

Complex Predicates: Verbal Complexes, Resultative Constructions, and Particle Verbs in German

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**CENTER FOR THE STUDY
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Introduction

The Content

In this book I examine various phenomena such as auxiliary + verb combinations in future, perfect, and passive constructions, causative constructions, subject and object predicatives, resultative constructions, and particle + verb combinations. The properties of all these constructions are studied on a broad empirical basis, mainly with data from German. The analyses that will be provided are formulated in the framework of Head-Driven Phrase Structure Grammar (HPSG).

In Chapter 1 some vocabulary that is used throughout the book will be introduced. I present the basic building blocks of an HPSG for German. I discuss the representation of valence and the way constituents that stand in head-argument or head-adjunct relation to each other are combined. I provide an analysis for various German sentence types since this is important in the context of particle verbs where the distribution of particle and verb in verb-initial and verb-final sentences has to be explained.

After having introduced the basic concepts and ideas, I provide analyses for the future and perfect construction and other so-called coherent infinitive constructions in Chapter 2, building on work by Hinrichs and Nakazawa (1989b) and Kiss (1995). This chapter also deals with the differences between raising and control and how these can be captured in an HPSG setting. I show that subject and object predicative constructions pattern with raising constructions.

While the analysis of the verbal complex in German is fairly well understood in general, the question of how the passive should be analyzed is by no means uncontroversial. In Chapter 3 I discuss Heinz and Matiasek's formalization (1994) of Haider's ideas (1986a) and show how it has to be revised and extended in order to capture modal infinitive constructions and other passive-like constructions.

Chapters 4 and 5 deal with secondary predication. It is now common to analyze depictive predicates as adjuncts and resultative predicates as complements. In Chapter 4 I show that depictives can refer to non-overt arguments of a verb. I show that subjects, direct objects, and indirect objects are possible antecedents for depictive predicates and that Keenan and Comrie's Obliqueness Hierarchy (1977)

is relevant for the markedness of examples with reference to indirect objects.

In Chapter 5 I show that resultative constructions in German behave like raising constructions. A lexical rule will be suggested that transitivizes intransitive verbs and adds a result predicate.

The most complex phenomenon that is discussed in this book is the combination of verbs with particles which will be discussed in Chapter 6. There are large classes of particle verbs that are formed productively and there are also many particle verb combinations that do not have a transparent meaning. Therefore it is often argued that they should be listed as words in the lexicon. This is a highly controversial issue since the particle can be split from the verb by morphological and syntactic processes. Whether particle verb combinations are morphological objects or whether they are the result of a syntactic process has been discussed for several decades and it seems as if the issue has taken on religious proportions. Proponents of the word hypothesis claim that particles cannot be fronted, that they cannot be modified, that they cannot be separated from the verb in verb-final sentences in German. That all these claims are wrong will be shown in a broad empirical study. Instead of assuming that the combination of particle and verb is always done in syntax or always in morphology, I assume that particle and verb are combined in syntax unless the particle verb combination undergoes further morphological processes, as for instance *un*-prefixation to adjectival participles that are derived from particle verbs. Inflection and derivation applies to stems which are subcategorized for a particle directly. Such an analysis avoids the problem of morphosyntactic and morphosemantic bracketing paradoxes which arise in alternative analyses.

I suggest a lexical rule for deriving the productive verb particle combinations. This rule is very similar to the one suggested in Chapter 5 for resultative constructions. Both rules refer to a valence feature that is relevant for complex forming predicates. This makes it possible to explain why neither the combination of particles with a verb nor the combination of a resultative predicate with a verb can be iterated and why particles and resultative predicates are mutually exclusive. Because of the uniform representation of complex predicates, the fronting patterns of coherent verbal and adjectival constructions, subject and object predicative constructions (Chapter 2), resultatives, and particles can be analyzed by the same mechanism that is presented in Chapter 2.

The seventh chapter of the book will deal with alternative proposals for the analysis of complex predicates.

Finally, I draw some conclusions in Chapter 8.

The Structure

Chapters 3, 4, 5, and 6 are all separated into two parts: a section about the phenomenon and a section about the analysis. The aim is to have all the relevant data and formulations of the generalizations that can be inferred from the data in the first section, and to have the formalization of the general insights in the second

part. This is supposed to make the book readable for those who are not interested in all the formal details. Another reason for this split is the lesson I learned from looking at the history of theoretical linguistics. Syntactic theories have changed dramatically during the past decades, and nowadays it is sometimes difficult to find the interesting points among theory-internal discussions that are not relevant anymore.

Since Chapter 1 is a more general background chapter, the data are not presented at the beginning of the chapter, but at the beginning of each section.

The Method

In this study I try to use example sentences that occur in real texts. One reason for this is that naturally occurring examples are often less marked than hand-made ones, which is due to various factors like information structure, stress and focus distribution, world knowledge, and so on. While reading newspapers carefully I discovered that a lot of structures that theoretical linguists claim are impossible can actually be instantiated by appropriate lexical material. In many cases one can falsify authors' claims by reading their own publications. This clearly shows that introspection alone is not sufficient for doing linguistics.

I do not claim that constructions that cannot be found in corpora do not exist, but I do not accept statements like: 'I find X ungrammatical. Therefore constructions with the structure of X do not exist.' Note that I do not argue against introspection as a means of evaluating existing data. What I argue against is the way ungrammatical examples are constructed to rule out a whole construction type on the basis of these examples. To take an example, consider NP extraposition. Of course, sentences like (1) are bad.

- (1) Er hat geliebt Maria.
 he has loved Maria
 'He loved Maria.'

But does this mean that NP extraposition is impossible in general? No. The examples in (2) show that NP extraposition has to be accounted for in a grammar of German.¹

- (2) a. Unter denen des alten Indien muten uns am fremdartigsten _i an
 under those of.the old India seem us at.the strangest at
 [die Kapitel über die Nägelwunden, das Beißen mit den Zähnen
 the chapters over the nail.wounds the biting with the teeth
 und die Anwendung von Schlägen]_i.²
 and the use of hits
 'Amongst the chapters on ancient India those that will appear the

¹I omit the glosses of very long examples throughout the book.

²*Das Kamasutram – Orientalische Liebeslehre*, Goldmann Verlag, 1992, p. 18 (in the introduction).

strangest to us are the ones dealing with scratching, biting and beating.’

- b. Und mit diesem Heute sind $_i$ gemeint [die Jahre, in denen er das and with this today are meant the years in which he the „Curriculum“ schrieb, 1938 bis 1942] $_i$.³
Curriculum wrote 1938 to 1942
‘What is meant with this ‘today’ is the years in which he wrote the Curriculum, 1938 to 1942.’
- c. Ich weiß nicht, was Schiller dazu sagen würde, aber mich hat $_i$ I know not what Schiller there.to say would but me has einigermaßen ergriffen [die moralische Schönheit dieses Victor somewhat seized the moral beauty of.this Victor Klemperer] $_i$.⁴
Klemperer
‘I do not know what Schiller would think of it, but I was quite moved by the moral beauty of this Victor Klemperer.’
- d. Es seien $_i$ genannt [die vorherrschende Prädetermination und das Klammerprinzip (auf beide Besonderheiten komme ich noch zurück) sowie die Funktionalisierung der Verbstellung für die Unterscheidung der Satzarten und die kommunikativ (für Thema-Rhema-Gliederung) nutzbaren Permutationsmöglichkeiten der Satzglieder] $_i$.⁵
‘The prevalent predetermination and the bracket principle should be mentioned as examples (I will come back to both peculiarities later) as well as the functionalization of the verb position for the differentiation of the sentence types and the communicative permutation possibilities of the sentence segments (for theme-rheme structuring).’
- e. Von diesem Nebeneinander gleichstufiger ES, die in from this next.to.each.other (of).same.level ES that in verschiedenen Leerstellen stehen, ist $_i$ zu unterscheiden [die various empty.areas stand is to differentiate the Möglichkeit, die gegeben ist, ES wieder als Teile von ES zu possibility that given is ES again as parts of ES to bringen] $_i$.⁶
bring
‘The possibility to have ES as parts of ES has to be distinguished from such as being next to each other of ES on the same level which fill different empty positions.’

³Martin Walser: „Wir werden Goethe retten“, Spiegel, 52/1995, p. 142.

⁴Martin Walser: „Wir werden Goethe retten“, Spiegel, 52/1995, p. 146.

⁵Heinrich Weber: 1990. Typologische Zusammenhänge zwischen Wortstellung und analytischer Morphologie im Deutschen, *Zeitschrift für Germanistische Linguistik* 18, p. 13.

⁶In the main text of Heringer, 1973, p. 232.

- f. Baumann (32), Olympiasieger von Barcelona, hat alles erklärt. Wie er trainiert hat, härter und intensiver als je zuvor. Wie er die Saison $_i$ gewidmet hat [dem Bestreben, persönliche Bestzeiten zu verbessern] $_i$.⁷
 ‘Baumann (32), winner of the Barcelona Olympics, explained everything. How he has trained harder and more intensively than ever. How he dedicated this season to the endeavor to break his personal records.’
- g. [Zeuge $_i$] zu sein [des seligen Taumels der eine große Nation in witness to be of the blissful frenzy that a great nation in dem Augenblick ergriff] $_i$.⁸
 the moment seized
 ‘to be witness to the blissful frenzy that took hold of a great nation at that moment’
- h. [...] hier läßt sich aber auch [eine einfache Default-Regel $_i$]
 here lets self but also a simple default rule
 annehmen, [des Inhalts, daß Verben, für die nichts anderes accept of the content that verbs for which nothing else festgelegt ist, immer schwach flektiert werden] $_i$.⁹
 set is always weakly inflected get
 ‘But a simple default rule of the content that verbs for which nothing else has been set always take weak inflection can also be assumed here.’
- i. Gegen die Love Parade spreche, daß sie „[Ausdruck $_i$] ist [der geistigen Lage der Nation, einer harmlos gewordenen, vom System goutierbaren Revolte, die zugleich – im konkreten Fall: buchstäblich – die Erinnerung an Alternativen (sowohl zur bestehenden Gesellschaft wie auch zu sich selbst) verdrängt, zudröhnt, zertantzt, verkiff] $_i$ “.¹⁰
 ‘What speaks against the Love Parade is that it has become an expression of the nation’s spiritual state, a revolt gone soft, palatable to the system and which literally suppresses, blasts out, dances and dopes away all memory of alternatives (to both existing society and the individual).’

Rather than ruling out sentences like (2), one should allow for NP extraposition in general and then try to find the constraints for this phenomenon in order to explain why (1) is bad.

In many cases, acceptability is influenced by information structure, and phrasal patterns that seem to be impossible if one looks at hand-made examples only can in fact be observed. To make it possible for the reader to check the context of the

⁷taz, 12.08.1997, p. 19.

⁸Goethe, quoted from Paul, 1919, p. 68.

⁹In the main text of Wunderlich, 1987a.

¹⁰Wiglaf Droste, Spiegel, 28/1998, p. 110.

examples I use throughout the book, I decided to provide the exact references to the source of the examples.

Corpora Used

Most of the examples in this book are from the *taz*, which is a newspaper that appears nation-wide in Germany (<http://www.taz.de>). Others are from the magazine *Der Spiegel*, from the computer magazine *c't*, and from the *zitty*, a small independent 'what's on' magazine for Berlin. I have also considered examples from novels and some from scientific texts on linguistics. Of course, it is clear to me that the language of linguists changes according to their research topic and according to the theories they have at a certain stage, but in many cases I have quoted examples that show that a claim of the author is wrong and this excludes the possibility that the production of the respective sentences was influenced by the author's theoretical work.

It is very convenient to use electronic corpora to find data to justify certain claims about idioms and derivational morphology. For these particular surveys I used mainly the *taz* CD roms, which contain thirteen years of the newspaper. I also used the COSMAS corpus that is provided by the Institut für Deutsche Sprache (IDS) Mannheim (<http://corpora.ids-mannheim.de/~cosmas/>). The version that is accessible via the World Wide Web contains 128 million words. The examples from *Die Zeit*, *Süddeutsche Zeitung*, and *Mannheimer Morgen* were found with COSMAS. Thorsten Brants found some examples in the NEGRA corpus (<http://www.coli.uni-sb.de/sfb378/negra-corpus/>) for me. The NEGRA corpus is an annotated corpus of parts of the *Frankfurter Rundschau*. The annotation is done in Saarbrücken at the Computational Linguistics Department. I also use a few examples from the *Verbmobil* corpus, which consists of some CD roms of spoken language (Burger, Weilhammer, Schiel, and Tillmann, 2000). On *Verbmobil* in general see Wahlster, 1993.

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literature. Detmar Meurers helped me to get hold of articles that were difficult to find. I also thank Nicole Dehé and Anke Lüdeling for articles that were difficult to get in libraries. Thorsten Brants helped me to find the examples that are from the NEGRA corpus. Thanks to Uta Waller and Philippa Cook for proof-reading and translating sample sentences from newspapers, and to Fred & Günther, who adapted the cartoon on the next page for me, which originally appeared in *zitty*, 5/2000, p. 79. I also want to thank Johannes Heinecke, Detmar Meurers, and the members of the *German Language TeX Users Group Communication List* for L^AT_EX help. This book was set on Linux machines. Thanks to all Linux developers. Special thanks go to Martin von Löwis for the help with Linux installations I managed to mess up.

I have talked about some of the issues that are addressed in this book in various places. Some of the data in Chapter 6 was presented at HPSG 99 in Edinburgh, though the analysis that I provide now is a different one. I have also delivered talks at the workshop on particle verbs on February the 4th and 5th, 2000 in Leipzig, and at the GGS 2000 in Potsdam, in June 2000. I talked about the analysis of depictive secondary predicates at the International Workshop on Head-Driven Phrase Structure Grammar on November the 3rd and 4th, 2000 in Tübingen and at Formal Grammar 2001 in Helsinki. The analysis of the morphology of particle verbs was presented at HPSG 2001 in Trondheim and the analysis of the passive was presented at TaCoS 2002 in Potsdam. I am grateful for the invitations to the Seminar für Sprachwissenschaft in Tübingen, to Alfa-Informatica in Groningen, to the Institut für maschinelle Sprachverarbeitung (IMS) in Stuttgart, to the Sprachwissenschaftliches Institut of the Ruhr-Universität Bochum, to the Institut für Linguistik/Allgemeine Sprachwissenschaft of the Universität Potsdam, to the Fachbereich Sprach- und Literaturwissenschaft of the University Bremen, and to the Institut für Germanistische Sprachwissenschaft of the Friedrich Schiller University Jena where I have been invited to present my ideas. I thank all participants of these conferences, workshops, and invited talks for many fruitful discussions.

Finally, I also want to thank my employer, the DFKI GmbH, for excellent working conditions and for the opportunity to travel and to present my ideas to and get input from other researchers.

NEUER-
DINGS ÜBER-
LEGT SICH STEFAN
JEDES WORT
DREIMAL!!

NEUER-
DINGS?
...DING
DES NEUEN?
...DES NEUEN
DINGS?...



FRED & GUNTER

U.S.W...

Background: The German Sentence Structure and its HPSG Analysis

In the following sections, I sketch some basic architectural facts of Head-Driven Phrase Structure Grammar (HPSG) in general (on HPSG see Pollard and Sag, 1987, 1994 or the introductory textbooks Borsley, 1999; Sag and Wasow, 1999) and the specific version of HPSG that I am assuming (Müller, 1999a). I show how syntactic relations between heads and their dependents are described. I discuss the organization of the lexicon in general and lexical redundancy rules in particular. I provide an account of verb placement in German and an analysis for the placement of one constituent before the finite verb in main clauses. It is important to provide an analysis of verb placement in German since this is of some relevance when the distribution of verb and particle in particle verb constructions is discussed. An account of the relatively free constituent order is important since such order freedom can also be observed in constructions with depictive predicates and with verbal complexes, copula constructions, subject and object predicatives, resultative constructions, and particle verb constructions.

Before I start introducing HPSG let me first introduce the topological fields model that can be used to describe the German clause. Other introductions to this model can be found in Engel, 1970; Reis, 1980; Höhle, 1986; Askedal, 1986.

1.1 Topological Fields

German sentences are classified according to the position of the finite verb. There are sentences with the finite verb in final position (3a), with the finite verb in initial position (3b), and with the verb in verb-second position (3c).

- (3) a. Peter hat erzählt, daß er das Eis gegessen *hat*.
Peter has told that he the ice-cream eaten has
‘Peter said he ate the ice-cream.’
- b. *Hat* Peter das Eis gegessen?
has Peter the ice-cream eaten
‘Did Peter eat the ice-cream?’

- c. Peter *hat* das Eis gegessen.
 Peter has the ice-cream eaten
 'Peter ate the ice-cream.'

One can observe that the finite verb and its non-finite verbal complement are adjacent only in (3a). In (3b) and (3c) they are discontinuous. On the basis of this distribution the German clause is partitioned. In (3b) the verbs are at the left and at the right periphery of the clause. These positions are called the left and the right sentence bracket. In embedded sentences the finite verb is in general a part of the right sentence bracket. In yes/no questions the finite verb is in initial position, and in declarative clauses it usually is in second position.

The notion of sentence bracket allows the German sentence to be partitioned into *Vorfeld* ('pre-field', 'initial field'), *Mittelfeld* ('middle field'), and *Nachfeld* ('after-field', 'final field'): The *Vorfeld* is the topological field to the left of the left sentence bracket, the *Mittelfeld* is the part between the left and the right sentence bracket and the *Nachfeld* is the topological field to the right of the right sentence bracket. The table on the facing page gives some examples.

