets.

¹³In fact this makes wrong predictions as far as the order of arguments in L_1 is concerned. German is a scrambling language and hence all orders of arguments of a head are allowed for in principle. For example both the orderings of the subject and object of *gebeten* in (i) are possible.

- (i) a. [Über dieses Thema]_i hat noch niemand den Mann gebeten,
 about this topic has yet nobody.NOM the man.ACC asked
 [[einen Vortrag _{-i} zu halten].
 a talk to give
 ‘Nobody asked the man yet to give a talk about this topic.’
 b. [Über dieses Thema]_i hat den Mann noch niemand gebeten,
 about this topic has the man.ACC yet nobody.NOM asked

This makes it possible to account for sentences like (12) but this analysis does not explain that the elements that appear in front of the finite verb have to be clause mates. Wetta (2014: 171) captures the same-clause restriction by analyzing Vn orders as local reorderings. Since in the 2014 approach nonlocal dependencies are not involved in Vn constructions, it follows that the elements have to be clause mates (dependents of the verbs in the highest clause). In order to deal with examples like (12), Wetta (2018) drops the constraint that relates Vn to local reorderings. But as soon as nonlocal dependencies are allowed in Vn constructions, the problem of mixing material depending on different heads creeps back in again. Rui Chaves (p. c. 2018) suggested that one could fix this problem by information-structural constraints on the fronted material. He suggested that all fronted elements are marked as [PROMINENT+] and that all PROM+ elements have to depend on the same semantic predicate. Note that such a constraint would be violated in sentences in which a V2 sentence is embedded into another V2 sentence:

- (15) Peter denkt, Klaus kommt morgen.
 Peter thinks Klaus comes tomorrow
 ‘Peter thinks that Klaus is coming tomorrow.’

Peter is fronted and hence PROM+ and *Klaus* is also fronted and PROM+. Both depend on different verbs and both are fronted but within separate clauses. The fronted elements do not share a common *Vorfeld*. So, the constraint that is supposed to rule out (16) would also rule out (15).

- (16) * Peter Klaus denkt, kommt morgen.
 Peter Klaus thinks comes tomorrow

There may be ways to formalize the intuition behind the original proposal but this cannot be done exclusively on the semantic/information structural level. One would have to find ways to know which *Vorfeld* one is talking about, that is,

[[einen Vortrag _{-i} zu halten].
 a talk to give

Since the schema in (14) can account for only one of these orders, it is not empirically adequate. The same problem applies to several schemata in Wetta (2014), for example to the schema he gives on page 164: the elements of L can be scrambled but the schema does not account for this. The problem can be solved by assuming a special constraint that maps a list to all lists containing permutations of its elements. Rather than combining L₁ with the other lists in (14), one would then combine permutations(L₁) with the lists. Of course stipulating such a constraint that is not used anywhere else in Wetta’s grammar adds to the complexity of his approach.

whether the constituents are in the same *Vorfeld* or in different ones. The empty verbal head seems to be better suited to capture such constraints than any other device one may think of.

Note that information structural approaches that assume that several independent items are fronted and that these fronted elements have certain special information structure functions also fail on examples like the Claudia Perez sentence in (95) on page 113, which was discussed in Section 3.3.4.4. Sentences like (51f) from page 85—repeated here as (17)—are also problematic since it is not the case that the fronted elements have a special information structural status. It is not appropriate to just label *los* and *damit* as PROM+ and state that all PROM+ elements are ordered before the finite verb. It is the fronted phrase that has to be taken care of. Without the assumption of a phrase there, there is no straight-forward way to do this.

- (17) *Los damit geht es schon am 15. April.*¹⁴
 off there.with goes it PRT on 15. April
 ‘The whole thing starts on the 15th April.’

Note also that the order of the elements before the finite verb corresponds to the order that we would see without fronting. *los* is a right sentence bracket and *damit* is extraposed. Any theory that assumes that *los* and *damit* are in the same order domain as the finite verb would run into deep trouble since it would have to assume a right sentence bracket (*los* ‘off’) and a *Nachfeld* (*damit* ‘there.with’) to the left of the left sentence bracket (*geht* ‘goes’).¹⁵

Another problem that SLASH-based approaches have is also present again for Wetta’s revised proposal: it is difficult to restrict the fronting of idiom parts. It is possible to construct nonlocal frontings that are parallel to the examples that were discussed in Section 3.1.8.

- (18) [Öl] [ins Feuer] behauptete der Vorsitzende, dass gestern das
 oil in.the fire claimed the chairman that yesterday the

¹⁴taz, 01.03.2002, p. 8.

¹⁵There is a technical solution to the problem: one could set up linearization constraints that only apply to constituents with the same PROM value. PROM+ would be the *Vorfeld*, PROM– the rest of the clause. In order to avoid the problems with information structural properties of the elements in the *Vorfeld*, the PROM feature could be renamed into VORFELD.

- (i) a. Mittelfeld [VORFELD $\boxed{1}$] < right bracket [VORFELD $\boxed{1}$]
 b. right bracket [VORFELD $\boxed{1}$] < Nachfeld [VORFELD $\boxed{1}$]

See Kasper, Kathol & Pollard (1995) on linearization constraints with structure sharing.

Rote-Khmer-Radio gegossen habe.
 Rote-Khmer-Radio poured has
 ‘The chairman claimed that Rote-Khmer-Radio fanned the flames
 yesterday.’

As was explained in Section 3.1.12, fronting of *ins Feuer* ‘in.the fire’ without *Öl* ‘oil’ results into a literal reading. It is not obvious how this constraint can be formalized in an extraction-based approach while the restriction that certain idiom parts want to stick together in a verbal projection falls out immediately from an approach using an empty verbal head. I argued that the head is the same head as is used in the verb movement analysis. So no new empty elements are needed to get the data discussed in this section.

In what follows I have a look at other verb movement analyses that have been suggested in HPSG.

6.3 Binary branching and linearization domains

Kathol (2000) suggests an analysis with binary branching structures in which all arguments are inserted into a linearization domain and can be serialized there in any order provided no LP rule is violated. Normally one would have the elements of the COMPS list in a fixed order, combine the head with one element from the COMPS list after the other, and let the freedom in the DOM list be responsible for the various attested orders. So both sentences in (19) would have analyses in which the verb *erzählt* is combined with *Geschichten* first and then *Geschichten erzählt* is combined with *den Wählern*. Since the verb and all its arguments are in the same linearization domain they can be ordered in any order including the two orders in (19):

- (19) a. weil er den Wählern Geschichten erzählt
 b. weil er Geschichten den Wählern erzählt

The problem with this approach is that examples like (20) show that grammars have to account for combinations of any of the objects to the exclusion of the other:

- (20) a. Geschichten erzählen sollte man den Wählern nicht.
 b. Den Wählern erzählen sollte man diese Geschichten nicht.