The right sentence bracket may contain several verbs. These verbs make up the verbal complex or verb cluster. Predicative adjectives behave like verbs in several respects and I therefore regard the adjective in (4) as being located in the right sentence bracket.

- (4) Karl ist seiner Frau treu.
 Karl is his wife faithful
 'Karl is faithful to his wife.'

I will justify this in more detail in Chapter 2.1.9.

As the examples in the table on the next page show, not all topological fields have to be filled in a sentence. In (5), we have elements in the *Vorfeld*, in the left sentence bracket, in the *Mittelfeld*, and in the *Nachfeld*, but the right sentence bracket is empty.

- (5) Er gab der Frau das Buch, die er kennt.
 he gave the woman the book who he knows
 'He gave the book to the woman he knows.'

That the relative clause in (5) is not part of the *Mittelfeld* is obvious if one embeds the finite verb under a perfect auxiliary. Since non-finite verbs are located in the right sentence bracket, the *Mittelfeld* is clearly separated from the *Nachfeld* and (6b) shows that the relative clause cannot appear in the *Mittelfeld* unless it forms a continuous constituent with *der Frau* as is the case in (6c).

- (6) a. Er hat der Frau das Buch gegeben, die er kennt.
 he has the woman the book given who he knows
 b. *Er hat der Frau das Buch, die er kennt, gegeben.
 he has the woman the book who he knows given

<i>Vorfeld</i>	left bracket	<i>Mittelfeld</i>	right bracket	<i>Nachfeld</i>
Karl		schläft.		
Karl		hat	geschlafen.	
Karl		erkennt		
Karl		färbt	um	den Maria kennt.
Karl		hat	erkannt.	
Karl		hat	erkannt.	
Karl		hat	erkannt	als sie aus dem Zug stieg.
Karl		hat	behauptet.	
Karl		hat	behauptet	Maria zu erkennen.
		Schläft		
		Schlaf!		
		Iß	auf!	
		Hat	gegessen.	
		weil	gegessen hat	ohne mit der Wimper zu zucken.
		weil	essen können will	ohne gestört zu werden.
		wer	gegessen hat.	
		Niemand da?		

- c. Er hat der Frau, die er kennt, das Buch gegeben.
he has the woman who he knows the book given

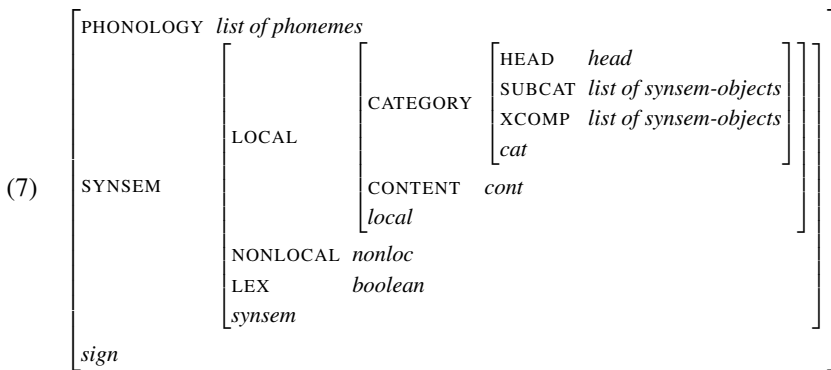
Having introduced the topological fields, I now introduce the basic architectural facts about HPSG and then turn to the analysis of the German sentence structure in the HPSG framework.

1.2 Signs and Types

In this subsection, I introduce the version of HPSG I am assuming. I first discuss feature structures that are used to model linguistic objects. After this, I explain types and type hierarchies. Before discussing an example of head-argument structures, I show how syntactic and semantic properties of linguistic objects are represented.

Many current linguistic theories make use of feature specifications to describe linguistic objects. In HPSG the features are organized in groups containing features that describe a certain aspect of a linguistic object. For instance, one group of features describes syntactic and another group semantic aspects. The linguist uses feature descriptions containing a certain part of the information that is present in the feature structure that models the object. HPSG is a theory of linguistic signs in the sense of Saussure (1915). These linguistic signs are form/meaning pairs.

(7) shows a description of a sign that exemplifies the feature geometry that will be used throughout this book.



Values of features may be complex (as for example SYNSEM) or simple (LEX). The value of a feature is of a particular type, which is shown in *italics*. Which types are assumed and their hierarchical organization is declared in the so-called signature underlying an HPSG theory.¹ The type *boolean*, for instance, has the two subtypes + and -. The so-called appropriateness conditions as second part of the signature declare which attributes and attribute values are appropriate for which type of object. For example, LEX is assumed to be an appropriate attribute of

¹For convenience sake, the signature is generally only implicitly provided, but cf. the appendix of Pollard and Sag, 1994 for an explicit example.

synsem objects, and its value has to be *boolean* (or one of its subtypes). Subtypes inherit all properties of their supertype. To give a non-linguistic example, consider the type hierarchy in Figure 1.

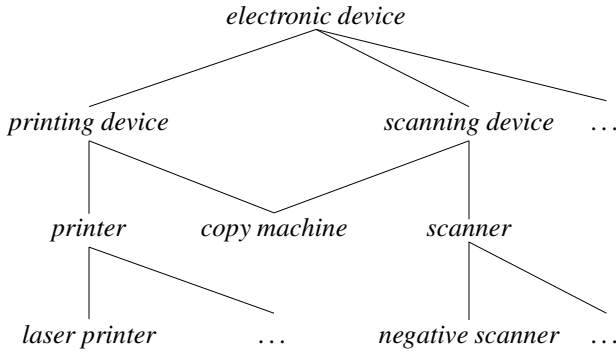


FIGURE 1 Subtypes of *electronic device*

Both printing devices and scanning devices are electronic devices. They have a power supply. This is a property all electronic devices share. *printing devices* and *scanning devices* are subtypes of *electronic device*. They inherit the properties of their supertype, for instance having a power supply. A printing device is a device that can print information and a scanning device is a device that gathers information. A copy machine is a device that can do both. *copy machine* inherits the properties of *printing device* and *scanning device*. Printers cannot scan. Therefore *printer* is not a subtype of *scanning device*. Scanners cannot print. Therefore *scanner* is not a subtype of *printing device*. A negative scanner is a special kind of scanner. The type *negative scanner* is more specific than its supertype *scanner*. The type *negative scanner* inherits all properties of *scanner* and adds its own properties. Similarly, *laser printer* is a subtype of *printer*.

Having briefly introduced the type concept, I now explain the feature description in (7) in more detail. The structure in (7) is a description of a *sign*. PHONOLOGY (PHON) contains a list of phoneme strings that correspond to the actual utterance. The value of SYNTAX-SEMANTICS (SYNSEM) is a feature structure containing all syntactic and semantic information about the sign. This information is divided into information that is relevant in a local context (LOC) and information that is used to establish nonlocal dependencies (NONLOC). The syntactic properties of a sign are represented under the path SYNSEM|LOC|CATEGORY (abbreviated as SYNSEM|LOC|CAT) and the semantic contribution of a sign is represented under SYNSEM|LOC|CONTENT (abbreviated as SYNSEM|LOC|CONT).

The HEAD value contains all the features that are projected from a lexical head of a phrase to the complete phrase (for instance the part of speech and case). SUBCAT and XCOMP are valence features. Their values are lists of *synsem* objects,

i. e. descriptions of the syntactic and semantic properties of the signs the head has to combine with in order to yield a maximal projection. XCOMP contains elements that form a complex with their head, and SUBCAT all other arguments of the head. Heads that form a verbal complex with their dependent elements may require their complement to be lexical (or quasi lexical), i. e. have a LEX value +. Only heads that have not yet been combined with complements are LEX+. Heads together with arguments that are not part of the predicate complex are LEX-. For a motivation of the LEX feature see Chapter 2.2.1.

The type *sign* has the two subtypes *word* and *phrase*. Structures of type *phrase* have features that specify the daughters, i. e. the internal structure of a sign. For the type *sign*, I assume the subtypes shown in Figure 2.² The figure shows a multiple

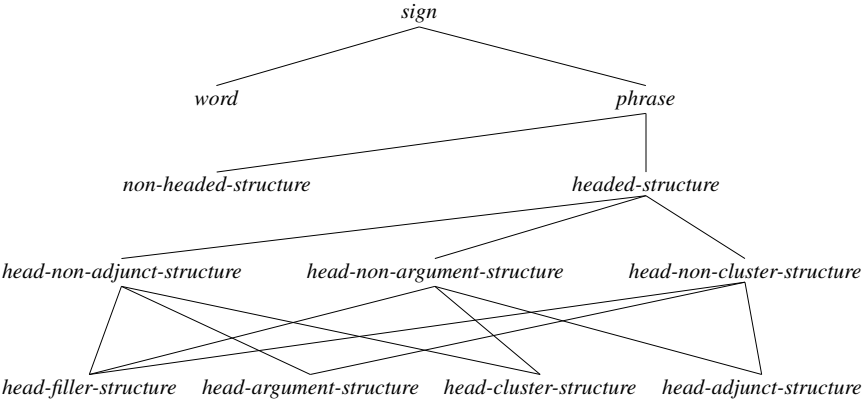


FIGURE 2 Subtypes of *sign*

inheritance hierarchy. The leaf nodes below *headed-structure* are most specific subtypes of phrases. Our theory includes Immediate Dominance Schemata (which will be introduced below) defining the properties of each of these phrases. They therefore play a role similar to the rules in phrase structure grammar. A phrase structure grammar rule like (8) is described by the feature description in (9).

(8) $N \rightarrow N, X, Y$

(9)
$$\left[\begin{array}{l} \text{SYNSEM|LOC|CAT|HEAD} \quad \textit{noun} \\ \text{HEAD-DTR|SYNSEM|LOC|CAT|HEAD} \quad \textit{noun} \\ \text{NON-HEAD-DTRS} \langle X, Y \rangle \end{array} \right]$$

The left-hand side of the rule in (8) corresponds to the feature structure above minus the feature value pairs for HEAD-DTR and NON-HEAD-DTRS. The right-hand side of the rule corresponds to the feature descriptions under the path HEAD-

²See also Sag, 1997 for a similar type hierarchy.

DTR and in the list of non-head daughters. For a concrete example of a grammar rule see Section 1.5.

Types that are organized in hierarchies like the one in Figure 2 are a good way to refer to a group of linguistic objects by referring to a type that is a supertype of all members of the group. Generalizations that hold for members of that group can be specified with reference to this supertype.

For instance, a feature structure of type *headed-structure* always has a feature that specifies the head daughter. The head daughter is a single sign. In headed structures the head features of the head daughter are always identical to the head features of the mother. This is enforced by the following type definition:

(10) Head Feature Principle:

$$\text{headed-structure} \rightarrow \left[\begin{array}{l} \text{SYNSEM|LOC|CAT|HEAD} \boxed{1} \\ \text{HEAD-DTR|SYNSEM|LOC|CAT|HEAD} \boxed{1} \end{array} \right]$$

The identity of values is expressed by the use of identical numbers in boxes. The paths *SYNSEM|LOC|CAT|HEAD* and *HEAD-DTR|SYNSEM|LOC|CAT|HEAD* lead to the same structure. The type specification in (10) corresponds to the Head Feature Principle of Pollard and Sag (1994, p. 34).

The type *head-non-argument-structure* is a supertype of all leaf nodes that are distinct from *head-argument-structure*. The type *head-non-adjunct-structure* is a supertype of all leaf nodes that are distinct from *head-adjunct-structure*. *head-non-cluster-structure* is a supertype of all leaf nodes that are distinct from *head-cluster-structure*. These types are used to specify constraints on grammar rules of the respective type which will be discussed in this and in the following chapter. Examples of non-headed structures are certain coordinated structures.

In the following subsection, I discuss the representation of lexical entries.

1.3 The Representation of Lexical Entries

For the description of the semantic contribution of nominal objects, Pollard and Sag (1994, p. 24) assume feature structures of the sort *nominal-object*. Such structures have an attribute INDEX (IND), which is the HPSG analog of a reference marker in Discourse Representation Theory (Kamp and Reyle, 1993) or of a parameter introduced by an NP used in Situation Semantics (Barwise and Perry, 1983). The value of IND is a feature structure of type *ind*. *ind* has the subtypes *ref* and *expl*. *ref* is used for referential indices and *expl* for the IND value of expletives. The subtypes of *nom-obj* are shown in Figure 3 on the next page. Structures of sort *nominal-object* have an attribute RESTRICTIONS (RESTR). The value of RESTR is a set of parameterized states of affairs (psoa) (On parameterized states of affairs see Barwise and Perry, 1983). The relevant aspects of the lexical entry for the noun *Buch* ('book') is shown in (11):

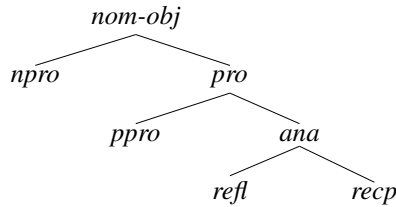
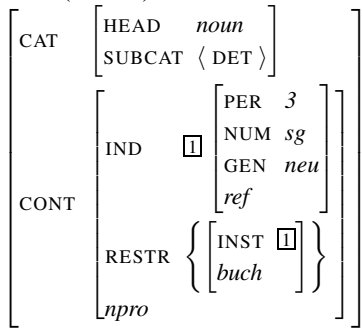


FIGURE 3 Subtypes of *nom-obj*

(11) *Buch* ('book'):



The feature description under IND contains the person (PER), number (NUM), and gender (GEN) of *Buch*. This information is used in theories of agreement and pronoun binding (Pollard and Sag, 1994, Chapter 2, Chapter 6). INST stands for INSTANCE. DET is an abbreviation for a *synsem* object that describes a determiner. Throughout the book I use the following conventions for abbreviations:

Symbol	Description
XP	$\left[\text{LOC} | \text{CAT} \left[\begin{array}{l} \text{SUBCAT } \langle \rangle \\ \text{XCOMP } \langle \rangle \end{array} \right] \right]$
$\text{NP}[\textit{nom}]_{[3,sg,fem]}$	$\left[\begin{array}{l} \text{LOC} \\ \text{CONT} \end{array} \left[\begin{array}{l} \text{CAT} \left[\begin{array}{l} \text{HEAD } \left[\begin{array}{l} \text{CAS } \textit{nom} \\ \textit{noun} \end{array} \right] \\ \text{SUBCAT } \langle \rangle \\ \text{XCOMP } \langle \rangle \end{array} \right] \\ \text{IND } \left[\begin{array}{l} \text{PER } 3 \\ \text{NUM } \textit{sg} \\ \text{GEN } \textit{fem} \end{array} \right] \end{array} \right] \right]$

Symbol	Description
NP_{expl}	$\left[\begin{array}{c} \text{LOC} \left[\begin{array}{c} \text{CAT} \left[\begin{array}{cc} \text{HEAD} & \textit{noun} \\ \text{SUBCAT} & \langle \rangle \\ \text{XCOMP} & \langle \rangle \end{array} \right] \\ \text{CONT} \mid \text{IND } \textit{expl} \end{array} \right] \end{array} \right]$
$\bar{\text{N}}: \boxed{1}$	$\left[\begin{array}{c} \text{LOC} \left[\begin{array}{c} \text{CAT} \left[\begin{array}{cc} \text{HEAD} & \textit{noun} \\ \text{SUBCAT} & \langle \text{DET} \rangle \\ \text{XCOMP} & \langle \rangle \end{array} \right] \\ \text{CONT} \mid \boxed{1} \end{array} \right] \end{array} \right]$
$\text{NP}_{\boxed{1}}$	$\left[\begin{array}{c} \text{LOC} \left[\begin{array}{c} \text{CAT} \left[\begin{array}{cc} \text{HEAD} & \textit{noun} \\ \text{SUBCAT} & \langle \rangle \\ \text{XCOMP} & \langle \rangle \end{array} \right] \\ \text{CONT} \mid \text{IND } \boxed{1} \textit{ref} \end{array} \right] \end{array} \right]$

The semantic contribution of a verbal element is a parameterized state of affairs (psoa). The type *psoa* has various subtypes. The maximal subtypes correspond to relations like '*geben*' ('give'). '*geben*' is a relation with three arguments. (12) shows an example lexical entry for the finite 3rd person singular form of the ditransitive verb *geben*.

(12) *gibt* ('gives', finite form):

$$\left[\begin{array}{c} \text{CAT} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{VFORM } \textit{fin} \\ \textit{verb} \end{array} \right] \\ \text{SUBCAT} \left\langle \text{NP}[\textit{nom}] \boxed{1}_{[3,sg]}, \text{NP}[\textit{acc}] \boxed{2}, \text{NP}[\textit{dat}] \boxed{3} \right\rangle \end{array} \right] \\ \text{CONT} \left[\begin{array}{c} \text{AGENT } \boxed{1} \\ \text{THEME } \boxed{2} \\ \text{GOAL } \boxed{3} \\ \textit{geben} \end{array} \right] \end{array} \right]$$

VFORM stands for verb form. In (12) the referential indices of the NP arguments are structure-shared with the values of the semantic roles in the *geben* relation. The restriction on the subject of *gibt* to have a 3rd person singular index ensures subject-verb agreement.

The elements in the SUBCAT list are ordered according to the obliqueness hierarchy that was proposed by Keenan and Comrie (1977).

SUBJECT > DIRECT OBJECT > INDIRECT OBJECT > OBLIQUES > GENITIVES > OBJECTS OF COMPARISON

This hierarchy expresses the level of syntactic activity of grammatical functions. Elements higher in this hierarchy are less oblique and can participate more easily in syntactic constructions, like for instance, reductions in coordinated structures (Klein, 1985, p. 15), topic drop (Fries, 1988), non-matching free relative clauses (Bausewein, 1990; Pittner, 1995; Müller, 1999b), passive and relativization (Keenan and Comrie, 1977), and depictive predicates (Chapter 4). This hierarchy is also relevant for constituent order (Pullum, 1977) and Binding Theory (Grewendorf, 1985, p. 160; 1988, p. 60; Pollard and Sag, 1994, Chapter 6).

Some authors assume the order subject, indirect object, direct object for the elements of the SUBCAT list. It is argued that this ordering is supported by constituent order facts and fronting tests that show that the direct object is nearer to the verb. In Müller, 1999a, Chapter 11 I discuss reasons for the preferred constituent order and show how the basic insight by Hoberg (1981), namely that NPs that refer to animated entities tend to precede NPs that refer to inanimate entities, can be captured while maintaining the order of arguments proposed by the obliqueness hierarchy.

As the data in (13) show, the fronting test should not be considered hard evidence for a certain order in the SUBCAT list.

- (13) a. [_V Der Nachwelt hinterlassen] hat sie [eine
the after.world-DAT behind.let has she-NOM an
aufgeschlagene Hör zu und einen kurzen Abschiedsbrief]:³
open-hit Hör zu-ACC and a short farewell.letter-ACC
'What she left posterity was an open Hör zu (magazine listing radio
and TV shows) and a brief letter of farewell.'
- b. [_V [_{NP[*dat*]} Besonders Einsteigern] empfehlen] möchte ich [_{NP[*acc*]}
Quarterdeck Mosaic, dessen gelungene grafische Oberfläche und Be-
nutzerführung auf angenehme Weise über die ersten Hürden hin-
weghilft, obwohl sich die Funktionalität auch nicht zu verstecken
braucht].⁴
'Particularly for beginners, I would like to recommend Quarterdeck
Mosaic since the good design of the graphic interface and the user
guidance will help him/her to scale the first hurdles, although the func-
tionality need not go into hiding either.'

In (13a) and (13b) the dative complement of *hinterlassen* ('to leave behind') and *empfehlen* ('recommend') is fronted together with its verb while the accusative object stays behind in the *Mittelfeld*. Uszkoreit (1987, p. 159), Thiersch (1982, p. 91), von Stechow and Sternefeld (1988, p. 459), Oppenrieder (1991, Chapter 1.5.3.3.1), and Grewendorf (1993, p. 1301) provide constructed examples that also show that the partial verb phrase fronting with a dative complement is possible.

³taz, 18.11.1998, p. 20.

⁴c't, 9/1995, p. 156.

While discussing the constituent order in the *Mittelfeld*, Heck (2000) used examples similar to (14)–(15):

- (14) a. daß er der Mutter das Sorgerecht entzogen hat.
that he-NOM the mother-DAT the custody-ACC took.away has
'that he took custody away from the mother.'
- b. ? daß er das Sorgerecht der Mutter entzogen hat.
that he-NOM the custody-ACC the mother-DAT took.away has
- (15) a. daß er das Kind dem schlechten Einfluß
that he-NOM the child-ACC the bad influence-DAT
entzogen hat.
taken.away has
'that he took the child away from the bad influence.'
- b. ? daß er dem schlechten Einfluß das Kind
that he-NOM the bad influence-DAT the child-ACC
entzogen hat.
taken.away has

The examples show that animateness plays a crucial role for the determination of the unmarked order of arguments in the *Mittelfeld*, i. e., that NPs referring to animate entities tend to precede NPs referring to inanimate entities.

If one uses Heck's verbs in partial verb phrase fronting constructions, one can observe that animateness also plays a role as far as fronting is concerned:

- (16) a. Das Sorgerecht entzogen hat er der Mutter.
the custody-ACC taken.away has he-NOM the mother-DAT
- b. ? Der Mutter entzogen hat er das Sorgerecht.
the mother-DAT taken.away has he-NOM the custody-ACC
- (17) a. Dem schlechten Einfluß entzogen hat er das
the bad influence-DAT taken.away has he-NOM the
Kind.
child-ACC
- b. ?? Das Kind entzogen hat er dem schlechten
the child-ACC taken.away has he-NOM the bad
Einfluß.
influence-DAT

A theory that relies on nearness to the verb has to assume two different verbs *entziehen*, to derive the contrasts in (16)–(17): one selecting an animate dative that is not near to the verb and one selecting an inanimate dative that is near to the verb. Uszkoreit (1986) assumes a lexical rule⁵ that licenses lexical items with

⁵On lexical rules see Section 1.8.

permuted elements in the SUBCAT list for each verb. This approach could be applied to the examples in (16) and (17): The lexical rule takes as input a lexical entry for *entziehen* as used in (16a) and licenses an additional lexical entry for *entziehen* for sentences like (17a) with different restrictions for the animateness of the objects. Uszkoreit's approach and other alternative HPSG accounts of constituent order are discussed in Müller, To Appear a. I prefer a solution where both kinds of frontings are permitted by the grammar and the markedness of one case is explained by general conditions on fronted elements.⁶ In what follows, I assume a representation of the elements in the SUBCAT list in an order that corresponds to the obliqueness hierarchy.

In the following subsection, I explain the distinction between structural and lexical case and how structural case is assigned. This is important for the account of passive that is developed in Chapter 3.

1.4 Case Assignment

If the case value of an argument changes, when the head is used in other syntactic environments, the argument is said to have structural case.

- (18) a. Der Installateur kommt.
 the plumber-NOM comes
 'The plumber is coming.'
- b. Der Mann sieht den Installateur kommen.
 the man sees the plumber-ACC come
 'The man can see the plumber coming.'
- c. das Kommen des Installateurs
 the coming the plumber-GEN
 'the coming of the plumber'

In (18), the case of *der Installateur* ('the plumber') is different in all utterances. In (18a) *der Installateur* is the subject and bears nominative. In (18b) *der Installateur* is the object of the AcI-verb⁷ *sehen* ('to see') and gets accusative, and in (18c) it is a complement of a noun and gets genitive. Nominative, genitive, and accusative can be assigned structurally.

Another construction in which a change of structural case takes place is passivization. *den Hund* is the accusative object of *getreten* in (19a). In the passive version of this sentence which is provided in (19b) this NP is realized bearing nominative case.

⁶Note that the issues discussed in the next chapters are in many cases independent of the analysis that is chosen for constituent order (verb placement and order of elements in the *Mittelfeld*). The only analysis that crucially relies on the way constituent order is treated in Section 1.9 is the analysis of depictive secondary predicates which relies on discontinuous constituents.

⁷The term AcI stands for *Accusativum cum Infinitivum* ('accusative with infinitive'). Examples are perception verbs and the causative and permissive *lassen*. AcI verbs are a subclass of so-called Exceptional Case Marking (ECM) verbs. AcI verbs will be discussed in Chapter 2.1.6.

- (19) a. Der Mann hat den Hund getreten.
 the man-NOM has the dog-ACC kicked
 ‘The man kicked the dog.’
 b. Der Hund wurde (von dem Mann) getreten.
 the dog-NOM was by the man kicked
 ‘The dog was kicked (by the man).’

If the case of the object is dative, no change takes place:

- (20) a. Der Mann hat ihm geholfen.
 the man has him-DAT helped
 ‘The man helped me.’
 b. Ihm wird geholfen.
 him-DAT was helped
 ‘Somebody is helping him.’

There is a longstanding debate as to whether all or some datives in verbal environments should be treated as a structural case (den Besten, 1985a,b; Fanselow, 1987; Czepluch, 1988; Wegener, 1990; Wunderlich, 1997a; Ryu, 1997; Molnárfi, 1998) or whether all datives are assigned lexically (Haider, 1985a, 1986a, 1993; Heinz and Matiassek, 1994; Pollard, 1994; Müller, 1999a; Meurers, 1999b; Müller, 2001a; Vogel and Steinbach, 1998).

The one argument advanced in favor of certain datives as a structural case is the dative passive, which is possible with the verbs *bekommen* (‘to receive’), *erhalten* (‘to obtain’), and *kriegen* (‘to get’). In (21b), the dative argument of *schenken* is realized as nominative.

- (21) a. Der Mann hat den Ball dem Jungen geschenkt.
 the-NOM man has the-ACC ball the-DAT boy given
 ‘The man gave the ball to the boy.’
 b. Der Junge bekam den Ball geschenkt.
 the-NOM ball got the-ACC ball given
 ‘The ball was given to the boy.’

Some of the proponents of lexical dative assume a special process that converts the dative NP into an NP with structural case (Haider, 1986a, Section 4.1; Heinz and Matiassek, 1994, p. 228; Müller, 1999a, p. 298).

As Haider (1986a, p. 20) notes, treating the dative as a lexical case is also supported by examples like (22):

- (22) a. Er streichelt den Hund.
 he-NOM strokes the dog-ACC
 b. Der Hund wurde gestreichelt.
 the dog-NOM was stroked

- c. sein Streicheln des Hundes
his stroking of.the dog-GEN
- d. Er hilft den Kindern.
he-NOM helps the children-DAT
- e. Den Kindern wurde geholfen.
the children-DAT was helped
'The children were helped.'
- f. das Helfen der Kinder
the helping of.the children-GEN
- g. * sein Helfen der Kinder
his helping of.the children-GEN

streicheln ('to stroke') takes an accusative object that can be realized as nominative in passive constructions, i. e. an NP complement with structural case. The genitive NP in (22c) expresses the object of the nominalized verb. Dative NPs, on the other hand, cannot surface as genitive complements in nominalizations. The genitive NP in (22f) refers to the agent of *helfen*. The agent of *helfen* ('to help') has structural case and can therefore surface as genitive in a nominal environment. If the subject role is filled by a possessive that expresses the agent as in (22g), the phrase becomes ungrammatical. It is hard to imagine how the contrasts in (22) can be explained with the dative as structural case.

Another problematic point of the structural dative is that it cannot be distinguished from accusatives in the context of a bivalent verb. For ditransitive verbs one can say that the subject is assigned nominative, the direct object is assigned accusative and the indirect object assigned dative. But with bivalent verbs the distinction cannot be made. *treten* ('kick') in (19a) and *helfen* in (20a) are both bivalent and yet one object has accusative and the other one has dative. Von Stechow and Sternefeld (1988, p. 435) and von Stechow (1990, p. 187) and authors who see the structural/lexical case issue from a semantic point of view (Kaufmann, 1995a, p. 12; Stiebels, 1996, p. 21–26; Olsen, 1997a, p. 313; Rapp, 1997, p. 57, p. 129) therefore assume that the dative of bivalent verbs is a lexical dative.⁸ This predicts that the dative passive is not possible with such verbs. It is true that dative passives with bivalent verbs are not very frequent (Hentschel and Weydt, 1995), but Wegener (1990, p. 75) explains this with the low frequency of bivalent verbs that take a dative object and are unergative. Wegener (1985b, p. 134; 1990, p. 75) provides the examples in (23):⁹

- (23) a. Er kriegte von vielen geholfen / gratuliert / applaudiert.
he got by many helped congratulated applauded
'Many helped / congratulated / applauded him.'

⁸But see Wunderlich, 1997b, p. 51.

⁹See also Fanselow, 1987, p. 161–162.

- b. Man kriegt täglich gedankt.
 one gets daily thanked
 'One is thanked on a daily basis.'

The sentences in (24) are corpus examples:

- (24) a. „Da kriege ich geholfen.“¹⁰
 there get I helped
 'Somebody helps me there.'
- b. „Klärle“ hätte es wirklich mehr als verdient, auch mal zu einem
 Klärle had it really more than deserved also once to a
 „unrunden“ Geburtstag gratuliert zu bekommen.¹¹
 insignificant birthday congratulated to get
 'Klärle would have more than deserved to be wished a happy birthday,
 even an insignificant birthday.'
- c. Mit dem alten Titel von Elvis Presley „I can't help falling in love“
 with the old song by Elvis Presley I can't help falling in love
 bekam Kassier Markus Reiß zum Geburtstag gratuliert, [...] ¹²
 got cashier Markus Riss to.the birthday congratulated
 'The cashier Markus Riss was wished a happy birthday with the old
 Elvis Presley song "I can't help falling in love with you".'

So I assume that the dative is always lexical. A lexical entry for a ditransitive verb like *geben* ('give') has the SUBCAT value $\langle \text{NP}[\textit{str}], \text{NP}[\textit{str}], \text{NP}[\textit{ldat}] \rangle$. *str* stands for structural case and *ldat* for the lexical dative. The assignment of structural case works as follows (Przepiórkowski, 1999; Meurers, 1999b; Meurers, 2000, Chapter 10.4.1.4):¹³

Principle 1 (Case Principle)

- In a list that contains both subjects and complements of a verbal head, the first element with structural case is assigned nominative case unless it is raised to a dominating head.
- All other elements of this list with structural case are assigned accusative case.
- In nominal environments all elements with structural case are assigned genitive case.

This Case Principle is very similar to the one that was suggested by Yip, Mal-ing, and Jackendoff (1987) and therefore also accounts for the case systems of a

¹⁰Frankfurter Rundschau, 26.06.1998, p. 7.

¹¹Mannheimer Morgen, 28.07.1999, Lokales; „Klärle“ feiert heute Geburtstag.

¹²Mannheimer Morgen, 21.04.1999, Lokales; Motor des gesellschaftlichen Lebens.

¹³For a way to formalize principle 1 see Przepiórkowski, 1999; Meurers, 1999b; Meurers, 2000, Chapter 10.4.1.4.

variety of languages that were discussed by these authors, including the complicated case system of Icelandic. One crucial difference between the case principle suggested here and the version suggested by Yip, Maling, and Jackendoff is that Principle 1 works monotonously, i. e., cases that are assigned are not overridden by case assignments by a higher predicate.

Having explained the representation of lexical information and the distinction between structural and lexical case, I describe in the next sections how words can be combined to form phrases.

1.5 Head-Argument Structures

Phrases are licensed by different immediate dominance schemata. The following schema licenses head-argument structures, i. e. all structures in which a syntactic head combines with one of its arguments.

Schema 1 (Head-Argument Schema (preliminary version))

head-argument-structure \rightarrow

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

The ‘ \oplus ’ stands for the *append* relation, which concatenates two lists.

The argument daughter is represented as an element in the list of non-head-daughters. Its syntactic and semantic properties ($\boxed{2}$) are identified with the last element in the SUBCAT list of the head daughter, i. e., it is one of the arguments which that head subcategorizes for. Since this dependent of the head is realized, it is not part of the valence requirements of the mother ($\boxed{1}$).

The immediate dominance schemata say nothing about the order of the daughters. The surface order is determined by linear precedence constraints (LP constraints) which are stated independently from the dominance schemata. Therefore Schema 1 licenses both the combination of *er* (‘he’) and *schläft* (‘sleeps’) in (25a) which is head-final and the combination of *mit* (‘with’) and *ihm* (‘him’) in (25b) which is head-initial:

- (25) a. weil er schläft
because he sleeps
b. mit ihm
with him

As an example of structures that are licensed by Schema 1, consider Figure 4 which shows the analysis of the sentence (26).¹⁴

- (26) weil er das Buch dem Mann gibt.
 because he-NOM the book-ACC the man-DAT gives
 ‘because he gives the man the book.’

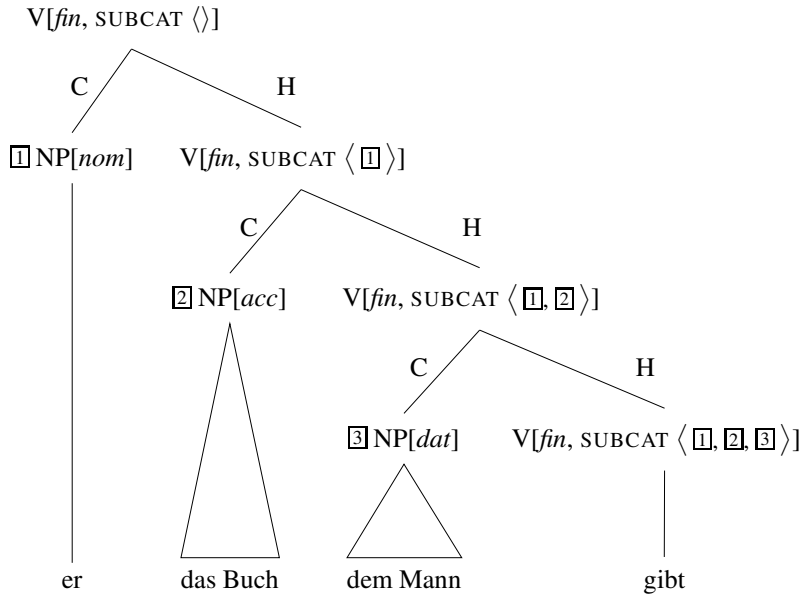


FIGURE 4 Binary Branching Head-Argument Structure

The ditransitive verb *gibt* (‘gives’) which we saw in (12) has three arguments on its SUBCAT list and they are canceled off at the respective projections in the tree. The maximal verbal projection has an empty SUBCAT list.