Kathol (2000) accounts for examples like (20) by relaxing the order of the objects in the valence list. He uses the shuffle operator in the valence representation:

$$(21) \quad \langle \text{NP}[\text{NOM}] \rangle \oplus \langle \text{NP}[\text{DAT}] \rangle \circ \langle \text{NP}[\text{ACC}] \rangle$$

This solves the problem with examples like (20) but it introduces a new one: sentences like (19) now have two analyses each. One is the analysis we had before and another one is the one in which *den Wählern* is combined with *erzählt* first and the result is then combined with *Geschichten*. Since both objects are inserted into the same linearization domain, both orders can be derived. So we have too much freedom: freedom in linearization and freedom in the order of combination. The proposal that I suggested has just the freedom in the order of combination and hence can account for both (19) and (20) without spurious ambiguities.

6.4 Binary branching in different directions

Steedman (2000: 159), working in the framework of Categorical Grammar, proposed an analysis with variable branching for Dutch, that is, there are two lexical entries for *at* ‘eat’: an initial one with its arguments to the right, and another occupying final position with its arguments to its left.

- (22) a. *at* ‘eat’ in verb-final position: $(s_{+\text{SUB}} \backslash \text{np}) \backslash \text{np}$
 b. *at* ‘eat’ in verb-initial position: $(s_{-\text{SUB}} / \text{np}) / \text{np}$

Steedman uses the feature SUB to differentiate between subordinate and non-subordinate sentences. Both lexical items are related via lexical rules.

Such approaches were criticized by Netter (1992) since the branching in verb-initial sentences is the mirror image of verb-final sentences. The scope facts in sentences like (8) on page 9 cannot be explained easily, while they fall out automatically in a verb movement approach as is shown in the examples in (23):

- (23) a. Er lacht_i [absichtlich [nicht ${}_i$]].
 he laughs intentionally not
 ‘He is intentionally not laughing.’
 b. Er lacht_i [nicht [absichtlich ${}_i$]].
 he laughs not intentionally
 ‘He is not laughing intentionally.’

Now, it has to be said that the scoping is the same in SVO languages like French even though no movement took place. So there may be a more general analysis of adjunct scope that covers both SVO languages and the two verb placements that are possible in V2 languages with SOV order.

Independent of the scope question is the analysis of apparent multiple frontings if there is no empty head it is not obvious how the phenomenon that was discussed in Chapter 3 can be analyzed. The proposals with binary branching structures and different branching directions are basically similar to the GPSG proposal with flat structures and two alternative serializations of the finite verb. See Section 6.1.

6.5 Alternative verb-movement analyses

The rule for verb-first placement in German proposed here is similar to that of Kiss & Wesche (1991), Kiss (1995a: Chapter 2.2.4.2) and Frank (1994a). However, there are differences and these will be discussed in what follows.

Kiss (1995a) views DSL not as a head feature (as I do here), but rather as a NONLOC-feature. His head trace has the following form, which is parallel to the extraction trace:

(24) Head trace (Kiss 1995a: 72):

$$\left[\text{SYNSEM} \left[\begin{array}{l} \text{LOC } \boxed{1} \\ \text{NONLOC|INHER|DSL } \left\{ \boxed{1} \right\} \end{array} \right] \right]$$

Kiss uses the same percolation mechanism for head movement as for extraction, namely percolation via NONLOC|INHER.

The lexical rule which licenses the verb in initial position is represented as follows:¹⁶

¹⁶I have omitted a superfluous structure sharing between the HEAD value in the input of the rule and the HEAD value of the element in SUBCAT. The respective restrictions follow on from the specification of the trace.

$$\begin{array}{l}
 (25) \quad \left[\text{SYNSEM} | \text{LOC } \boxed{3} \left[\text{CAT} | \text{HEAD } \boxed{1} \left[\text{VFORM } \textit{fin} \right] \right] \right] \mapsto \\
 \left[\begin{array}{c} \text{SYNSEM} \\ \text{LOC} \left[\begin{array}{c} \text{CAT} \left[\begin{array}{c} \text{HEAD } \boxed{1} \\ \text{SUBCAT} \left\langle \begin{array}{c} \text{LOC} \left[\begin{array}{c} \text{CAT} | \text{SUBCAT } \langle \rangle \\ \text{CONT } \boxed{2} \end{array} \right] \\ \text{NL} | \text{INHER} | \text{DSL } \{ \boxed{3} \} \end{array} \right\rangle \end{array} \right] \\ \text{CONT } \boxed{2} \end{array} \right] \\ \text{NL} \left[\text{TO-BIND} | \text{DSL } \{ \boxed{3} \} \right] \end{array} \right] \end{array}
 \end{array}$$

Frank (1994a) has criticized Kiss' analysis as it does not predict the locality restrictions of head movement.¹⁷ Without further assumptions, a sentence such as (26a) would be predicted to be grammatical:

- (26) a. *Kennt_i Peter glaubt, dass Fritz Maria _{-i}?
 knows Peter believes that Fritz Maria
 b. Glaub_i Peter _{-i}, dass Fritz Maria kennt?
 believes Peter that Fritz Maria knows

In the incorrect analysis of (26a), the lexical rule (25) is applied to *kennt*. It is however not ensured that the element in DSL that is bound off by *kennt* ($\boxed{3}$ in (25)) is the head of the verbal projection that is selected by *kennen* 'to know'. In the analysis of the well-formed (26b) *glaubt* is combined with *Peter* _{-i}, *dass Fritz Maria kennt* and the verb trace _{-i} is in the same local domain as the verb *glaubt*: _{-i} is the head of the clause that is combined with *glaubt*; it is the head of both *Peter* and *dass Fritz Maria kennt*. In the analysis of (26a) the information about the verb trace crosses a clause boundary. There is nothing that prevents the percolation of DSL information from a more deeply embedded clause.

Frank has developed an analysis which creates a finer-grained distinction between functional and lexical elements and suggests therefore the following solution for the locality issue: the semantic content of the input for a lexical rule

¹⁷For further discussion see Kiss (1995b: 231–234). Kiss proposes the exclusion of sentences such as (26) by stating that complementizers always require that embedded sentences have an empty list as the value NL|INHER|DSL. It is assumed in Batliner et al. (1996) that DSL is a NONLOC feature, but that it is projected along a head path only.

is identified with the semantic content in the output of the lexical rule. When applied to Kiss' analysis, it would look like this:

$$(27) \left[\begin{array}{l} \text{SYNSEM|LOC } \boxed{3} \left[\begin{array}{l} \text{CAT|HEAD } \boxed{1} \left[\text{VFORM } \textit{fin} \right] \\ \text{CONT } \boxed{2} \end{array} \right] \end{array} \right] \mapsto$$

$$\left[\begin{array}{l} \text{SYNSEM} \left[\begin{array}{l} \text{LOC} \left[\begin{array}{l} \text{CAT} \left[\begin{array}{l} \text{HEAD } \boxed{1} \\ \text{SUBCAT} \left\langle \begin{array}{l} \text{LOC} \left[\begin{array}{l} \text{CAT|SUBCAT } \langle \rangle \\ \text{CONT } \boxed{2} \end{array} \right] \\ \text{NL|INHER|DSL } \{ \boxed{3} \} \end{array} \right] \end{array} \right] \end{array} \right] \\ \text{CONT } \boxed{2} \end{array} \right] \\ \text{NL} \left[\text{TO-BIND|DSL } \{ \boxed{3} \} \right] \end{array} \right] \end{array} \right]$$

This analysis fails, however, as soon as we have to deal with adjuncts. These are combined with the verb trace and the CONT value of the verb trace projection is therefore no longer identical to the the CONT value contained in DSL. See Figure 2.8 for the exact representation of this.

The most simple solution to restrict verb movement to head domains is to make the corresponding information a head feature, and for this reason only available along the head projection. Oliva (1992a) and Frank (1994a,b) have suggested representing valence information under HEAD and accessing this information inside the verb trace. As shown in Section 2.2.2, valence information alone is not enough to model verb movement correctly and we should therefore, as Kiss (1995a) suggests, assume that all local information, i.e. semantic content as well as syntactic information, percolates.

Furthermore, placing the head movement information inside of LOCAL features is necessary for the analysis of cases of supposed multiple fronting as a verb trace is present in initial position in such cases, i.e., the verb trace is part of a filler in a long-distance dependency. A DSL value which is percolated inside of NONLOC in the constituent in initial position could not be checked at the extraction site since only the features under LOCAL are shared by the extraction trace and filler.

6.6 V1 via argument composition

Jacobs (1991), working in Categorical Grammar, and Netter (1992), working in HPSG, suggest an analysis in which an empty head selects for the arguments of the verb and the verb itself. This analysis is basically using the technique of argument composition that is also used for the analysis of verbal complexes in German (see Section 2.2.4). The analysis of the example sentence in (28) is shown in Figure 6.10.

- (28) Isst er ihn?
 eats he him
 ‘Does he eat it/him.’

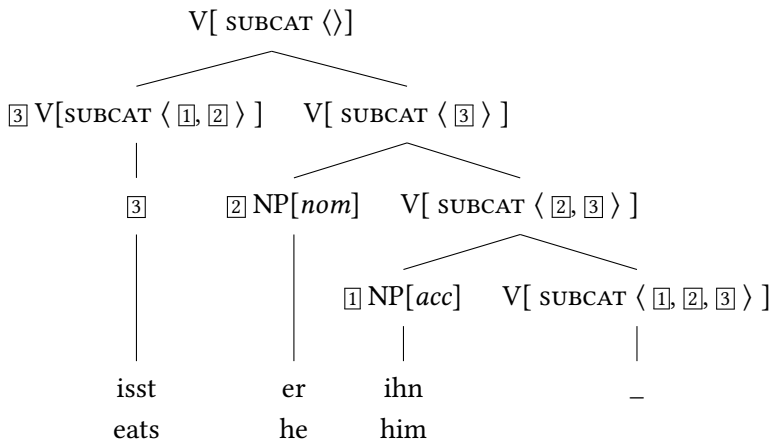


Figure 6.10: Analysis of verb-initial sentences according to Jacobs and Netter

The trace is the head in the entire analysis: it is first combined with the accusative object and then with the subject. In a final step, it is combined with the transitive verb in initial-position. A problem with this kind of analysis is that the verb *isst* ‘eats’, as well as *er* ‘he’ and *ihn* ‘him’/‘it’, are arguments of the verb trace in (29).

- (29) Morgen [isst [er [ihn _]]]
 tomorrow eats he him
 ‘He will eat it/him tomorrow.’

Since adjuncts can occur before, after or between arguments of the verb in German, one would expect that *morgen* ‘tomorrow’ can occur before the verb *isst*,

since *isst* is just a normal argument of the verbal trace in final position. As adjuncts do not change the categorial status of a projection, the phrase *morgen isst er ihn* ‘tomorrow he eats him’ should be able to occur in the same positions as *isst er ihn*. This is not the case, however. If we replace *isst er ihn* by *morgen isst er ihn* in (30a) the result is (30b), which is ungrammatical.

- (30) a. Deshalb isst er ihn.
 therefore eats he him
 ‘Therefore he eats it/him.’
 b. *Deshalb morgen isst er ihn.
 therefore tomorrow eats he him

If one compares the analysis in Figure 6.10 with the one suggested in this book it is clear how this problem can be avoided: in the analysis suggested in Section 2.2.2, the verb in initial position is the head that selects for a projection of the empty verb in final position. Since adjuncts attach to head-final verbs only, they cannot attach to *isst er ihn* ‘eats he him’ in a normal head-adjunct structure. The only way for an adjunct to be combined with *isst er ihn* is as a filler in a V2 structure.

6.7 V1 as underspecification

Frank (1994a) has suggested to eliminate the lexical rule for verb-placement and instead use underspecification and model both order variants in the type system. The advantage of this would be that one would not have to claim that one order is more basic and the other one is derived from it. Frank’s starting point is a version of the V1 lexical rule as it was developed by Tibor Kiss in his dissertation (Kiss 1993: 144). This version is given in (31):

$$(31) \left[\begin{array}{c} \text{LOC } [3] \\ \text{CAT} \left[\begin{array}{c} \text{HEAD } [1] \text{ [VFORM } \textit{fin}] \\ \text{CONT } [2] \end{array} \right] \end{array} \right] \mapsto \left[\begin{array}{c} \text{LOC} \left[\begin{array}{c} \text{CAT} \left[\begin{array}{c} \text{HEAD } [1] \\ \text{SUBCAT} \left\langle \left[\begin{array}{c} \text{LOC|CAT|HEAD } [1] \\ \text{NONLOC|INHER|DSL } \{ [3] \} \end{array} \right] \right\rangle \end{array} \right] \\ \text{CONT } [2] \end{array} \right] \\ \text{NONLOC|TO-BIND|DSL } \{ [3] \} \end{array} \right]$$

Frank develops a type hierarchy in which there is a general type that both subsumes lexical verbs as they are used in verb-final sentences and lexical verbs as they would be used in verb-initial sentences. That is the result of the lexical rule application is encoded as a type. The lexical entries for verbs would contain an underspecified description and since all feature structures in actual models have to be maximal, it is ensured that actual instantiations of the lexical entries in the lexicon are either verb-initial or verb-final verbs. (32) shows the two AVMs that result if information from the subtypes is filled in.