Note that I do not assume an $S \rightarrow NP, VP$ rule for German. The combination of a verb with its subject is an instance of a normal head-argument relation licensed by Schema 1.¹⁵

¹⁴In the following figures, an H stands for head, an A stands for adjunct, a C for complement, and a CL for cluster daughter. The C is also used to label trees that contain subjects.

¹⁵Note, however, that the grammar which is proposed here is not incompatible with an approach in which the subject is represented in a separate list and subjects and heads are combined by a rule like the following:

(i) $H[\text{SUBJ } \langle \rangle] \rightarrow H[\text{SUBJ } \langle [1] \rangle], [1]$

Since dependents of a head are inserted into the linearization domain of their head (see Section 1.9.1), linearizations in which the subject appears between complements of the verb can be accounted for, even with a rule like (i). Such a rule may turn out to be useful for the analysis of sentences like (665) –

Another point worth mentioning is that daughters are specified at the top level of feature structures of the type *phrase*. Heads are subcategorized for *synsem* objects. This ensures that direct selection cannot refer to phonology values of signs or to daughters of a projection since phonology and the daughters are not contained in *synsem* objects. Therefore everything that is important for selection has to be percolated up explicitly. See also Pollard and Sag, 1994, p. 23 on the locality of selection.

Head-argument structures are a subtype of headed structures. The type *head-argument-structure* inherits all information of its supertypes and adds the information that there is an argument daughter. The typing of grammar rules is the big advantage of the uniform description of all linguistic knowledge with the same formalism. Since dominance structures are typed, it is possible to capture generalizations about certain subsets of dominance structures by an appropriate typing.

Nothing has been said so far about the semantics of phrasal signs. Lexical heads like the one in (12) contain their main contribution under SYNTAX-SEMANTICS|LOCAL|CONTENT (abbreviated as SYNSEM|LOC|CONT). The following type definition ensures that the CONT value of the mother sign is identical with the CONT value of the head daughter.

$$(27) \text{ head-non-adjunct-structure} \rightarrow \left[\begin{array}{l} \text{SYNSEM|LOC|CONT} \quad \boxed{1} \\ \text{HEAD-DTR|SYNSEM|LOC|CONT} \quad \boxed{1} \end{array} \right]$$

The type *head-non-adjunct-structure* is a subtype of *headed-structure* and therefore inherits the constraints on this type. The feature description of linguistic objects of the type *head-non-adjunct-structure*, including the constraints that are introduced by the supertype *headed-structure*, is shown in (28).

$$(28) \left[\begin{array}{l} \text{SYNSEM|LOC} \left[\begin{array}{l} \text{CAT|HEAD} \quad \boxed{1} \\ \text{CONT} \quad \boxed{2} \end{array} \right] \\ \text{HEAD-DTR|SYNSEM|LOC} \left[\begin{array}{l} \text{CAT|HEAD} \quad \boxed{1} \\ \text{CONT} \quad \boxed{2} \end{array} \right] \end{array} \right]$$

Since head-argument structures are a subtype of *head-non-adjunct-structure*, they inherit these constraints. The feature structure in (29) shows the type *head-argument-structure* together with the constraints that are imposed by its supertypes *headed-structure* and *head-non-adjunct-structure*.

(666). Note that using (i) to analyze for instance the example (32c) on page 21 would make it necessary to assume a discontinuous maximal projection, namely the VP *gibt dem Kind einen Ball* ('give the child a ball'). In the grammar developed in this book, maximal projections are always continuous.

$$(29) \left[\begin{array}{l} \text{SYNSEM} \\ \text{HEAD-DTR} \\ \text{NON-HEAD-DTRS} \end{array} \left[\begin{array}{l} \text{LOC} \left[\begin{array}{l} \text{CAT} \left[\begin{array}{l} \text{HEAD} \boxed{1} \\ \text{SUBCAT} \boxed{2} \end{array} \right] \\ \text{CONT} \boxed{3} \end{array} \right] \\ \text{LEX} - \end{array} \right] \left[\begin{array}{l} \text{SYNSEM|LOC} \left[\begin{array}{l} \text{CAT} \left[\begin{array}{l} \text{HEAD} \boxed{1} \\ \text{SUBCAT} \boxed{2} \oplus \langle \boxed{4} \rangle \end{array} \right] \\ \text{CONT} \boxed{3} \end{array} \right] \end{array} \right] \left\langle \left[\text{SYNSEM} \boxed{4} \right] \right\rangle \right]$$

The constraints on headed structures (the Head Feature Principle on page 7) ensure that the information under HEAD is percolated in Figure 4 on page 17. Therefore the part of speech information and the information about the finiteness of the verb is present at all projections of the verb. Because of the constraints on structures of the type *head-non-adjunct-structure*, the CONT value of a lexical head is percolated up the head path to the maximal projection of the head in sentences like the one in Figure 4.

Before I turn to head-adjunct structures in Section 1.7, I want to make some remarks concerning the representation of subjects in non-finite projections.

1.6 The SUBJ Feature

In earlier versions of HPSG (Pollard and Sag, 1987; Pollard and Sag, 1994, Chapters 1–8), subjects and complement requirements were represented in one list (SUBCAT). In Chapter 9 of their 1994 book, Pollard and Sag follow Borsley (1987) in separating the subject (SUBJ) from complements (COMPS). In a later paper, Borsley (1989a) discusses Welsh and argues that subjects of finite verbs should be treated like the other dependents. He formulates a lexical rule that relates lexical items for finite verbs to lexical items for non-finite verbs (p. 349). Pollard (1996) and other authors of HPSG grammars of German followed Borsley's approach for Welsh and now treat the subject of a verb differently according to whether the verb is finite or non-finite. In the lexical representation of non-finite verbs, the subject is represented as the value of the SUBJ feature, whereas it is listed with other dependents in the representation of finite verbs. As far as German is concerned, there are two reasons for making this distinction. In German, maximal projections can be extraposed. If the subject of non-finite verbs is not listed on the SUBCAT list, the notion of "maximal projection" can be defined as a projection with an empty SUBCAT list. In (30) *dem Kind zu helfen* is a maximal projection:

- (30) Karl hat den Mann gebeten, dem Kind zu helfen.
 Karl has the man asked the child to help
 'Karl asked the man to help the child.'

Secondly, the subject cannot be combined with the non-finite verb as the examples in (31) show.¹⁶

- (31) a. * Karl hat gebeten, den Mann dem Kind zu helfen.
 Karl has asked the man the child to help
- b. * Karl hat den Mann gebeten, den Mann dem Kind zu helfen.
 Karl has the man asked the man the child to help

Since SUBJ is not a valence feature in this setting, it is explained why the subject of non-finite verbs cannot be realized.

Kiss (1992; 1995) suggests treating SUBJ as a head feature. This ensures that the SUBJ value is projected and that it can be referred to locally by a governing head in control constructions like (30).^{17,18}

¹⁶As was noted by Haider (1988, p. 55), Wegener (1990, p. 98), and Oppenrieder (1991, p. 57), subjects may be fronted together with non-finite verbs. See Müller, 1999a, Chapter 18.4.1 and pages 169 and on pages 281–283 of this book for some discussion. Meurers (1999a, p. 177) discusses the example in (i) in which a *zu*-infinitive is extraposed together with its subject.

- (i) obwohl damals anfang, der Mond zu scheinen.
 even.though back.then begun the moon-NOM to shine
 ‘even though the moon had begun to shine back then.’

A similar example is due to Tilman Höhle (see also Rosengren, 1992, p. 268):

- (ii) weil dem Mann anfängt der Kopf zu wackeln.
 because the man-DAT begins the head-NOM to shake
 ‘because the head of the man began to shake.’

However, such sentences are impossible with agentive subjects:

- (iii) a. obwohl der Mann anfang zu schnarchen.
 even.though the man-NOM begun to snore
- b. * obwohl anfang, der Mann zu schnarchen.
 even.though begun the man-NOM to snore

In combination with weather verbs, such extrapositions are also excluded although the subject of weather verbs is clearly non-agentive.

- (iv) a. obwohl es damals anfang zu regnen.
 even.though it-EXPL-NOM back.then begun to rain
- b. * obwohl damals anfang es zu regnen.
 even.though back.then begun it-EXPL-NOM to rain

Sentences like (i) and some of the frontings that include the subject cannot be handled if the subject is not contained in the list of elements that can be combined with a head, but as the conditions for the admissibility of extrapositions like (i) are rather unclear, I leave this for further research.

¹⁷See Pollard and Sag, 1994, Chapter 7 on control.

¹⁸Ryu (1997, p. 199) assumes that non-finite verbs have an empty SUBJ value. The index of the subject is contained in the argument structure of the non-finite verb, but since the argument structure is not projected (p. 188), it is unclear how the control relation could be established locally in sentences like (30).

Having explained why subjects of non-finite verbs are not represented on a valence list, I now turn to finite verbs. Subjects and complements of finite verbs can appear both in the sentence initial position before the finite verb (32a,b) and to the right of the finite verb with the subject scrambled between the complements of the verb (32c). Therefore they are represented on the same list.

- (32) a. Ein Mann gibt dem Kind einen Ball.
 a man-NOM gives the child-DAT a ball-ACC
 ‘A man gives the child a ball.’
 b. Dem Kind gibt ein Mann einen Ball.
 the child-DAT gives a man-NOM a ball-ACC
 ‘A man gives a ball to the child.’
 c. Deshalb gibt dem Kind ein Mann einen Ball.
 therefore gives the child-DAT a man-NOM a ball-ACC
 ‘Therefore a man gives the child a ball.’

This expresses the fact that subjects of finite verbs share crucial properties with complements.

The lexical entries in (33) and (34) show the respective representations for a finite and a non-finite form of the verb *helfen*.

- (33) *hilft* (‘helps’, finite form):

CAT	HEAD	SUBJ $\langle \rangle$ <i>verb</i>
	SUBCAT	\langle NP[<i>str</i>] _[1] , NP[<i>ldat</i>] _[2] \rangle
CONT	AGENT	[1]
	EXPERIENCER	[2]
<i>helfen</i>		

- (34) *helfen* (‘help’, non-finite form):

CAT	HEAD	SUBJ \langle NP[<i>str</i>] _[1] \rangle <i>verb</i>
	SUBCAT	\langle NP[<i>ldat</i>] _[2] \rangle
CONT	AGENT	[1]
	EXPERIENCER	[2]
<i>helfen</i>		

Both lexical entries are derived by lexical rules from the same lexical entry for the stem *helf-* that is listed in the lexicon. Listed entries have a feature geometry like the entry in (33). The entry in (34) is licensed by a lexical rule that licenses a lexical sign whose first NP with structural case is not represented in the SUBCAT list but in the SUBJ list.

Subjectless verbs like *grauen* ('dread') in (35) have an empty list as SUBJ value both for their finite and non-finite form.

- (35) Dem Student graut vor der Prüfung.
 the student-DAT dreads before the exam
 'The student dreads the exam.'

The lexical entry for *grauen* is shown in (36).¹⁹

- (36) *grau-* ('dread', finite and non-finite form):
- $$\left[\begin{array}{l} \text{HEAD} \quad \left[\begin{array}{l} \text{SUBJ} \quad \langle \rangle \\ \text{verb} \end{array} \right] \\ \text{SUBCAT} \quad \langle \text{NP}[\text{ldat}], (\text{PP}[\text{vor}]) \rangle \end{array} \right]$$

I do not assume that all clauses must have a subject. With such an assumption one would be forced to stipulate empty elements that function as the subject of subjectless verbs.²⁰ There is no theory external evidence for such empty elements and a theory that uses them has to explain why these empty subjects do not occur with predicates that need an overt (possibly expletive) subject.

1.7 Head-Adjunct Structures

In head-adjunct structures no argument gets saturated. The valence information of the head is identical to the valence information of the mother. Adjunct structures are of type *head-adjunct-structure*, a subtype of *head-non-argument-structure*. The type constraints in (37) ensure the percolation of the SUBCAT value to the mother in a head-adjunct structure since *head-adjunct-structure* is a subtype of *head-non-argument-structure*.

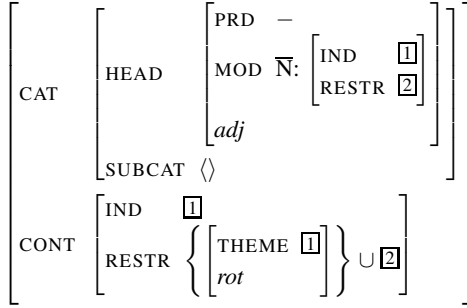
- (37) *head-non-argument-structure* \rightarrow
- $$\left[\begin{array}{l} \text{SYNSEM|LOC|CAT|SUBCAT} \quad \boxed{} \\ \text{HEAD-DTR|SYNSEM|LOC|CAT|SUBCAT} \quad \boxed{} \end{array} \right]$$

Pollard and Sag (1994, Chapter 1.9) assume that an adjunct selects the head it modifies via a feature MODIFIED (MOD). The value of MOD is a feature structure of type *synsem* that describes both syntactic and semantic properties.

(38) shows an example for a non-predicative adjective. This adjective selects an \bar{N} , i. e. a nominal projection that needs a determiner to be a complete NP.

¹⁹The brackets around the PP mark optionality.

²⁰Berman (1999) assumes that the Subject Condition holds for German, i. e., that every German clause has to have a subject. She develops an LFG analysis without an empty element in the constituent structure where the subject is realized in the functional structure as a morphological part of the finite verb.

(38) *rotes* ('red'):

The index of the modified \bar{N} is structure-shared with the index in the semantic contribution of the adjective. The set of restrictions of the modified noun is unioned with the set of the restrictions that are contributed by the adjective (*rot* ([1])).

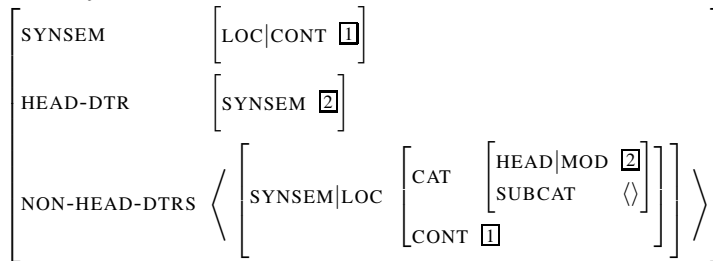
If the adjective is combined with a noun like *Buch* ('book'), the semantics of the phrase *rotes Buch* ('red book') is contained in the adjective under CONT. The Semantics Principle ensures that the semantic content of a head-adjunct phrase is determined by the semantic content of the adjunct:

Principle 2 (Semantics Principle) *In a headed phrase, the CONTENT value is token-identical to that of the adjunct daughter if the phrase is of type head-adjunct-structure, and with that of the head daughter otherwise.*

This principle is encoded in the types *head-non-adjunct-structure* and *head-adjunct-structure*, respectively. The type *head-non-adjunct-structure* was given in (27) already, the type *head-adjunct-structure* is shown in the Head-Adjunct Schema (Schema 2).

Schema 2 (Head-Adjunct Schema)

head-adjunct-structure \rightarrow



The specification of the SUBCAT list of the adjunct daughter is necessary to prevent non-maximal projections of adjuncts from appearing as adjunct daughters. Without this restriction both (39a) and (39b) would be admitted by the grammar.

- (39) a. der Junge auf dem Fahrrad
 the boy on the bicycle
- b. * der Junge auf
 the boy on

The preposition has to be combined with all its complements before it can be used in a head-adjunct structure.

The structure sharing of the SYNSEM value of the head daughter and the MOD value of the adjunct daughter establishes the connection that is necessary for the selection of the head by the modifier. This selection is similar to the selection of an argument by its head that was described in Schema 1.

The feature description in (40) shows the result of combining the lexical entry for *Buch* ('book') in (11) and the one for *rotes* given in (38) as it is licensed by Schema 2.

- (40) *rotes Buch* ('red book'):
- $$\left[\begin{array}{l} \text{CAT} \\ \text{CONT} \end{array} \left[\begin{array}{l} \left[\begin{array}{ll} \text{HEAD} & \textit{noun} \\ \text{SUBCAT} & \langle \text{DET} \rangle \end{array} \right] \\ \text{IND} \quad \boxed{1} \quad \left[\begin{array}{ll} \text{PER} & 3 \\ \text{NUM} & \textit{sg} \\ \text{GEN} & \textit{neu} \end{array} \right] \\ \text{RESTR} \quad \left\{ \left[\begin{array}{ll} \text{THEME} & \boxed{1} \\ \textit{rot} & \end{array} \right], \left[\begin{array}{ll} \text{INST} & \boxed{1} \\ \textit{buch} & \end{array} \right] \right\} \\ \textit{npro} \end{array} \right] \right]$$

The SYNSEM value of *Buch* is unified with the MOD value of *rotes*. The referential index of *Buch* (the $\boxed{1}$ in (11)) is unified with the referential index of *rotes* (the $\boxed{1}$ in (38)). The set of restrictions of *Buch* is unified with the $\boxed{2}$ in the description of *rotes*. This restriction is set unioned with the restriction contributed by the adjective *rotes*.

Having explained head-argument and head-adjunct structures, I now turn to lexical rules. Lexical rules will be used in the analyses developed in Chapters 3–6.

1.8 Lexical Rules

During the last decades there has been a tendency towards lexicalization of linguistic information. The grammar rules that license the combination of material have become more general. It has become even more important to structure the knowledge in the lexicon and to develop devices that make it possible to state generalizations about the lexicon. One such device was already introduced in Section 1.2: types. Multiple inheritance in type hierarchies can be used to cross-classify lexical entries with regard to multiple dimensions. Another important device is lexical redundancy rules. Such rules have been suggested in various frameworks by various people (see for instance Jackendoff, 1975; Williams, 1981a; Bresnan,

1982c; Shieber, Uszkoreit, Pereira, Robinson, and Tyson, 1983; Flickinger, Pollard, and Wasow, 1985; Flickinger, 1987; Copestake and Briscoe, 1992; Meurers, 2000).

A standard example for a lexical rule is the one in (41), which accounts for the passive.

(41) Lexical rule for the personal passive following Kiss (1992):

$$\left[\begin{array}{c} \text{word} \\ \left[\begin{array}{c} \text{SYNSEM|LOC|CAT} \\ \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{VFORM } \textit{part} \\ \text{SUBJ } \langle \text{NP}[\textit{nom}] \rangle \end{array} \right] \\ \text{SUBCAT } \langle \text{NP}[\textit{acc}]_{\boxed{1}} \rangle \oplus \boxed{2} \end{array} \right] \end{array} \right] \end{array} \right] \mapsto \left[\begin{array}{c} \text{word} \\ \left[\begin{array}{c} \text{SYNSEM|LOC|CAT} \\ \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{VFORM } \textit{passive-part} \\ \text{SUBJ } \langle \text{NP}[\textit{nom}]_{\boxed{1}} \rangle \end{array} \right] \\ \text{SUBCAT } \boxed{2} \end{array} \right] \end{array} \right] \end{array} \right]$$

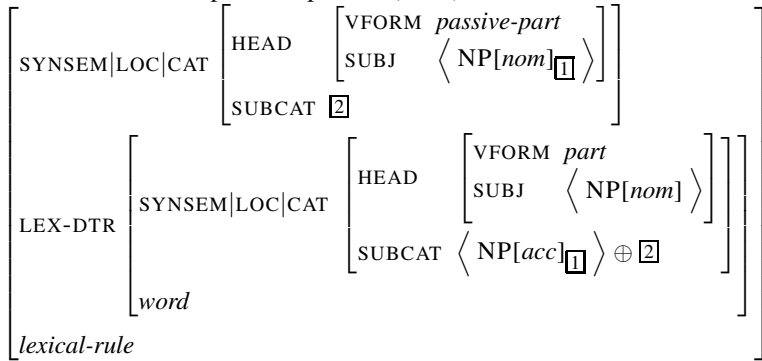
This rule relates a lexical entry of a participle with a subject and an accusative object and possibly other complements to another entry that corresponds to a form that has to be used in passive sentences. The accusative object in the representation on the left-hand side becomes the subject on the right-hand side. The rule says: Whenever there is a lexical entry that matches the left-hand side of the rule, there is also a lexical entry that matches the right-hand side of the rule. Adopting a procedural view for a moment, one can say that the lexical rule produces another entry from the input entry on its left-hand side. The arrow in lexical rules \mapsto is not to be confused with the arrow that is used in implicational constraints (\rightarrow).

Calcagno (1995) and Meurers (1995, 2001) characterize two possible formalizations of lexical rules in the HPSG architecture, on a meta-level (*Meta Level Lexical Rules* = MLR) and as ordinary descriptions (*Description Level Lexical Rules* = DLR). According to their characterization, the proposal of Calcagno and Pollard (1995) and Calcagno (1995) is essentially a MLR approach. Krieger and Nerbonne (1993, Chapter 7.4.1), Copestake and Briscoe (1992), and Meurers (1995; 2000, Chapter 4) adopt the DLR view. In a DLR setting the rule in (41) is equivalent to a structure such as the one in (42) on the following page.

If one follows the MLR approach, the boxed numbers in lexical rules are meta-variables, i. e. variables over descriptions of feature structures instead of variables over feature structures. Boxes with identical numbers have the same value in both structures. In other words, this can be understood as structure sharing between several feature structures.

In the DLR approach, both structures are part of a bigger structure and we have real structure sharing. Another advantage of this approach is that lexical rules are fully integrated into the formalism. Therefore it is also possible to capture

(42) Lexical rule for the personal passive (DLR):



generalizations over classes of lexical rules. A lexical rule can inherit information that it has in common with other lexical rules of an appropriate supertype. In what follows, I therefore assume that lexical rules are Description Level Lexical Rules. Lexical rules in the representation (41) have to be understood as abbreviations for lexical rule descriptions of the form in (42).

A lexical rule applies to all lexical entities that unify²¹ with their left-hand side or their LEX-DTR, respectively. The lexical rule ‘produces’ one or several output entities. In what follows, I assume that lexical rules relate lexemes, i. e. stems to stems, stems to fully inflected signs (words), and fully inflected signs to stems. A stem entry is a lexical sign that contains phonological, syntactic, and semantic information. I subsume open class and closed class lexical signs under the term lexeme.

The signs in (41) are not fully specified. For instance, the CONT value is neither stated in the input sign nor in the output sign. Of course, this information is

²¹The other possibility is to assume that lexical rules apply only to those lexical items that are more specific than, i. e. subsumed by, the left-hand side of the rule (see Meurers (1994, Chapter 4.1.3)).

Hinrichs and Nakazawa (1996) adopt this view and support it by the ungrammaticality of sentences like (i).

- (i) * Das Auto wurde kaufen gekonnt.
the car was buy could

According to Hinrichs and Nakazawa, (i) is excluded since in Hinrichs and Nakazawa’s grammar the lexical entries for modals are less specific than the left-hand side of the lexical rule for passivization, and therefore the passive lexical rule cannot apply to *können* (Hinrichs and Nakazawa treat modals like tense auxiliaries, i. e. as raising verbs. The entries are given in Chapter 2.2.1).

If one assumes a formalization of HPSG following King (1994), lexical rules relate total objects and a subsumption test is of no use since there are no partial representations to which subsumption could sensibly be applied. If one assumes an information-based approach as in Pollard and Sag, 1987 and applies lexical rules under subsumption, they cannot instantiate features that are not present in the input sign. The Complement Extraction Lexical Rule (CELR) has to be formulated in such a way that the input sign is further instantiated. Therefore it cannot be applied under subsumption. If the further instantiation of features in the input sign is omitted, wrong analyses are admitted, as I have shown in Müller, 1997a. See also Müller, 1999a, p. 75 and Müller, 1999b, p. 86–87.

contained in every input sign and it will also be needed in the output sign. It is a convention that all information that is not explicitly mentioned in a lexical rule is carried over unchanged from the input to the output. (41) is just shorthand for a more complex rule. See Meurers, 2001 for the mapping of lexical rule specifications to explicit constraints.

1.9 The German Clause

Having explained the basic immediate dominance schemata and lexical rules, I now turn to an analysis of German clausal patterns. In Section 1.9.1, I will explain verb initial and verb-final sentences. The fronting of constituents will be dealt with in Section 1.9.2.

1.9.1 Verb Placement

In German, three positions of the finite verb can be distinguished. In (43) the verb appears in verb-last (43a), verb-initial (43b), and verb-second position (43c).

- (43) a. daß der Mann die Frau liebt.
 that the man the woman loves
 ‘that the man loves the woman.’
 b. Liebt der Mann die Frau?
 loves the man the woman
 ‘Does the man love the woman?’
 c. Der Mann liebt die Frau.
 the man loves the woman

The verb-second position is usually explained as derived from the verb-first position by the fronting of one constituent. In HPSG this is modeled as a nonlocal dependency.

Basically, there are two options to account for the other two positions of the verb: One can assume flat linearization domains in which the verb can be placed initially or finally, or one can employ a head movement analysis, where a connection is established between the assumed base position of the verb in final position and the fronted verb. The latter analysis is standardly assumed in Government and Binding (GB)²² grammars and its predecessors (see for instance Bierwisch, 1963, p. 34 and Bach, 1960). In the HPSG framework, head movement analyses have been proposed by Kiss and Wesche (1991), Netter (1992, 1998a), Frank (1994), Kiss (1995), and Meurers (2000, p. 206–208).²³ For an early proposal in GPSG see Jacobs, 1986, p. 110. See also Chapter 6.2.5.1 for some discussion.

The flat analysis with flat dominance structures was suggested by Uszkoreit (1987) in the GPSG framework and by Pollard (1996) for HPSG. Kathol (1995, 2000) and I propose an analysis with binary branching dominance structures but

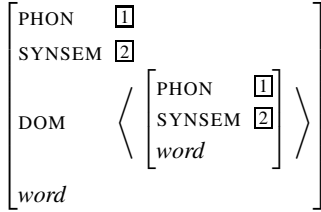
²²On the GB framework in general see Chomsky, 1993.

²³Many of these proposals are influenced by Borsley’s work (1989b) on English.

with flat linearization domains. This approach is based on ideas by Mike Reape (1996, 1992, 1994) and will be explained in the following.²⁴

I assume that every lexical head has the structure in (44).

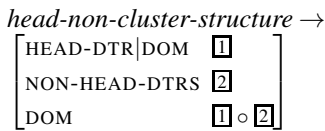
(44) DOMAIN value of lexical heads:



The representation of a head includes a feature DOMAIN that is list valued. In the lexical representation this list contains just one element, one that represents the head. This element has the same PHONOLOGY value ($\boxed{1}$) and identical syntactic and semantic properties ($\boxed{2}$).

If a head is combined with an adjunct or with an argument, the non-head daughter is inserted into the domain of the head.²⁵ (45) shows how this is formalized:

(45) Domain Formation:



The non-head daughter is the adjunct or the argument in the respective type definitions for head-adjunct and head argument structures.

‘ \circ ’ is the *shuffle* relation as used by Reape (1994). The *shuffle* relation holds between three lists A , B , and C , iff C contains all elements of A and B and the order of the elements of A and the order of elements of B is preserved in C . So if a and b are elements of A and a precedes b in A , it has to precede b in C too. To give an example consider the two lists $A = \langle a, b \rangle$ and $B = \langle c, d \rangle$. The result of shuffling A and B is C where C is the disjunction of the elements in (46).

²⁴Linearization accounts have also been proposed for Serbo-Croatian by Penn (1999) and for Warlpiri by Donohue and Sag (1999). Crysmann (1999) uses discontinuous elements in morphology.

For further reading on HPSG-based linearization accounts see also Pollard, Kasper, and Levine, 1992, 1994; Kathol and Pollard, 1995; Müller, 1995, 1997b, 1999a; Richter and Sailer, 1999. Ojeda (1988) developed a GPSG analysis for the verbal complex in Dutch, that uses discontinuous constituents and Dowty (1996) developed an analysis in the framework of Categorical Grammar that also employs the concept of discontinuous constituents.

For a general discussion of accounts for German constituent order see Müller, 1999a, Chapter 21 and Müller, To Appear a.

²⁵Fillers of a filler gap dependencies will also be inserted into the domain of their heads. See Section 1.9.2 on filler gap dependencies.

- (46) $\langle a, b, c, d \rangle$
 $\langle a, c, b, d \rangle$
 $\langle a, c, d, b \rangle$
 $\langle c, a, b, d \rangle$
 $\langle c, a, d, b \rangle$
 $\langle c, d, a, b \rangle$

The possible orderings of the elements in a constituent order domain are restricted by linear precedence rules (LP rules). The result of shuffling *A* and *B* is (46), but if one has a linearization rule in the grammar that states that *a* always has to precede *c*, the last three orderings in (46) are ruled out. The grammar then licenses only the domains in (47) as a combination of *A* and *B*:

- (47) $\langle a, b, c, d \rangle$
 $\langle a, c, b, d \rangle$
 $\langle a, c, d, b \rangle$

The PHON value of a phrase is the concatenation of the PHON values of its domain elements.

- (48) $phrase \rightarrow$
- $$\left[\begin{array}{c} \text{PHON } \boxed{1} \oplus \dots \oplus \boxed{n} \\ \text{DOM } \left\langle \left[\begin{array}{c} \text{PHON } \boxed{1} \\ \text{sign} \end{array} \right], \dots, \left[\begin{array}{c} \text{PHON } \boxed{n} \\ \text{sign} \end{array} \right] \right\rangle \end{array} \right]$$

Figure 5 on the next page shows how the sentence (43a) is analyzed. Instead of the complete signs, only the PHON values are stated in the DOM lists. Strings that are not separated by a colon represent one domain object, i. e. a sign. Note that the permutation of elements is restricted to head domains. The DOM elements of *der Mann*, i. e. *der* and *Mann* cannot be permuted with elements in the domain of *liebt* since they are encapsulated in the sign for *der Mann*. Since the constraint (45) requires that the complete non-head daughter is inserted into the head domain, no other material can intervene between *der* and *Mann*.²⁶

The analysis of (43b) is shown in Figure 6. The dominance structure is identical to the dominance structure of the head-final clause (43a). The only thing that differs is the linearization. For verb-first sentences the verb is serialized to the left of all other (non-fronted) elements, and for verb-last sentences it is serialized to the right of all (non-extraposited) elements. The projection *liebt die Frau* is dis-

²⁶See Reape, 1996, 1992, 1994 for an approach in which domains of different heads are unioned. Reape's approach to verb complexes will be discussed in Chapter 2.3.1. Kathol and Pollard (1995) develop a linearization-based account of extraposition in which extraposed elements may be raised to a higher domain.

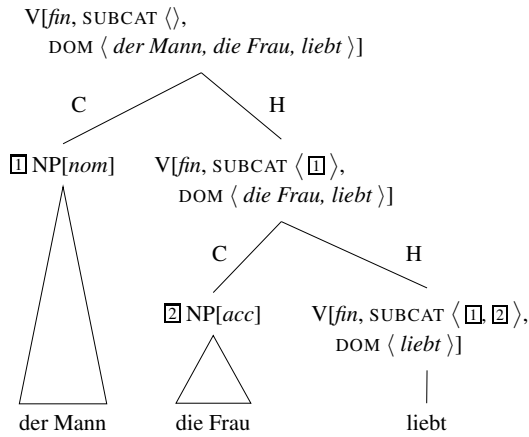


FIGURE 5 Verb-Final Position: *daß der Mann die Frau liebt*.

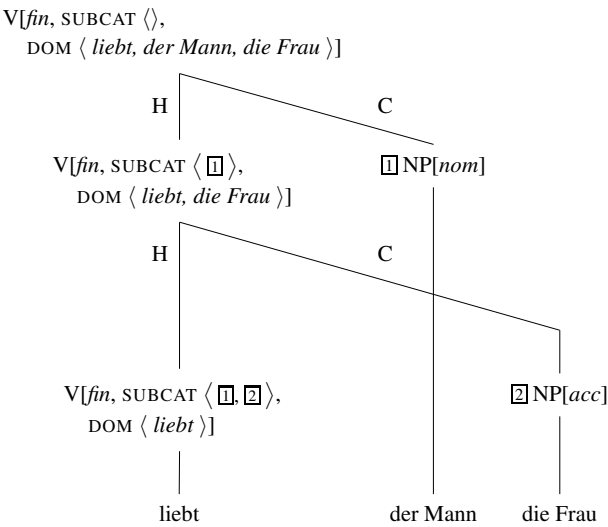


FIGURE 6 Verb Initial Position: *Liebt der Mann die Frau?*

continuous. Since the terminal nodes of the tree in Figure 6 are written in surface order, the tree contains crossing arcs. In what follows, I draw trees that reflect the dominance structure. Figure 7 is equivalent to Figure 6. Trees like the one in

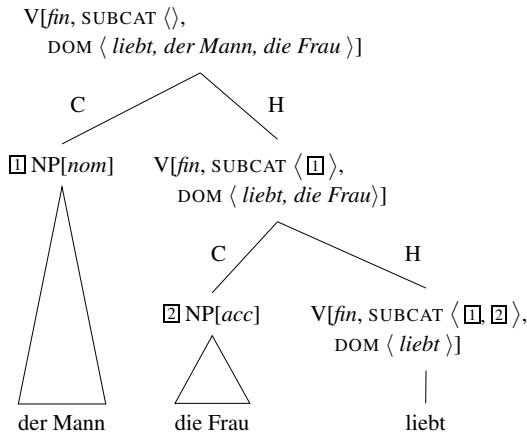


FIGURE 7 Verb Initial Position: *Liebt der Mann die Frau?*

Figure 7 reflect the dominance relations of the involved elements, the order of the terminal nodes does not reflect the surface order. The surface order is represented in the domain lists only.

Note that the permutability of arguments in the *Mittelfeld* as in (49) is easy to explain in such a set-up.

- (49) a. weil niemand die Frau liebt.
 because nobody-NOM the woman-ACC loves
 ‘because nobody loves the woman.’
 b. weil die Frau niemand liebt.
 because the woman-ACC nobody-NOM loves

As was discussed in Section 1.6, subjects can be positioned between other arguments of the verb. In general, there is considerable freedom as far as the serialization of arguments in the *Mittelfeld* is concerned. The orderings in (49) and permutations in the *Mittelfeld* in general are licensed by the grammar since all arguments (and adjuncts) are inserted into the constituent order domain of their head where they may be permuted, provided no linearization constraint is violated. For the sentences in (49) one gets two identical dominance structures. The analyses differ in that the analysis of the last sentence involves discontinuous constituents while all constituents are continuous in the analysis of (49a).