$$(32) \text{ a. LOCAL value of the verb-final version of } \textit{kennen} \text{ 'to know':} \\
\left[\begin{array}{c} \text{CAT} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \textit{verb} \\ \text{VFORM } \textit{fin} \\ \text{SUBCAT} \left\langle [1] \text{ NP}[\textit{nom}]_{[2]}, [3] \text{ NP}[\textit{acc}]_{[4]} \right\rangle \end{array} \right] \\ \text{SUBJ } \langle [1] \rangle \\ \text{COMPS } \langle [3] \rangle \end{array} \right] \\ \text{CONT} \left[\begin{array}{c} \textit{kennen} \\ \text{ARG1 } [2] \\ \text{ARG2 } [4] \end{array} \right] \end{array} \right]$$

b. LOCAL value of verb-initial version of *kennen*:

CAT	HEAD	[3]	$\left[\begin{array}{l} \text{verb} \\ \text{VFORM } fin \\ \text{SUBCAT } \langle [1] \text{ NP}[nom]_{[2]}, [3] \text{ NP}[acc]_{[4]} \rangle \end{array} \right]$
	SUBJ	[<]	
	COMPS	[<]	$\left[\begin{array}{l} \text{LOC CAT HEAD } [1] \\ \text{NONLOC INHER DSL } \{ \dots \} \end{array} \right]$
CONT			<i>kennen</i>
	ARG1	[2]	
	ARG2	[4]	

The DSL value is not given in (32b) since it is identical to (32a). Frank assumes that there is a separate head feature SUBCAT, which contains all arguments. Such a feature is also used in more recent versions of HPSG, but it is called ARG-ST and it is usually not a head feature.

Now, the problem with this approach, as with Kiss' original formalization of the lexical rule is that the CONT value that is contributed by the projection of the verb trace may differ from the contribution of the verb (compare the analysis in Figure 2.8 on page 32). This means that the semantics of the verb in initial position has to be taken over from the element that is selected via COMPS. This leaves us in the rather unpleasant state that the argument-linking cannot be stated at a common supertype, since the CONT value of (32a) is different from the CONT value of (32b).

It may be possible to rescue this analysis if one assumes a sort of default inheritance which allows overwriting information in subtypes (Lascarides & Copestake 1999). These kinds of defaults are however not compatible with all assumptions about the formal principles of HPSG and in the case at hand, it would lead to a "misuse" anyway, as we want to express that there are always two different CONT values, which means that we are not dealing with one general case which does not hold true for certain exceptions.

Another possibility to rescue the underspecification analysis comes in the form of the introduction of a feature CONT2 for general types. The linking would be done with respect to the CONT2 value. The verb-final type would have a CONT value identical to CONT2. The CONT value of the verb-initial type would be independent of the CONT2 value and hence conflicts would be avoided.

Frank (1994b) discusses the problem that adjuncts pose and notes that the ad-

junct problem is not shared by approaches that assume an underspecified semantics and a modified Semantics Principle which does not project the meaning of the mother node from the daughter of the head, but rather combines lists with the semantic contribution of all daughters (Frank uses Underspecified DRS (Frank & Reyle 1995), but using MRS as suggested in the previous Chapter would be an alternative option). The adjunct problem does not arise because the semantic content of adjuncts is included in the VP, which is in turn combined with the verb in first position. The verb in initial position contributes the meaning encoded in the lexicon. For this to work, the actual relation that is contributed by the verb has to be represented outside of the *CONT* value that is shared with the projection of the verbal trace and it has to be ensured that only the event variable is shared.

All these solutions fail however when one considers the coordination data discussed in footnote 14, which is repeated here for convenience:

- (33) Karl kennt und schätzt diesen Mann.
 Karl knows and values this man
 ‘Karl knows and values this man.’

The example shows that it is not sufficient to develop accounts that explain the placement of single verbs in initial position. To assume that (33) is analyzed involving the coordination of V1 versions of lexical items like (32b) is not appropriate, since the semantics of the initial verb has to be connected to the semantics of the verb trace. In the original proposals the complete semantic representation of the verb was shared with the trace, in approaches with underspecified semantics it would be an event variable that is shared. If V1 versions of *kennt* and *schätzt* would be coordinated in the analysis of (33), the event variables of the two verbs would be wrongly identified. What is needed instead is an event variable that refers to the conjoined event that includes both the *kennen* and the *schätzen* event. This event variable is then present at the verb trace and adjuncts can refer to it.

So either single verbs or arbitrarily complex coordinations of single verbs can be placed in initial position. As was explained in the footnote referenced above, this can be captured by a unary projection that relates single verbs or coordinations of single verbs to the properties that are required for elements in initial position. If one uses a single underspecified type for the description of lexical verbs that are supposed to be used either in initial or in final position, this will never extend to complex coordinations as the one in (33).

6.8 A little bit of movement

In Müller (1999: Chapter 11.5.2) and Müller (2004c), I suggested that systematic bottom-up processing is rather costly for grammars with empty verb heads due to the fact that any number of phrases can be combined with empty verb heads. This follows from the fact that the valence and semantic content of the verb trace remains unknown up to the point where its projection is combined with the verb in initial position. Berthold Crysmann took the grammar I developed as part of the *Verbmobil*-project (Müller & Kasper 2000) and modified it to improve it from a processing perspective (Crysmann 2003). Furthermore, he removed the unary-branching grammatical rules which mimic the verb trace (see Chapter 7) and – rather than for an analysis with uniform right-branching – opted for a left-branching analysis when the right verbal bracket is empty, and a right-branching one when the right bracket is occupied. The sentences in (34) would have structures with different directions of branching:

- (34) a. [[[Gibt er] dem Mann] das Buch]?
 gives he the man the book
 ‘Is he going to give the man the book?’
 b. [Hat [er [dem Mann [das Buch gegeben]]]]?
 has he the man the book given
 ‘Has he given the man the book?’

In this sense, there is verb movement in Crysmann’s analysis when there is a verbal complex in the sentence. There is no verb movement, however, if the right verbal bracket is not filled. For similar suggestions, see Kiss & Wesche (1991: 225) and Schmidt, Rieder & Theofilidis (1996). This avoids the processing problems that an empty verb head brings with it, but then we are no longer able to explain the cases of supposed multiple fronting by means of an empty verb head.

Instead of modifying the analysis of verb position, one should, for practical applications, turn to statistical components which predict the position of verb traces (Batliner et al. 1996; Frank et al. 2003). If one processes the traces according to their probability, one gets first readings quickly and dispreferred readings later. The structures which use traces classified as ‘improbable’ by the statistical component will be computed last.¹⁸

¹⁸Berthold Crysmann has pointed out that the changes to the grammar he proposed have reduced the running time by a factor of 14, whereas the techniques described in Batliner et al. (1996) only resulted in a reduction of 46 % (less than a factor of 2) for the grammar they were using. However, the grammar that was used for the experiments done by Batliner et al. (1996)

Crysmann argues that his analysis “leads to a more general grammar, if the formalism does not support empty categories.” He reduced the number of grammar rules which were needed for the implementation of the LKB-system (Copestake2002a-unlink) for verb movement (see Section 7.2) from 24 to 6. The 24 rules were needed in the grammar for the exact reasons that empty elements were not allowed. The decision to outlaw empty elements is, in that sense, a conscious decision on the part of the developer of the system and is not necessarily driven by linguistic or computational necessities. As the implementation of the analysis that is described here in the TRALE system (Meurers, Penn & Richter 2002; Penn 2004) demonstrates,¹⁹ it is most certainly possible to use an empty head in the implementation of the verb-movement analysis that was developed in *Verbmobil*.