The proper serialization of the verbs is enforced by the following LP rules:

- (50) a. V[INITIAL+] < COMP[]
 b. COMP[EXTRA-] < V[LEX+, INITIAL-]

LP rules can refer to the syntactic function (HEAD, COMP, ADJUNCT, FILLER) a constituent has. If no function is mentioned in the rule specification, then the rule applies to all domain elements it can be unified with. The feature INITIAL has the value + for heads that occur to the left of their adjuncts and arguments and – for heads that occur to the right. Most verbs can appear with both values, but there are back-formations like *uraufführen* (‘to premiere’, ‘to show/stage a film/play for the first time’) that are specified as INITIAL– in the lexicon. I assume that extraposed phrases are marked EXTRA+. The rule (50a) ensures that verbs marked INITIAL+ are serialized to the left of their arguments and (50b) ensures that all non-extraposed arguments of lexical verbs appear to the left of all lexical verbs that are marked INITIAL–. The first rule is only relevant for finite verbs. The second one affects both finite and non-finite verbs.

There is a lot that has to be said about such an analysis of the German clause. But as this is not the purpose of this book, the reader is referred to Kathol, 1995, 2000 and Müller, 1999a, To Appear a.

1.9.2 Verb-Second

German is assumed to be a verb-second language, i. e., in a finite main clause the finite verb is in second position (Erdmann, 1886, Chapter 2.4; Paul, 1919, p. 69, p. 77).²⁷

The *Vorfeld* can be occupied by an adjunct or by an argument. Verb-second sentences are derived from verb-first sentences by the extraction of one element (Thiersch, 1978; Uszkoreit, 1987).

- (51) a. Kenne ich das Buch?
 know I-NOM the book-ACC
 ‘Do I know the book?’
 b. Das Buch kenne ich.
 the book-ACC know I-NOM
 ‘I know the book.’

(51) shows simple cases and one might be tempted to explain the position of the object in (51b) by a different ordering of the domain objects that are contained in the head domain of *kenne* (‘know’) in (51a). Such an analysis was indeed suggested by Nunberg, Sag, and Wasow (1994, p. 513) in connection with idiomatic sentences like (52), but it does not extend to the cases in (53) where elements in the *Vorfeld* depend on heads in different linearization domains.

- (52) *Den Vogel* hat Hans *abgeschossen*.²⁸
 the bird has Hans PART(off).shot ...
 ‘Hans stole the show.’

²⁷A set of examples with more than one constituent in the *Vorfeld* is discussed in Müller, 2000a, 2002c,b. See also page 93 for an example.

²⁸Nunberg, Sag, and Wasow (1994, p. 512) quoted this example from a manuscript of Ackerman and Webelhuth. See also page 280 for corpus examples and more discussion.

- (53) [Über dieses Thema]_i [_S hatte Fritz Peter _{-j} gebeten], [[einen Vortrag _{-i}]
about this topic had Fritz Peter asked a talk
zu halten]_j.²⁹
to hold
'Fritz asked Peter to give a talk about this topic.'

In order to account for these data in an approach purely based on serialization one would have to union the linearization domains of the involved heads which would lead to wrong predictions. Depending on other assumptions made in syntax, one would end up with all words of an utterance in one single domain.

Kathol (1995, Chapter 6.3) formalized a linearization-based approach to short fronting. For frontings like those in (53) he assumes an extraction analysis. In order to block this extraction analysis for short frontings, he integrates a condition into the schema that binds off extracted elements which is supposed to block the extraction analysis for short frontings. However, this condition also blocks cases of partial verb phrase fronting like (54).

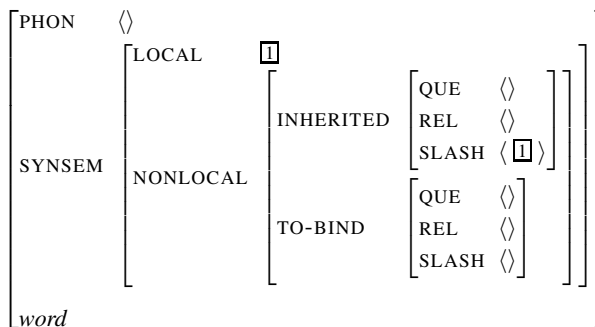
- (54) Arbeiten hat er gesagt, daß er nicht mehr will.
work has he said that he not more wants
'He said that he does not want to work any longer.'

Therefore, I suggest using the same mechanism for short and long frontings, i. e. handling both as extractions.

In the following, the HPSG treatment of nonlocal dependencies will be introduced by the explanation of the analysis of (51b).

In HPSG a special mechanism is used to establish nonlocal dependencies. In Pollard and Sag, 1994, Chapter 4, a nonlocal dependency is introduced by a phonologically empty element (a trace).³⁰

- (55) Trace:



²⁹Hinrichs and Nakazawa, 1989a, p. 21.

³⁰In Chapter 9, Pollard and Sag (1994) introduced a lexical rule for extraction. With such a lexical rule, it is possible to account for nonlocal dependencies without empty elements. An alternative to empty elements and lexical rules is unary branching ID schemata, which I use in Müller, 1999a, Chapters 9, 10, 18. In more recent work on HPSG, relational argument realization principles are assumed for a lexical treatment of extraction (Bouma, Malouf, and Sag, 2001). See also Chapter 6.2.5.1 for some discussion. For purposes of illustration I use the trace throughout the book.

Such a trace can function as an argument or as an adjunct depending on the local context in which it appears. The properties of the object that are represented under SYNSEM|LOCAL are introduced into the list under SYNSEM|NONLOCAL|INHERITED|SLASH. The nonlocal feature QUE is used to describe questions and REL to model certain nonlocal dependencies in the relative phrase of relative clauses. Throughout the book I omit the QUE and REL features since they are irrelevant for the present discussion.

Pollard and Sag's Nonlocal Feature Principle (1994, p. 164) ensures that non-local information is percolated up to the mother node of complex signs.

Principle 3 (Nonlocal Feature Principle) *For each nonlocal feature, the INHERITED value of the mother is the concatenation of the INHERITED values on the daughters minus the TO-BIND value on the head daughter.*

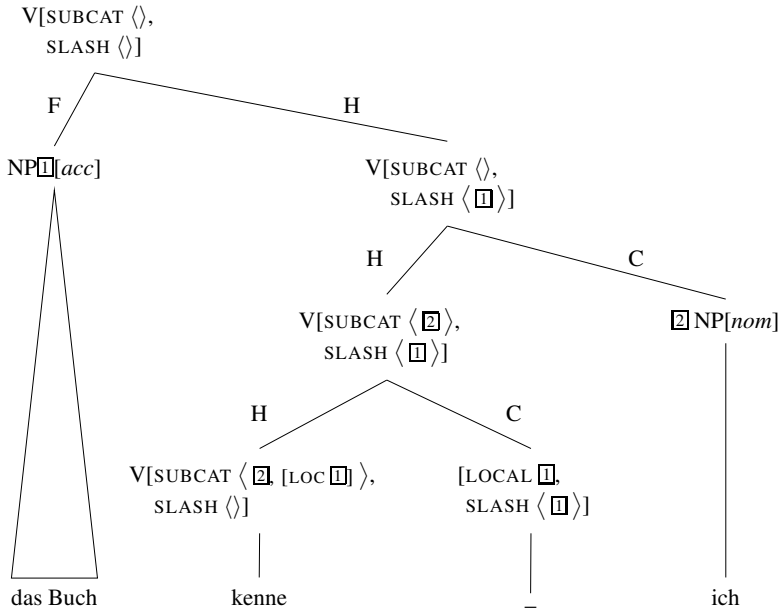
A SLASH element can be bound off by the Head-Filler Schema.

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

$$\begin{array}{l}
 \text{head-filler-structure} \rightarrow \\
 \left[\begin{array}{l} \text{HEAD-DTR|SYNSEM} \\ \text{NON-HEAD-DTRS} \end{array} \left[\begin{array}{l} \text{LOCAL} \\ \text{NONLOC} \end{array} \left[\begin{array}{l} \text{CAT} \left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{VFORM } \textit{fin} \\ \text{INITIAL } + \\ \text{verb} \end{array} \right] \\ \text{SUBCAT } \langle \rangle \end{array} \right] \\ \left[\begin{array}{l} \text{INHER|SLASH } \langle \boxed{} \rangle \\ \text{TO-BIND|SLASH } \langle \boxed{} \rangle \end{array} \right] \end{array} \right] \right] \right] \\
 \left\langle \left[\begin{array}{l} \text{SYNSEM} \left[\begin{array}{l} \text{LOCAL } \boxed{} \\ \text{NONLOC INHER|SLASH } \langle \rangle \end{array} \right] \end{array} \right] \right\rangle \right]
 \end{array}
 \right.$$

This schema describes structures in which a finite sentence with the verb in initial position (INITIAL+) and with an element in INHER|SLASH ($\boxed{}$) is combined with a phrase with appropriate LOCAL properties. In the example (51b), *kenne ich* ('know I') is the finite clause with an appropriate element in SLASH and *das Buch* ('the book') is the filler. Figure 8 on the next page shows the analysis for (51b) in more detail. Note that the schema does not constrain the properties of the filler daughter. These properties are constrained only by the specifications of argument types in the lexicon. In particular, non-maximal projections are allowed to appear as filler daughters. This means that the grammar described here does not adhere to the principles of \bar{X} -theory³¹. This is no loss since the rule schema of \bar{X} -theory does not restrict the power of the grammar if empty elements are allowed (Pullum,

³¹ See Jackendoff, 1977 on \bar{X} -theory.

FIGURE 8 Analysis for: *Das Buch kenne ich.*

1985; Koronai and Pullum, 1990). The grammar that I propose here relies entirely on valence information that is stored in the lexicon. Structure is licensed by this information in connection with very few very general rule schemata. The aim is to avoid unary bookkeeping projections that just raise a bar level without saturating arguments or combining an adjunct or other material with its heads.³²

The domain formation constraint in (45) inserts the filler daughter into the domain of the head in the Head-Filler Schema. The resulting list of domain elements is shown in (56a). It is reasonable to insert the filler into the domain of the head instead of having two opaque domain objects as in (56b) since this facilitates a domain-based account of extraposition (Kathol and Pollard, 1995).

- (56) a. [Den Mann] [kennt] [die Frau].
 the man knows the woman
 ‘The woman knows the man.’
 b. [Den Mann] [[kennt] [die Frau]].

To complete the analysis of single constituent fronting, I give the linearization

³²Muysken (1982) developed a version of \bar{X} -theory that does not need unary projections for raising the bar-level. Instead, he uses a boolean feature MAXIMAL. Maximal projections and non-projecting minor elements have the value +. Since minor elements are listed as MAXIMAL+ in the lexicon, the projection of minor elements by unary rules is not necessary. In the analysis presented here only the valence of lexical and phrasal elements is important. No additional feature that distinguishes maximal from non-maximal projections is needed.

rule in (57) that ensures that the extracted constituent is serialized to the left of the head in a head-filler construction.

(57) FILLER [] < HEAD []

1.10 Summary

In this chapter, I provided the key concepts of a Head-Driven Phrase Structure Grammar for German. I showed how syntactic relations between heads and their dependents are described. The organization of the lexicon using type hierarchies and lexical redundancy rules was discussed. I provided a linearization-based account for the German clause, describing verb-first sentences as one of the two options of serializing the verb: initially or finally. The linearization approach can account for the relatively free constituent order in the *Mittelfeld* since all dependents of a head are inserted into the linearization domain of the head and therefore their permutability is accounted for.

The Predicate Complex, Control, and Raising

In this chapter, I will introduce Bech's terminology (1955) for verbal complexes and coherence fields. I will discuss tests that help to distinguish between coherent constructions (predicate complexes) and incoherent constructions (ordinary head-argument combinations) and I will deal with the difference between control and raising. The control/raising tests will be applied throughout the chapter to show that copula constructions and subject and object predicatives are raising constructions. The tests will also be used in Chapters 4 and 5 to show that depictive predicates stand in a control relation to their antecedent, while resultative constructions are raising constructions.

I will introduce the reader to analyses of coherent verbal constructions that are known from the literature and suggest extensions of these analyses for copula constructions and subject and object predicatives.

2.1 The Phenomena

Bech (1955) wrote an excellent book about non-finite verbs in German. To be able to describe phenomena such as extraposition, the order of elements in the right sentence bracket, the permutation of elements in the *Mittelfeld*, and various scopings of adverbial phrases, he defined the terms *Verbalfeld*, *Restfeld*, *Schlussfeld*, and *Kohärenzfeld* which I will introduce in the following.

2.1.1 The Terminology

Verbal heads may take a verbal projection as a complement. A head requires the element it governs to have certain properties and for verbal complements the form of the verb is among those selected properties. In (58) *darf* determines the verb form of *behaupten* and *behaupten* determines the verb form of *zu kennen*.

- (58) a. weil Karl den Mann zu kennen behaupten darf.
 because Karl the man to know claim may
 ‘because Karl is allowed to claim that he knows the man.’

- b. weil Karl behaupten darf, den Mann zu kennen.
because Karl claim may the man to know

Bech calls a chain of verbs that are in head-argument relation a *subordinative chain*. Another term is *hypotactic chain*. He assigns numbers to all verbs in the chain and marks them with various indices. Indices at the upper right-hand side correspond to the level of embedding. V^1 is the maximally superordinated verb. In (58) the assignments are as follows: $V^1 = \text{darf}$, $V^2 = \text{behaupten}$, and $V^3 = \text{zu kennen}$.

Each verb has a *Verbalfeld* (F), which contains the verb and all non-verbal dependents of the verb and all adjuncts of the verb. For (59) there are two verbal fields: $F^1 = \text{ich bitte ihn}$ and $F^2 = \text{morgen zu kommen}$.

- (59) Ich bitte ihn, morgen zu kommen.
I ask him tomorrow to come
'I ask him to come tomorrow.'

The division into verbal fields is not always unambiguous.

- (60) daß Peter nicht zu kommen versprach.
that Peter not to come promised
'That Peter did not promise to come.'
'That Peter promised not to come.'

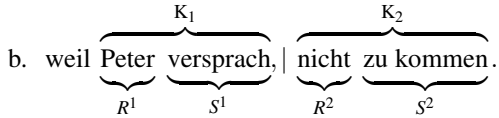
For (60) the following partitions into verbal fields are possible: $F^1 = \text{Peter} + \text{nicht} + \text{versprach}$, $F^2 = \text{zu kommen}$ or $F^1 = \text{Peter} + \text{versprach}$, $F^2 = \text{nicht zu kommen}$. The first partition belongs to the first translation where the negation scopes over *versprach* ('promised') and the second one corresponds to the second translation where the negation scopes over *kommen* ('come').

Furthermore, Bech introduces the term *Kohärenzfeld* (coherence field). The abbreviation is *K*. A coherence field is partitioned into a *Schlußfeld* (S) and a *Restfeld* (R). The *Schlußfeld* is always located to the right of the *Restfeld*. Usually the *Schlußfeld* contains all verbs of a coherence field (61a). An exception is the finite verb in the left sentence bracket, if there is one (61b).

- (61) a. weil $\underbrace{\text{Peter nicht}}_R \underbrace{\text{zu kommen versprach}}_S$.
b. $\underbrace{\text{Peter versprach nicht}}_R \underbrace{\text{zu kommen}}_S$.

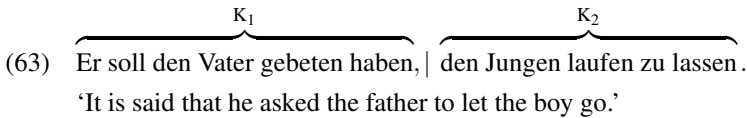
A hypotactic chain of verbal fields may consist of one (62a) or several (62b) coherence fields. Every coherence field contains at least one verbal field. Bech separates coherence fields by a '|'. This symbol stands for an intonational break.

- (62) a. weil $\underbrace{\text{Peter nicht}}_R \underbrace{\text{zu kommen versprach}}_S$.



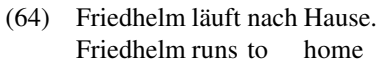
A coherence field is a group of verbal fields. It contains all parts of the verbal fields. A coherence field is one closed topological unit. An element of one coherence field can never appear between two elements of another coherence field. Elements of a verbal field can be placed between elements of another verbal field, though (see the partition of (60) where the negation scopes over *versprach* ('promise')).

Two verbal fields which are part of the same hypotactic chain are said to be coherent, iff they are part of the same coherence field and incoherent, iff they are part of two different coherence fields. The sentence (63) consists of two coherence fields.

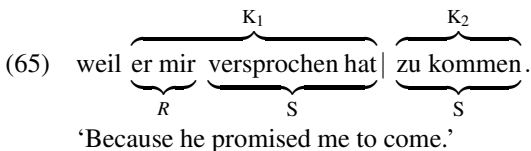


$F^1 = \text{er soll den Vater}$, $F^2 = \text{haben}$, $F^3 = \text{gebeten}$, $F^4 = \text{den Jungen zu lassen}$, $F^5 = \text{laufen}$. $F^1 + F^2 + F^3$ and $F^4 + F^5$ are coherence fields, respectively. None of the fields F^1 , F^2 , F^3 is coherent with another field outside of this group. The same holds for F^4 and F^5 .

Bech distinguishes between finite and non-finite coherence fields. A coherence field is finite, iff it contains a finite verb. The *Schlußfeld* of finite coherence fields may be empty:



In non-finite coherence fields the *Restfeld* may be empty (65). An example is K_2 in (65).