In order to describe verb movement, one empty element is required and one lexical rule. This kind of grammar is therefore more compact than that of Crysmann, who needs six rules to achieve this. Processing is unproblematic as empty elements are automatically removed from the grammar before parsing while still remaining transparent for the developer of the grammar. The result of the compilation of the grammar is identical to what developers who use grammar development systems such as the LKB system had to produce tediously by hand. For more on empty elements, see Chapter 7.

6.9 Special valence features for arguments forming a complex

A special valence feature (Gov) has been suggested by Chung (1993) for Korean and Rentier (1994) for Dutch which is used for the selection of elements which form a verbal complex with their head. This approach was adopted by Kathol (1998; 2000) and Müller (1997; 1999) for German. In Müller (2002a), I expanded my earlier analysis to include resultative constructions and subject and object predicatives of the *jemanden für etwas/jemanden halten* ‘consider somebody for

had a smaller coverage than grammars like the one that was developed in Saarbrücken by me, Walter Kasper and Berthold Crysmann and BerliGram, which is used in the CoreGram project. Therefore the use of a statistical component that was described by Batliner and colleagues probably would result in an even higher factor in the reduction of the run time. However, this would have to be studied experimentally. It seems unlikely though that a factor of 14 will be reached.

It could then be the case that one still gets an overall slower system despite the application of the processing methods above than if one had modified the grammar.

¹⁹The grammar is freely available at <http://hpsg.fu-berlin.de/Fragments/b-ger-gram.html>.

somebody/something' kind. Embedded predicates are also seen as being selected by a special valence feature (vCOMP) in this analysis.

The theory suggested here does not require this kind of additional feature. This has the advantage that optional coherence can be analyzed as a special case of coherence as suggested by Kiss (1995a). We only need one lexical entry for verbs such as *versprechen* 'to promise' rather than two, which would be needed for both coherent and incoherent constructions.

By reducing the number of valence features, it is possible to considerably simplify the analysis of multiple fronting. In Müller (2005b), I suggest a lexical rule for sentences such as (7) on page 3, which is parallel to the verb-movement rule in (36) on page 31. Previous multiple fronting analyses of mine (Müller 2002b,c) have made use of the special valence feature vCOMP and this was the reason why the parallels of both of these verb-movement rules remained hidden. With the feature geometry used here, cases of putative multiple fronting can be understood as an optional variant of simple verb movement, which forms a complex. The details of the analysis are discussed in Chapter 3.

6.10 Structure deletion

G. Müller (2018) deals with complex prefields and aims to develop an analysis that can deal with phenomena that are subsumed under the term of *freezing* in Mainstream Generative Grammar²⁰. The claim is that constituents may not move out of constituents that have been moved (Ross 1967). G. Müller illustrates the phenomenon with reference to the example in (35):

- (35) * Was₁ denkst du [_{VP} t₁ gelesen] hat keiner t₂?
 what think you read has no.one
 Intended: 'What do you think nobody has read?'

A verb phrase like *das Buch gelesen* 'the book read' can be moved resulting in (36):

- (36) Das Buch gelesen hat keiner.
 the book read has no.one
 'Nobody read the book.'

But extraction of the object out of the fronted phrase is impossible as (35) shows. I have discussed some cases of freezing in Section 2.2.3: In HPSG, the extraction

²⁰I follow Culicover & Jackendoff (2005: 3) in using the term *Mainstream Generative Grammar* (MGG) to refer to work in Government & Binding or Minimalism.

out of extracted elements can be blocked by requiring the filler daughter to have an empty SLASH list. Note that the general claim that things that are moved are islands is not correct. Ross discussed examples with extraction out of extraposed PPs and theses are indeed marked. But German allows extraction out of extraposed infinitival clauses and these are perfectly fine:

- (37) a. [Über dieses Thema]_i [_S hatte Fritz Peter _{-j} gebeten], [[einen Vortrag _{-i}] zu halten]_j.²¹
- b. Anrufbeantworter dienen längst nicht mehr dazu, wichtige Nachrichten aufzuzeichnen, wenn man gerade mal nicht da ist, oder sich denen zu verweigern, [mit denen]_i man [keine Lust _{-j}] hat [_{-i} zu sprechen]_j.²²
- c. Es ist eine juristische Zwickmühle, [aus der]_i Clinton nur [eine kleine Chance _{-j}] hat [_{-i} herauszukommen]_j.²³

In comparison to HPSG, many more phenomena involve movement in MGG. For example, some theories assume that the subject is licensed as part of the VP and then moves to the specifier of IP (for instance to get case or to agree with the finite verb). These approaches predict that subjects are extraction islands (Corver 2017: 12), which is a wrong prediction. Huddleston et al. (2002: 1094) provide the following example:

- (38) The eight dancers and their caller, Laurie Schmidt, make up the Farmall Promenade of nearby Nemaha, a town that [[to describe _as tiny] would be to overstate its size].²⁴

Chaves (2013) provides further examples of extractions out of subjects.

G. Müller (2018) discusses the examples in (39). The first example is probably an attested example (no source given but it is stated on p.105 that some examples are from German sports broadcasts). The third example is claimed to be grammatical and the second one ungrammatical. The difference between these two examples is that (39c) contains the participle *gratuliert* ‘congratulated’ in the prefield while (39b) just has a verb trace there.

- (39) a. [_{CP} [_{DP₁} Dem Team] [_{PP₂} zum Erfolg] [_{C'} gratulierte Bernard
the.DAT team to.the success congratulated Bernard

²¹(Hinrichs & Nakazawa 1989: 21)

²²taz, 29.05.1995, p. 20, „Anrufbeantworter als Visitenkarten“

²³Spiegel, 32/1998, p. 101

²⁴(Huddleston et al. 2002: 1094)

- Hinault]]
Hinault.NOM
- b. * [CP Da₃ [DP₁ dem Team] [PP₂ t₃ zu] [C' gratulierte Bernard
there the.DAT team to congratulated Bernard
Hinault]]
Hinault.NOM
- c. [CP Da₃ [DP₁ dem Team] [PP₂ t₃ zu] gratuliert [C' hat
there the.DAT team to congratulated has
Bernard Hinault]]
Bernard Hinault.NOM

G. Müller wants to explain the ungrammaticality of (39b) as a freezing effect, but if *da dem Team zu* is one phrase with an empty head one would expect that it behaves like (39c) since it is structurally parallel. Müller concludes that additional mechanisms are needed and I will discuss these additional mechanism below. Before doing so, I want to say that preposition stranding as in (39b–c) does occur in German but it is special. Multiple fronting does occur in German but I never saw a combination of the two phenomena so far. This does not mean that these constructions are impossible, but it does mean that we have to be very careful what kind of conclusions we draw from such examples. As for (39c) I do not share Müller's judgment that (39c) is completely unmarked. If Müller wants to challenge existing analyses it would be his job to get the empirical base right (and the job of reviewers to point this out to the author in a reviewing process).

For the sake of the argument, let us assume that the judgments are correct. Given that freezing does not hold up to scrutiny, freezing cannot be an explanation of the differences in (39). Of course one could state that movement is ruled out in the configurations in (39) but this would be mere stipulation.

7 Empty elements

In some frameworks there is a dogma that empty elements should not be used in analyses. The argument is that they are invisible and hence cannot be acquired from the input. I think this argumentation is not correct in general since some empty elements correspond to visible entities and hence the knowledge that is required to deal with such omissions can be acquired. I distinguish between good and bad empty elements: the good ones are the ones that correspond to visible entities in the language under considerations and the bad ones are those that are semantically empty or that are motivated by overt items in other languages. Empty expletives are suggested in GB and Minimalism and empty functional heads like AgrO and other categories have been suggested for German on the basis of evidence from Basque. I think for the latter examples the criticism by proponents of Construction Grammar is fully legitimate, but I want to argue that this criticism went too far in throwing out the good empty elements with the bath water.

In this chapter, I want to discuss the relation of grammars with empty elements to those without empty elements. This will enable us to compare the solution with an empty verb head to solutions without empty elements.

7.1 Empty elements in the German NP

I want to start with a simple example and motivate the use of empty elements in the German noun phrase. Consider the following nominal structures:

- (1) a. die Frauen
the women
- b. die klugen Frauen
the smart women
- c. die klugen Frauen aus Greifswald
the smart women from Greifswald
- d. Frauen
women

7 Empty elements

- e. kluge Frauen
smart women
- f. die klugen
the smart
'the smart ones'
- g. die klugen aus Greifswald
the smart from Greifswald
'the smart ones from Greifswald'
- h. kluge aus Greifswald
smart from Greifswald
'smart ones from Greifswald'
- i. kluge
smart
'smart ones'

As in English, the determiner may be omitted in the plural and with mass nouns. In addition, the noun may be omitted in elliptical structures:

- (2) a. Ich kenne die klugen.
I know the smart
'I know the smart ones.'
- b. Ich kenne kluge aus Greifswald.
I know smart from Greifswald
'I know smart ones from Greifswald.'
- c. Ich kenne kluge.
I know smart
'I know smart ones.'

I think that the description I just gave, namely that the noun or the determiner or both may be omitted is the most straightforward description of the phenomenon. This is what children have to acquire. Of course the omitted elements do have a meaning. The noun may only be omitted, if the whole nominal expression refers to something/somebody. If one uses the phrase *kluge aus Greifswald* 'smart from Greifswald', women, man or children or something else that can be smart have to be mentioned in the preceeding discourse. Formally this can be represented in the following small grammar:¹

¹The grammar predicts that all bare determiners can function as full NPs, which is not empirically correct:

- (3) NP \rightarrow Det \bar{N}
 \bar{N} \rightarrow Adj \bar{N}
 \bar{N} \rightarrow \bar{N} PP
 \bar{N} \rightarrow _
 Det \rightarrow _
 Det \rightarrow die
 Adj \rightarrow klugen
 \bar{N} \rightarrow Frauen

\bar{N} is an abbreviation for nouns that require a determiner and the rules $\bar{N} \rightarrow _$ and $\text{Det} \rightarrow _$ state that \bar{N} and Det may be omitted. The grammar is not complete. Lexical entries and rules for the PP are missing. Furthermore, the grammar is not precise enough since all inflectional information is left out. But it is sufficient for the discussion of the advantages of empty elements. To facilitate discussion, let me introduce terminology: a rule describes which symbols can be rewritten by other symbols. Some symbols are considered as special in the sense that they are never rewritten by other symbols. They end the replacement process and are therefore called *terminal symbols*. These are the words in the grammar in (3) and the empty element $_$. All other symbols are so-called *non-terminal symbols*. The rules in (3) that have a terminal symbol on the right-hand side are basically lexical entries: they specify the category symbol for a specific word. The other rules are grammar rules that combine two non-terminals. There are two grammar rules in (3) and four lexical items.

The grammar licenses for instance the structures in Figure 7.1. Bar-Hillel, Perles & Shamir (1961: 153, Lemma 4.1) developed a procedure to transform grammars that use empty elements into grammars without empty elements. To that end one has to compute all symbols from which the empty word can be derived. These symbols can then be inserted into the right-hand sides of rules resulting in new rules. The grammar that one obtains by such replacements is a grammar without empty elements. For the grammar in (3) one gets:²

-
- (i) a. Ich helfe den Männern.
 I help the men
 b. *Ich helfe den.
 I help the
 c. Ich helfe denen.
 I help those

²In principle the grammar in (3) allows for completely empty NPs. This has to be blocked by features in the grammar (Müller 2016: 81, Exercise 3).

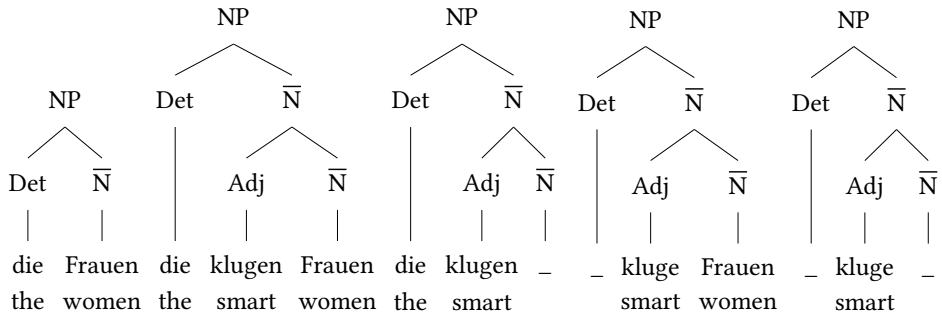


Figure 7.1: Various nominal structures

- (4) $NP \rightarrow Det \bar{N}$
 $NP \rightarrow Det$
 $NP \rightarrow \bar{N}$
 $\bar{N} \rightarrow Adj \bar{N}$
 $\bar{N} \rightarrow Adj$
 $\bar{N} \rightarrow \bar{N} PP$
 $\bar{N} \rightarrow PP$
 $Det \rightarrow die$
 $Adj \rightarrow klugen$
 $\bar{N} \rightarrow Frauen$

The rule $\bar{N} \rightarrow _$ from (3) can be used to derive the empty word. The \bar{N} was inserted into the rule $NP \rightarrow Det \bar{N}$ in (3) and the rule $NP \rightarrow Det$ in (4) resulted.