2.1.2 Coherent vs. Incoherent Constructions

Having introduced the terminology in the last section, I will now explain the classical tests that help to distinguish between coherent and incoherent constructions.

2.1.2.1 Scope of Adjuncts

Adjuncts can only scope over verbal elements that are in the same coherence field. The sentence in (66) has the three readings that are given in (67) and also in the

translations above, if all three verbs are members of the same coherence field, i. e., if there are no intonational markings that suggest a division into two coherence fields.

- (66) $\overbrace{\text{Karl darf nicht zu schlafen versuchen.}}^K$
 ‘Karl is not allowed to try to sleep.’
 ‘Karl is allowed to not try to sleep.’
 ‘Karl is allowed to try to not sleep.’
- (67) a. dürfen(versuchen(\neg schlafen(karl)))
 b. dürfen(\neg versuchen(schlafen(karl)))
 c. \neg dürfen(versuchen(schlafen(karl)))

In (68) and (69) we have two coherence fields. The number of readings per sentence is reduced accordingly.

- (68) $\overbrace{\text{Karl darf nicht versuchen}}^{K_1} \overbrace{\text{zu schlafen.}}^{K_2}$
 ‘Karl is not allowed to try to sleep.’
 ‘Karl is allowed to not try to sleep.’
- (69) $\overbrace{\text{Karl darf versuchen,}}^{K_1} \overbrace{\text{nicht zu schlafen.}}^{K_2}$
 ‘Karl is allowed to try to not sleep.’

In (68) the negation can only scope over *darf* and *versuchen* since *schlafen* is in a different coherence field. In (69) on the other hand, the negation can only scope over *schlafen* since this is the only element in the coherence field in which the negation is located.

2.1.2.2 Permutation in the *Mittelfeld*

The sentence in (70) is partitioned into topological fields as is shown in (71).

- (70) weil es ihm jemand zu lesen versprochen hat.¹
 because it-ACC him-DAT somebody-NOM to read promised has
 ‘because somebody promised him to read it.’

As is clear from the translation, *ihm* is an object of *versprechen* and *es* is the object of *lesen*.

- (71) weil $\underbrace{\text{es ihm jemand}}_R \overbrace{\text{zu lesen versprochen hat.}}^K$
 $\underbrace{\hspace{10em}}_S$

¹ See Haider, 1986b, p. 110; 1990a, p. 128.

In (70) we have one single coherence field, the verbs are located in one *Schlußfeld* and the complements of the verbs in the *Schlußfeld* are scrambled: the order of the NPs in the *Restfeld* is such that the combination of a verb with its complement does not result in a continuous string. In (70) the order of the elements corresponds to the order of the verbs in the *Schlußfeld*, but this is not necessarily the case, as (72) shows.

- (72) weil ihm den Aufsatz jemand zu lesen versprochen
 because him-DAT the essay-ACC somebody-NOM to read promised
 hat.
 has
 'because somebody promised him to read the essay.'

Sometimes the scrambling of elements in coherent constructions is restricted by performance factors. I will come back to this issue below when I discuss specific instances of coherent constructions.

2.1.2.3 Intraposition

In coherent constructions, verbs form a verbal complex that normally cannot be interrupted by nonverbal material except in cases that are similar to the so-called *Oberfeldumstellung*.² Since the *Oberfeldumstellung* is not relevant for the discussion of the phenomena handled in this book, I will ignore it here. The examples in (73a,b) are ungrammatical since modal verbs like *dürfen* and the future auxiliary *werden* obligatorily construct coherently. (73c) on the other hand is possible. (73c) is an incoherent construction.

- (73) a. * daß Karl schlafen nicht darf.
 that Karl sleep not may
 Intended: 'that Karl is not allowed to sleep.'
 b. * daß Karl schlafen nicht wird.
 that Karl sleep not will
 Intended: 'that Karl won't sleep.'

² Examples of such interruptions are given in (i):

- (i) a. daß du uns hast die Schlacht gewinnen helfen.
 that you us have the battle win help
 'that you helped us win the battle.' (Brecht, quoted from Haftka, 1981, p. 723)
 b. daß er es nicht hat freiwillig aufgeben wollen.
 that he it not has.of.his.own.free.will give.up wanted
 'that he did not want to give it up of his own free will.' (Haider, 1982, p. 32)
 c. Dabei bietet dieses Thema eine Fülle von Ansätzen, die Ihr hättet
 there.by offers this subject an abundance of approaches which you had
 kritischer beleuchten können: [...] more.critically illuminate could
 'Yet, this subject offers an abundance of approaches which you could have highlighted somewhat more critically.' (taz, 21.03.1997, p. 14)

- c. daß Karl zu schlafen nicht versucht.
 that Karl to sleep not tries
 ‘that Karl does not try to sleep.’

The same situation can be observed within relative clauses. Verbs in incoherent constructions allow pied-piping. The term pied-piping was coined by Ross (1967, p. 108). It refers to situations in relative clauses when a phrase that contains more material than just the relative pronoun is dislocated. In (74a) the *zu*-infinitive VP is located at the left periphery of the relative clause. Pied-piping is impossible with verbs that obligatorily construct coherently.

- (74) a. den Keks, den zu essen Karl versucht
 the cookie that to eat Karl tries
 b. * den Keks, den essen Karl darf / wird
 the cookie that eat Karl may will
 c. * den Keks, den gegessen Karl hat
 the cookie that eaten Karl has

There is an on-going debate about these pied-piping constructions with several different structures assigned to various instances of pied-piping examples like the one in (74a) (see for instance Riemsdijk, 1985, 1994; Haider, 1985b; Grewendorf, 1986; Trissler, 1988; De Kuthy, 1996; 1999). Basically, two structures can be assumed for sentences similar to (74a): The complete infinitive phrase containing the relative word is the relative phrase and is extracted from the remaining clause, or the infinitive phrase is located at the left periphery of the *Mittelfeld* and the relative pronoun is extracted out of this VP. In Müller, 1999a, Chapter 10.7, I demonstrate that both structures are needed. In either case, the infinitive VP is separated from other verbs in the right sentence bracket. It is of no relevance for the coherence/incoherence test whether the infinitive VP is extracted as one phrase or intraposed in the *Mittelfeld* with further extraction of the relative pronoun.

2.1.2.4 Extraposition

If a matrix verb allows for an incoherent construction, it is possible to extrapose the projection of the embedded verbal head. An example is shown in (75).

- (75) Karl hat versucht, das Buch zu lesen.
 Karl has tried the book to read
 ‘Karl tried to read the book.’

The verb *versuchen* can construct incoherently and in (75) the phrase *das Buch zu lesen* is a separate coherence field.

Not all infinitives with *zu* can be extraposed. So for instance, the raising verb *scheinen* obligatorily constructs coherently. The verb that is embedded under *scheinen* is always realized in the same coherence field.

- (76) a. weil Karl das Buch zu lesen scheint.
 because Karl the book to read seems
 ‘because Karl seems to read the book.’
 b. * weil Karl scheint das Buch zu lesen.
 because Karl seems the book to read

The extraposition of bare infinitives (77) and participles (78) is impossible:

- (77) a. daß Karl das Buch lesen wird.
 that Karl the book read will
 ‘that Karl will read the book.’
 b. * daß Karl wird das Buch lesen.
 that Karl will the book read
- (78) a. daß Karl das Buch gelesen hat.
 that Karl the book read has
 ‘that Karl read the book.’
 b. * daß Karl hat das Buch gelesen.
 that Karl has the book read

2.1.2.5 Fronting

The fronting of *zu*-infinitive VPs is always possible.

- (79) Das Buch Maria zu geben hat Karl versucht.
 the book Maria to give has Karl tried
 ‘Karl tried to give the book to Maria.’

As with extraposition and intraposition, this fronted VP is a separate coherence field.

In addition to such frontings, frontings of verbs and of projections of verbs that can neither be intraposed nor extraposed is possible. The future auxiliary *wird* obligatorily constructs coherently. In (80) we have various kinds of frontings:³ In (80a) the embedded verb is fronted and the elements that depend on this verb, i. e., its direct and indirect object stay behind in the *Mittelfeld*. In (80b) the accusative object is fronted with the verb and the dative object stays behind, in (80c) the dative object is fronted and the accusative object stays behind, and in (80d) both objects are fronted together with the verb.

- (80) a. Erzählen wird er seiner Tochter ein Märchen.
 tell will he-NOM his daughter-DAT a fairytale-ACC
 ‘He will tell his daughter a fairytale.’

³See Haftka, 1981, p. 720–721 for examples that are similar to (80b,c). Haftka (1981, p. 721), Haider (1982, p. 16), Grewendorf (1983, p. 127), Wegener (1990), and Zifonun (1992, p. 253, footnote 3) exclude examples like (80c). As was shown on page 10, frontings of partial phrases that contain a dative object is possible. For more data see Müller, 1999a, Chapter 18.

- b. Ein Märchen erzählen wird er seiner Tochter.
a fairytale-ACC tell will he-NOM his daughter-DAT
- c. Seiner Tochter erzählen wird er das Märchen.
his daughter-DAT tell will he-NOM the fairytale-ACC
- d. Seiner Tochter ein Märchen erzählen wird er.
his daughter-DAT a fairytale-ACC tell will he-NOM

Note that the fronted material constitutes a separate scope domain. This is shown by sentences like (81): while we have two readings in (81a), in (81b) there is only the one where the *nicht* ('not') scopes over *gewinnen* ('win').

- (81) a. weil er das Rennen nicht gewinnen darf.
because he the race not win may
'because he is not allowed to win the race.'
'because he is allowed to not win the race.'
- b. Das Rennen nicht gewinnen darf er.
the race not win may he
'He is allowed to not win the race.'

It is an interesting property of such frontings that the parts of the verbal complex that are fronted may be arbitrarily complex, but it is impossible to front things from the middle of the verbal complex, i. e. elements that embed another verbal complement that has to be realized in a coherent construction.⁴ Take for instance (82). *müssen* embeds the infinitive *erzählen*. *müssen* is embedded under *wird*. (82b) shows that *müssen* can be fronted together with the embedded *erzählen* and (82c) shows that *müssen* cannot be fronted without the embedded verbal element.

- (82) a. weil er ihr ein Märchen erzählen müssen wird.
because he her a fairytale tell must will
'because he will have to tell her a fairytale.'
- b. Erzählen müssen wird er ihr ein Märchen.
tell must will he her a fairytale
- c. * Müssen wird er ihr ein Märchen erzählen.
must will he her a fairytale tell

As De Kuthy and Meurers, 2001 note, this is another difference between coherent and incoherent constructions since in incoherent constructions, the embedded infinitive can stay behind, as the following examples show.

- (83) a. Versuchen wird er, das Pferd zu verkaufen.
try will he the horse to sell
'He will try to sell the horse.'

⁴Haftka (1981, p. 720–721) provides examples with a similar structure that show impossible frontings in cases that will be discussed in the following chapters.

- b. Empfehlen wird er ihr, das Pferd zu verkaufen.
 advise will he her the horse to sell
 'He will advise her to sell the horse.'

This difference could be due to the extraposition of VP complements of verbs that construct incoherently that has already been discussed in the previous section. As examples like (84) show, it is possible to extrapose constituents out of partial VPs:

- (84) [Eine Geschichte erzählen] wird uns der Mann jetzt gleich,
 a story-ACC tell will us-DAT the man-NOM now immediately
 die viele von Ihnen erstaunen wird.⁵
 that many of you astonish will
 'The man will now tell you a story that will astonish you.'

To exclude the possibility of extraposition one has to construct sentences in which the right sentence bracket is occupied. Kathol (1998, p. 230) provides such an example:

- (85) ? Versprochen wird er ihr wohl den Wagen zu waschen nicht haben.
 promised will he her probably the car to wash not have
 'He will probably not have promised her to wash the car.'

Unfortunately such sentences are difficult to process, but examples like (83) show that there is a clear difference between verbs that obligatorily construct coherently and verbs that allow for incoherent constructions.

It is not true that the stranding of auxiliaries is impossible, as is claimed by Stiebels and Wunderlich (1994, p. 942). Their sentence (86a) is odd due to general principles of information structure and not due to general prohibitions on frontings.

- (86) a. § Gegessen wird er wohl den Braten haben.
 eaten will he probably the roast have
 'He probably will have eaten the roast. (as opposed to having eaten something else)'
 b. Gegessen wird er den Braten wohl haben.
 eaten will he the roast probably have
 'He probably will have eaten the roast. (as opposed to not having eaten it)'

With a different scope of *wohl* the sentence is fine, as in (86b).

Similarly, Haider (1993, p. 283) claims that complements of non-finite *haben* are not frontable.

⁵Müller, 1999a, p. 217.

- (87) a. Im Radio gehört hat er die Nachricht.
 in.the radio heard has he the news
 ‘He heard the news on the radio.’
- b. * Im Radio gehört glaubt er die Nachricht zu haben.
 in.the radio heard believes he the news to have
 Intended: ‘He believes he heard the news on the radio.’

The contrast between (87a) and (87b) is clear, but Meurers (2000, p. 93) argues convincingly that grammatical examples like (88) show that the ungrammaticality does not result from *haben* itself, but must be due to other factors.

- (88) Im Radio gehört wird er die Nachricht sicher nicht haben.
 in.the radio heard will he the news probably not have
 ‘He probably did not hear the news on the radio.’

The *Principle of Separability* that Stiebels and Wunderlich (1994, p. 942) formulate to rule out the fronting of a base verb of a particle verb combination without its particle rules out grammatical sentences like (82b) and (86) and therefore has to be dismissed. The discussion in the following chapters will show that impossible frontings like the one in (82c) are due to a general constraint on frontings of parts of predicate complexes.

2.1.3 Raising and Control

The partition of verbs into those that may enter an incoherent construction and those that always construct coherently is one important dimension of classifying verbs, another one is the partition of verbs with a verbal complement into raising and control verbs. In the following section, I discuss the differences between raising and control verbs.

2.1.3.1 Expletive Predicates and Subjectless Constructions

The most crucial difference between raising and control verbs is that the latter have an argument that is assigned a semantic role by the control verb and that is coreferent with the subject of the embedded predicate, whereas raising verbs do not assign a thematic role to an argument of the embedded predicate. For instance, the control verb *versuchen* (‘try’) assigns a semantic role to its subject. This subject is coreferent with the subject of the embedded verb:

- (89) a. weil Karl zu schlafen versucht.
 because Karl to sleep tries
 ‘because Karl tries to sleep.’
- b. versuchen(Karl, schlafen(Karl))

The raising verb *scheinen* on the other hand does not assign a semantic role to its subject.

- (90) a. weil Karl zu schlafen scheint.
 because Karl to sleep seems
 ‘because Karl seems to sleep.’
 b. scheinen(schlafen(Karl))

That *scheinen* does not assign a role becomes obvious when predicates that have an expletive subject are embedded under *scheinen*:

- (91) a. weil es zu regnen scheint.
 because it-EXPL to rain seems
 ‘because it seems to rain.’
 b. scheinen(regnen)

While the embedding of expletive predicates under raising verbs is fine, control verbs do not embed expletive predicates as is shown by (92).

- (92) * weil es zu regnen / hageln versucht.
 because it-EXPL to rain hail tries
 Intended: ‘because it tries to rain / hail.’

Another difference that follows from the fact that control verbs require the subject of the embedded verb to be coreferent with one of their arguments is that subjectless constructions cannot be embedded under control verbs. The verb *grauen* (‘to dread’) in (93a) only takes a dative and a prepositional complement. Optionally it can appear with a subject, but this subject is an expletive element. As the example in (93b) shows, the embedding of *grauen* under a control verb is impossible. This demonstrates that both the variant with the expletive subject and the subjectless variant cannot be controlled.

- (93) a. weil (es) dem Student vor der Prüfung graut.
 because it the student-DAT before the exam dreads
 ‘Because the student dreads the exam.’
 b. * Der Professor versucht, dem Student vor der Prüfung zu
 the professor tries the student before the exam to
 grauen.
 dread
 Intended: ‘The professor tries to make the student dread the exam.’

Embedding under raising verbs is possible though:

- (94) weil (es) dem Student vor der Prüfung zu grauen schien.
 because it-EXPL the student before the exam to dread seemed
 ‘because the student seemed to dread the exam.’

The example in (95b) shows another subjectless construction that is the result of the passivization of the intransitive verb in (95a): (95b) is an instance of the

so-called impersonal passive. As (95c) shows, such subjectless constructions are similar to subjectless verbs like *grauen* in that they cannot be embedded under control verbs.

- (95) a. Der Student arbeitet.
the student works
- b. weil gearbeitet wurde.
because worked was
'because work was being done.'
- c. * Der Student versucht, gearbeitet zu werden.
the student tries worked to get
Intended: 'The student tries to work.' or 'The student tries to get the work done.'

The embedding under raising verbs is possible, as (96) shows.

- (96) Dort schien noch gearbeitet zu werden.
there seemed yet working to get
'Work seemed to still be being done there.'

2.1.3.2 Identity vs. Coindexing

Another difference between control and raising predicates is a syntactic one: For raising predicates it can be argued that the raised element has identical syntactic properties (for instance, part of speech and case) as far as the embedded predicate and the matrix predicate are concerned. As I will show in the following, in the case of control predicates, the syntactic properties of the controlling element may differ from those of the controlled element. Only the information about the discourse referent to which the controller and the controllee refer is identified, i. e., they are coindexed.

The verb *sehen* is a raising verb, which is uncontroversial for the cases in (97), in which a weather verb and an impersonal construction are embedded (Reis, 1976a, p. 66; Höhle, 1978, p. 70).