The grammar in (4) licenses among others the structures in Figure 7.2. The

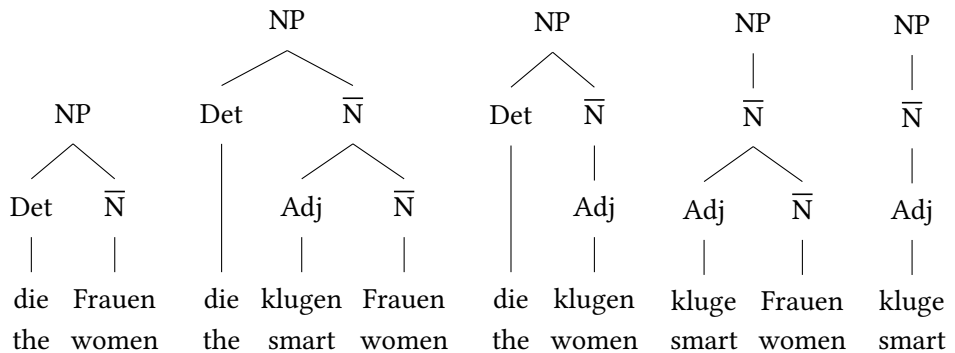


Figure 7.2: Verschiedene Nominalstrukturen ohne leere Elemente

branches with empty elements were simply omitted. Comparing the two grammars it can be noted that the grammar without empty elements contains more rules. It contains seven rules without terminals, whereas the one with empty elements contains only three such rules. Even if one includes the rules for lexical items in the counting and hence takes into account the lexical items for different empty elements, one gets a proportion of nine to seven. In the end the grammar with empty elements is a more compact description of the phenomenon and it covers directly what has to be acquired: the noun and the determiner can be left unpronounced under certain circumstances.

Several attempts were made to account for noun phrases without empty elements. For instance Michaelis (2006: 78) suggested a special lexical rule for nouns in the plural. The plural items that are licensed by this lexical rule differ from other lexical items for nouns in not selecting for a determiner. Thus one would have two lexical items for *Frauen* ‘women’: one of category \bar{N} and one of category NP. The problem is that *Frauen* ‘women’ can be modified by *kluge* ‘smart’ (1e) even when no determiner is present. If one admits adjectives to modify NPs, phrases like (5) cannot be excluded any longer:³

- (5) * kluge die Frauen
 smart the women

7.2 Empty elements for verb movement

To demonstrate more clearly what the consequences of trace elimination are, I want to discuss a transformation of the grammar that I suggest in this book for the German sentence structure: a grammar that uses a trace for extraction and trace for verb movement. Kathol (2000: p. 92) argues against head movement approaches for the verb position, claiming that traceless accounts are not possible. However, this is not correct as the following transformation of (6) into (7) shows:

- (6) $\bar{v} \rightarrow np, v$
 $v \rightarrow \epsilon$
- (7) $\bar{v} \rightarrow np, v$
 $\bar{v} \rightarrow np$

Instead of using a verb trace as in (7) one can fold it into the rule. If we assume binary branching structures for head-argument combination, head-adjunct combination and head-cluster combination, such a trace elimination results in three

³See also Sag, Wasow & Bender (2003: 265, Problem 2).

new schemata in which no head daughter is present since it was removed due to the elimination of the verbal trace.

Eliminating extraction traces from a phrase structure grammar works parallel to the elimination of verb traces in (7). For the grammar in (8) we get (9):

$$(8) \quad \bar{v} \rightarrow np, v \\ np \rightarrow \epsilon$$

$$(9) \quad \bar{v} \rightarrow np, v \\ \bar{v} \rightarrow v$$

In our HPSG grammar we get three new schemata since arguments, adjuncts, and parts of the predicate complex can be extracted. In the extraction case, the non-head-daughter is removed from the rule. The sentences in (10) are examples in the analysis of which these six rules will be needed:

- (10) a. Er_i liest_j t_i ihn t_j .
 he reads him
 ‘He reads it.’
 b. Oft_i liest_j er ihn t_i nicht t_j .
 often reads he him not
 ‘He does not read it often.’
 c. $Lesen_i$ wird_j er es t_i müssen t_j .
 read will he it must
 ‘He will have to read it.’

t_j is the verb trace and t_i is an extraction trace. In (10a) the verb trace forms a constituent with an argument, in (10b) with an adjunct and in (10c) with *müssen*, which is a part of the predicate complex. For these cases we need the first three rules. The second set of rules is needed for the combination with extraction traces of respective types: In (10a) the extracted element is an argument, in (10b) it is an adjunct, and in (10c) it is a part of the predicate complex.

If we look at grammars containing two traces we get the following situation:

$$(11) \quad \bar{v} \rightarrow np, v \\ v \rightarrow \epsilon \\ np \rightarrow \epsilon$$

The categories that can be rewritten as ϵ are v and np but also \bar{v} since both elements on the right-hand side of the first rule can be rewritten as ϵ . If we omit all those categories from right-hand sides that can be rewritten to ϵ , we get the following rules:

- (12) $\bar{v} \rightarrow np, v$
 $\bar{v} \rightarrow np$
 $\bar{v} \rightarrow v$

Due to the elimination of the extraction trace in (11), we get the rule $\bar{v} \rightarrow v$ and the elimination of the verbal trace results in $\bar{v} \rightarrow np$.

For our HPSG grammar this means that we get nine new grammar rules: we have three new empty elements that arise when a verb movement trace is directly combined with an extraction trace. Since the extraction trace can be the non-head daughter in the head-argument structure (13a), head-adjunct structure (13b) or head-cluster structure (13c):

- (13) a. Er_i [schläft_j t_i t_j].
 he sleeps
 ‘He sleeps.’
 b. $Jetzt_i$ [schlaf_j t_i t_j]!
 now sleep
 ‘Sleep now!’
 c. $Geschlafen_i$ [wird_j t_i t_j]!
 slept is
 ‘Sleep!’

Due to these new three traces we need three additional rules where each of the new traces is folded into the rule instead of the argument daughter in the head-argument schema.

For the examples in (14) and (15) we need six new rules, since the trace combinations can function as heads in head-argument structures (14) and in head-adjunct structures (15):

- (14) a. $Den\ Aufsatz_i$ liest_j [er t_i t_j].
 the paper reads he
 b. Oft_i liest_j er [ihn t_i t_j].
 often reads he it
 ‘He reads it often.’
 c. $Lesen_i$ wird_j er [ihn t_i t_j].
 read will he it
 ‘He will read it.’

- (15) a. Den Aufsatz_i liest_j er [nicht t_i t_j].
 the paper reads he not
 ‘He does not read the paper.’
 b. Oft_i liest_j er ihn [nicht t_i t_j].
 often reads he it not
 ‘He does not read it often.’
 c. Lesen_i wird_j er ihn [nicht t_i t_j].
 read will he it not

I applied this technique of epsilon elimination to the HPSG grammar that was developed for the *Verbmobil* system (Müller & Kasper 2000), but there are processing systems, like *Trale* (Meurers, Penn & Richter 2002), that do such grammar conversion automatically (Penn 1999). The grammar in (11) and the corresponding HPSG equivalent directly encode the claim that the np and v can be omitted, while this information is only implicitly contained in the rules we get from specifying an epsilon free grammar by hand. The same would be true for a grammar that accounts for copulaless sentences by stipulating several constructions for questions and declarative sentences with a missing finite verb.

Using grammar transformations to get epsilon-free linguistic descriptions can yield rather complicated rules that do not capture the facts in an insightful way. This is especially true in cases where two or more empty elements are eliminated by grammar transformation. While this is not a problem for computational algorithms that deal with formally specified grammars, it is a problem for linguistic specifications. For more discussion see Müller (2002a: Chapter 6.2.5.1; 2005a; 2004d; 2016: Chapter 19).

7.3 Conclusion

This brief chapter showed that sometimes grammars that use empty elements can capture insights more directly than grammars from which the empty elements were eliminated.

8 Conclusion

The discussion in Chapter 6 showed that approaches that rely on surface patterns only have problems with accounting for the data in German. First there are elliptical sentences (Topic Drop), in which the *Vorfeld* is not filled and which are main declarative clauses nevertheless. Second there is the big problem of apparently multiple frontings which runs afoul the V2 property of German. I suggested using an empty head that is related to a verb in the remainder of the sentence. This captures the fact that the elements in the *Vorfeld* have to depend on the same head and preserves the generalization that German is a V2 language. I showed in Chapter 7 that grammars with empty elements may be more compact and capture the insights more directly than grammars without empty elements.

The theory that is represented in this book is implemented in the TRALE system (Meurers, Penn & Richter 2002; Penn 2004). The grammar was developed in 2003 and is now part of the grammar that is maintained in the CoreGram project (Müller 2013c; 2015b). It can be downloaded at <http://hpsg.fu-berlin.de/Fragments/Berligram/> and is also distributed with the Grammix Virtual Machine (Müller 2007b). For a list of positive and negative example sentences see Appendix A.

Appendix A: List of phrases covered/ rejected by the grammar

Verb last order

- (1) dass der Mann der Frau das Buch gibt
that the man the woman the book gives
'that the man gives the woman the book'

Verb initial order

- (2) Gibt der Mann der Frau das Buch?
gives the man the woman the book
'Does the man give the woman the book?'

Scrambling

- (3) dass der Mann das Buch der Frau gibt
that the man the book the woman gives
'that the man gives the woman the book'
- (4) dass das Buch der Mann der Frau gibt
that the book the man the woman gives
'that the man gives the woman the book'
- (5) dass das Buch der Frau der Mann gibt
that the book the woman the man gives
'that the man gives the woman the book'
- (6) dass der Frau der Mann das Buch gibt
that the woman the man the book gives
'that the man gives the woman the book'

A List of phrases covered/rejected by the grammar

- (7) dass der Frau das Buch der Mann gibt
that the woman the book the man gives
'that the man gives the woman the book'

Adjunct position

- (8) dass jetzt der Mann das Buch der Frau gibt
that now the man the book the woman gives
'that the man gives the woman the book now'
- (9) dass der Mann jetzt das Buch der Frau gibt
that the man now the book the woman gives
'that the man gives the woman the book now'
- (10) dass der Mann das Buch jetzt der Frau gibt
that the man the book now the woman gives
'that the man gives the woman the book now'
- (11) dass der Mann das Buch der Frau jetzt gibt
that the man the book the woman now gives
'that the man gives the woman the book now'

V2

- (12) Der Mann gibt der Frau das Buch.
the man gives the woman the book
'The man gives the woman the book.'
- (13) Der Frau gibt der Mann das Buch.
the woman gives the man the book
'The man gives the woman the book.'
- (14) Das Buch gibt der Mann der Frau.
the book gives the man the woman
'The man gives the woman the book.'
- (15) Jetzt gibt der Mann der Frau das Buch.
now gives the man the woman the book
'The man gives the woman the book now.'

V2 + scope

- (16) Oft liest er das Buch nicht.
often reads he the book not
'It is often that he does not read the book. or It is not the case that he reads the book often.'

Verbal complex

- (17) dass er das Buch wird lesen müssen
that he the book will read must
'that he will be obliged to read the book'
- (18) dass es ihm ein Mann zu lesen versprochen hat
that it him a man to read promised has
'that a man promised him to read it'

Partial verb phrase fronting

- (19) Der Frau geben wird er das Buch.
the woman give will he the book
'He will give the woman the book.'
- (20) Das Buch geben wird er der Frau.
the book give will he the woman
'He will give the woman the book.'
- (21) Geben wird er der Frau das Buch.
give will he the woman the book
'He will give the woman the book.'
- (22) Der Frau geben wird er das Buch müssen.
the woman give will he the book must
'He will be obliged to give the woman the book.'
- (23) Das Buch geben wird er der Frau müssen.
the book give will he the woman must
'He will be obliged to give the woman the book.'

A List of phrases covered/rejected by the grammar

- (24) Geben wird er der Frau das Buch müssen.
give will he the woman the book must
'He will be obliged to give the woman the book.'

Multiple frontings

- (25) Der Frau das Buch gibt er nicht.
the woman the book gives he not
'He doesn't give the woman the book.'
- (26) Dem Saft eine kräftige Farbe geben Blutorangen.
the juice a strong color give blood.oranges
'Blood oranges give the juice a strong color.'
- (27) Der Frau den Aufsatz muss er geben.
the woman the paper must he give
'He has to give the woman the paper.'
- (28) * Der Frau der Aufsatz gibt er.
the woman the paper gives he
- (29) * Der Frau der Aufsatz muss er geben.
the woman the paper must he give

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German clause structure: An analysis with special consideration of so-called multiple frontings

This book argues for a head-movement analysis of German within the framework of HPSG. While many surface-based analyses of German sentence structure are compatible with simple verb last, verb first and verb second sentences, there are examples that seem to contradict the verb second property of German in that more than one constituent is placed before the finite verb. I argue that surface-based approaches do not capture the phenomenon adequately and that an analysis with an empty verbal head is the only one that gets the facts right.

The book discusses alternative GPSG, HPSG, Dependency Grammar and Construction Grammar analyses. It ends with a general discussion of empty elements.