- (97) a. Karl sah es regnen.
Karl saw it-EXPL rain
- b. ? Ich sah ihm schlecht werden.
I saw him-DAT feel.sick become
'I saw him getting sick.'

For sentences like (97), one can assume that the subject of the embedded predicate is identical to the object of the matrix verb. If, as in (97b), the embedded predicate does not have a subject, the matrix verb does not have an accusative object. One can capture this by stating that if the embedded predicate has a subject, it is identified with the object of the higher predicate. If the embedded predicate does

not have a subject, this does not matter. In the HPSG framework introduced in the previous chapter, the situation in (97a) is modeled by identifying the element in the SUBJ list of the embedded verb with an element in the SUBCAT list of the matrix verb. Since *schlecht werden* in (97b) has an empty SUBJ list, nothing is raised from SUBJ.

The question now is, whether the same treatment is appropriate for control constructions, or whether there is a difference between the sentences in (98), where the first is a raising sentence and the second one a control sentence.

- (98) a. Der Wächter sah den Einbrecher und seinen Helfer
 the watchman saw the burglar-ACC and his accomplice-ACC
 weglaufen.
 run.away
 ‘The watchman saw the burglar and his accomplice run away.’
 b. Der Wächter erlaubte dem Einbrecher und seinem
 the watchman allowed the burglar-DAT and his
 Helfer wegzulaufen.
 accomplice-DAT away.to.run
 ‘The watchman allowed the burglar and his accomplice to run away.’

erlauben is an object control verb, i.e., the dative object and the logical subject of the controlled infinitive are coreferent. On the basis of the data in (97), it seems to be reasonable to assume the identity of the subject of *weglaufen* and *den Einbrecher und seinen Helfer* in raising constructions like (98a). The question is whether such an identity would also make sense for (98b). The answer is no since it can be shown that the case of *den Einbrecher und seinen Helfer* differs from the case of the non-overt subject of *wegzulaufen*. How the case of the non-overt elements can be determined is discussed in the following.

Höhle (1983, Chapter 6) provides a test that makes it possible to determine the case of non-realized dependents. The adverbial phrase *ein- nach d- ander-* (‘one after the other’) refers to a plural antecedent. The phrase has to agree with its antecedent in gender and case. In (99) we have simple sentences in which *ein- nach d- ander-* refers to subjects and objects with different gender.

- (99) a. [Die Türen]_i sind [eine nach der
 the doors-NOM-PL-FEM are one-NOM-FEM after the-DAT-FEM
 anderen]_i kaputt gegangen.
 other broke went
 ‘The doors broke one after another.’
 b. [Einer nach dem anderen]_i haben wir_j die
 one-NOM-MAS after the-DAT-MAS other have we-NOM the
 Burschen runtergeputzt.
 lads-ACC down.cleaned
 ‘We took turns in bringing the lads down a peg or two.’

- c. [Einen nach dem anderen]_i haben wir [die
 one-ACC-MAS after the-DAT-MAS other have we-NOM the
 Burschen]_i runtergeputzt.
 lads-ACC-PL-MAS down.cleaned
 ‘One after the other, we brought the lads down a peg or two.’
- d. Ich ließ [die Burschen]_i [einen nach dem
 I let the lads-ACC-PL-MAS one-ACC-MAS after the-DAT-MAS
 anderen]_i einsteigen.
 other enter
 ‘I let the lads get in (get started) one after the other.’
- e. [Uns]_i wurde [einer nach der anderen]_i der Stuhl
 us-DAT was one-DAT-FEM after the-DAT-FEM other the chair
 vor die Tür gesetzt.
 before the door set
 ‘We were given the sack one after the other.’

In (100) the phrase *ein- nach d- ander-* refers to dative or accusative objects of embedded infinitives in incoherent constructions.

- (100) a. Er hat uns gedroht, [die Burschen]_i demnächst
 he has us threatened the lads-ACC-PL-MAS soon
 [einen nach dem anderen]_i wegzuschicken.
 one-ACC-MAS after the-DAT-MAS other away.to.send
 ‘He threatened us that soon he would send the lads away one after the other.’
- b. Er hat angekündigt, [uns]_i dann [einer nach der
 he has announced us-DAT then one-DAT-FEM after the-DAT-FEM
 anderen]_i den Stuhl vor die Tür zu setzen.
 other the chair before the door to set
 ‘He announced that he would then sack us one after the other.’
- c. Es ist nötig, [die Fenster]_i, sobald es geht,
 it is necessary the windows-ACC-PL-NEU as.soon it goes
 [eins nach dem anderen]_i auszutauschen.
 one-ACC-NEU after the-DAT-NEU other to.exchange
 ‘It is necessary to exchange the windows one after the other, as soon as possible.’

In (101), the *ein- nach d- ander-* also belongs to the infinitive. Although *ein- nach d- ander-* has nominative case, this phrase is not the subject, as the subject is never realized as a dependent of a verb in infinitive form. But *ein- nach d- ander-* refers to the subject of the infinitive. In (101a) the case of the controller NP *den Burschen*

is dative, while the case of the controlled subject of the *zu*-infinitive is nominative, as can be inferred from the case of *einer nach dem anderen*.⁶

- (101) a. Ich habe [den Burschen]_i geraten, im Abstand von
 I have the lads-DAT-PL-MAS advised in.the distance of
 wenigen Tagen [einer nach dem anderen]_i zu
 few days one-NOM-MAS after the-DAT-MAS other to
 kündigen.
 hand.in.their.notice
 'I advised the lads to hand in their notice one after the other, at intervals of a few days.'
- b. [Die Türen]_i sind viel zu wertvoll, um
 the doors-NOM-PL-FEM are much too precious COMPL
 [eine nach der anderen]_i verheizt zu werden.
 one-NOM-FEM after the-DAT-FEM other burnt to be
 'The doors are much too precious to be burnt one after the other.'
- c. [Wir]_i sind es leid, [eine nach der
 we-NOM-PL are it_{extra} tired one-NOM-FEM after the-DAT-FEM

⁶Adam Przepiórkowski informed me that in Polish there is a class of 'case agreeing' elements which take the instrumental case when they refer to unrealized subjects, but there are other 'case agreeing' elements which take dative in such cases. So, if these elements were used to determine the case of the unexpressed subject, we would come to the conclusion that unexpressed subjects are both instrumental and dative in Polish. On the basis of the Polish data one could argue that unexpressed subjects are caseless and that when they refer to a caseless NP, the adverbial phrases are nominative (for German) or dative or instrumental (for Polish).

Hennis (1989) discusses data from Malayalam, which is a language with both nominative and dative subjects. Sentences in which a VP with nominative subject is coordinated with a VP with dative subject are ungrammatical. She concludes from this that the unexpressed subject must have case. Adam Przepiórkowski informed me that this does not hold for Polish, i. e., one can coordinate a VP with an adverbial phrase in the instrumental with a VP with an adverbial phrase in the dative.

Andrews (1982), Neidle (1982), and Bresnan (1982a, p. 396) discuss similar data from Icelandic and Russian and suggest analyzing case agreeing predicative elements in these languages parallel to raising constructions, i. e. with the subject of the predicate identified with the antecedent element (functional or grammatical control in their terminology) and that the non-agreeing predicative elements parallel control structures (anaphoric control in their terminology) with the adjunct having a case that is independent of the case of its subject.

Neidle (1982, p. 404) discusses data from Russian and follows Comrie in assuming that the subjects of nontensed clauses are dative. Secondary predicates that are adjuncts agree in case with the dative subject. She argues that predicative phrases in the instrumental should be treated as complements and that these complements do not agree in case with their antecedent. If such an analysis can be extended to the Polish data, the fact that there are dative and instrumental elements referring to a non-overt subject is unproblematic.

The data from Russian, Polish, and Icelandic show that languages differ in the way they assign case to their (unexpressed) subjects. Since I do not know of any further tests that could be applied for German, I will stick to the assumption that unexpressed subjects have nominative case. Even if one assumed a caseless subject, this subject could not be identical with the case bearing NP argument of a control verb.

anderen]_i den Stuhl vor die Tür gesetzt zu kriegen.
 other the chair before the door set to get
 'We are tired of being given the sack one after the other.'

This shows that the subject of the embedded infinitive cannot be identical to the object of the control verb. Furthermore, it is interesting to note that if one changes the form of the pronoun in *ein- nach d- ander-* to the female form, the meaning of the sentence changes.

- (102) Ich habe [den Burschen]_i geraten, im Abstand von wenigen
 I have the lads-DAT-MAS-PL advised in.the distance of few
 Tagen [einer nach der anderen]_{*i} zu kündigen.
 days one-DAT-FEM after the-DAT-FEM other to fire
 'I advised the lads to fire (them) one after the other, at intervals of a few days.'

(102) is only grammatical if the *ein- nach d- ander-* is not an adverbial that refers to the non-overt subject, but rather a dative object of *kündigen* ('to fire'). This is accounted for if control is described as coindexing of the controlling XP and the non-overt subject of the controlled infinitive. So the index of *den Burschen* is identical to the index of the non-overt subject. Therefore, no adverbial phrase that is sensitive to gender and does not match can be realized in the domain of the controlled infinitive while referring to the non-overt subject.

The case agreeing properties of the adjunct phrase actually help to disambiguate scopings in coherent constructions.

- (103) a. Der Wächter erlaubte den Einbrechern einem nach dem
 the watchman allowed the burglars-DAT one-DAT after the
 anderen wegzulaufen.
 other away.to.run
 'The watchman allowed the burglars one after the other to run away.'
 b. Der Wächter erlaubte den Einbrechern einer nach dem
 the watchman allowed the burglars-DAT one-NOM after the
 anderen wegzulaufen.
 other away.to.run
 'The watchman allowed the burglars to run away, one after the other.'

In (103a) only the scope over the main verb *erlauben* is possible since the adverbial phrase agrees with an object of this verb, and in (103b) only the scope over *weglaufen* is possible since the adverbial phrase agrees with the non-overt subject of *weglaufen*.

The interesting thing now is that the situation is different with raising predicates.⁷

⁷As Kordula De Kuthy has pointed out to me, the sentence (104b) seems to improve if a pronoun

- (104) a. Der Wächter sah den Einbrecher und seinen Helfer
 the watchman saw the burglar-ACC and his accomplice-ACC
 einen nach dem anderen weglaufen.
 one-ACC after the other run.away
 'The watchman saw the burglar and his accomplice run away, one after the other.
- b. * Der Wächter sah den Einbrecher und seinen Helfer
 the watchman saw the burglar-ACC and his accomplice-ACC
 einer nach dem anderen weglaufen.
 one-NOM after the other run.away

With raising predicates, the nominative adverbial phrase is ungrammatical, which indicates that the subject of the embedded predicate is actually identical to the object of the matrix verb, i. e., both syntactic and semantic information is shared and therefore both the object of the matrix verb and the subject of the embedded predicate are accusative.

Finally, examples like (105) show that identity really would be inappropriate for handling control constructions since in (105) the controlling element (*von denen* 'from whom') is a prepositional phrase, but the subject of the controlled predicate is an NP.⁸

- (105) Die Lehrer, von denen erwartet wird, diesen aufgeputschten
 the teachers from whom expected is these doped.up
 Kohlehydratkolossen etwas beizubringen, verdienen jedermanns
 carbohydrate.giants something.to.teach deserve everyone's
 Anteilnahme.⁹
 sympathy
 'The teachers who are expected to teach these doped up carbohydrate monsters deserve universal sympathy.'

Bech has shown that verbs that govern a participle and verbs that govern a bare infinitive always construct coherently. In the following sections, I will discuss

 is used.

- (i) ?* Der Wächter sah sie; [einer nach dem anderen]; weglaufen.
 the watchman saw them-ACC one-NOM after the other run.away

The pronoun (*sie*) is morphologically underspecified for case. Apparently, for some speakers the nominative is also possible with full NPs that are unambiguously specified for case.

Den Besten (1985a, p. 43) discusses examples in which the copula is embedded under *sehen*. His examples also show a difference between raising and control verbs. However, the case assignment in copular constructions under Acl verbs in general is not entirely clear. For some discussion see Müller, 2001a, p. 223.

⁸Pollard and Sag (1994, p. 139) give the following English example.

- (i) Kim appealed to Sandy to cooperate.

⁹Max Goldt, *Die Kugeln in unseren Köpfen*. München: Wilhelm Heine Verlag. 1997, p. 145.

several verb classes: copula constructions, subject raising verbs, subject control verbs, object raising verbs, and object control verbs. I will show that while some of these verb classes cannot construct incoherently all of them can construct coherently. Having introduced criteria for distinguishing coherent and incoherent constructions and for distinguishing raising and control constructions, I now apply the coherence/incoherence criteria to subject raising and subject control verbs and to object raising and object control verbs.

2.1.4 Subject Raising Verbs

Most subject raising verbs appear only in coherent constructions, but there is a class of phase verbs (*anfangen* ('begin'), *aufhören* ('to end')) that can also appear in incoherent constructions. Examples of phase verbs in incoherent constructions will be given in Section 2.1.4.3. Before we come to such incoherent constructions, I want to discuss the scope of adjuncts and the permutability of arguments in the *Mittelfeld*.

2.1.4.1 Scope of Adjuncts

The example in (106) shows that both narrow and wide scope of the adjunct is possible with raising verbs like *scheinen*.

- (106) daß Karl Maria nicht zu lieben scheint.
 that Karl Maria not to love seems
 'that Karl does not seem to love Maria.'
 'that Karl seems not to love Maria.'

2.1.4.2 Permutation in the *Mittelfeld*

The examples in (107) show that NPs that depend on the embedded verb can be scrambled with NPs that depend on the matrix verb.

- (107) a. daß niemandem der Mann zu schlafen scheint.
 that nobody-DAT the man-NOM to sleep seems
 'That the man doesn't seem to be asleep to anyone.'
 b. daß der Mann niemandem zu schlafen scheint.
 that the man-NOM nobody-DAT to sleep seems

2.1.4.3 Intraposition and Extraposition

Most of the raising verbs do not allow for intraposition (108b) or extraposition (108c) and therefore it is sometimes claimed that raising verbs are obligatorily coherent (see for instance Haider, 1990a, p. 128).

- (108) a. daß Karl Maria zu lieben scheint.
 that Karl Maria to love seems
 'that Karl seems to love Maria.'

- b. * daß Karl Maria zu lieben zumindest scheint.
 that Karl Maria to love at.least seems
 Intended: 'that Karl at least seems to love Maria.'
- c. * daß Karl scheint, Maria zu lieben.
 that Karl seems Maria to love

However, so-called phase verbs like *anfangen* ('start'), *aufhören* ('stop'), and *beginnen* ('begin') are an exception (Kiss, 1995, p. 18). In (109b) we have an example where a verb with expletive subject is embedded under *anfangen* and where the infinitive is extraposed.^{10,11}

- (109) a. weil es bereits zu tagen begonnen hatte.
 because it-EXPL already to dawn begun had
 'because day was already dawning.'
- b. weil es bereits begonnen hatte zu tagen.
 because it-EXPL already begun had to dawn

In the sentence in (110a) there is an ambiguity as to whether *versprechen* is a raising verb or a control verb.

- (110) a. weil Peter ein erfolgreicher Sportler zu werden versprach.
 because Peter a successful sportsman to become promised
 'because Peter promised to become a successful sportsman.'
 'because it was very likely that Peter would become a successful sportsman.'
- b. weil Peter versprach, ein erfolgreicher Sportler zu werden.
 because Peter promised a successful sportsman to become
 'because Peter promised to become a successful sportsman.'

Since extraposition with the raising verbs is not possible (except for phase verbs), the extraposition in (110b) disambiguates the sentence. See also Netter, 1991, p. 5 on this.

Meurers (2000, p. 43) uses the examples in (111), which I found in a newspaper and a magazine, in addition to examples with phase verbs to show that raising and coherence are independent phenomena.

- (111) a. Im Herbst schließlich stoppte Apple die Auslieferung einiger
 in fall finally stopped Apple the delivery of.some
 Power Books, weil sie drohten sich zu überhitzen und in
 Power Books because they threatened self to overheat and in

¹⁰See also Fanselow (1987, p. 189).

¹¹Note that examples like (109) contradict Suchsland's claim (1994, p. 22; 1997, p. 290) that raising verbs do not have a perfect.

Flammen aufzugehen.¹²

flames up.to.go

'In fall, finally, Apple stopped the delivery of some Power Books since there was danger that they would overheat and go up in flames.'

- b. Das elektronische Stabilitätsprogramm ESP überwacht die
the electronic stability.program ESP monitors the
Fahrzeugbewegungen und greift in kritischen Situationen ein,
vehicle.movements and intervenes in critical situations PART
wenn der Wagen droht, außer Kontrolle zu geraten.¹³
when the car threatens out.of control to get
'The electronic stability program ESP monitors the movements of the
car and intervenes in critical situations when the car is in danger of
getting out of control.'

Fanselow (1987, p. 189) discusses the example in (112a) and Rosengren (1992, p. 279) and Cook (2001, p. 16) discuss the ones in (112b) and (112c), respectively:

- (112) a. Ludwig der Deutsche glaubt nicht, daß der Reihn droht, über die
Ludwig the German believes not that the Rhine threads over the
Ufer zu treten.
banks to step
'Ludwig the German doesn't believe that the Rhine is likely to burst
its banks.'
- b. weil das Wetter verspricht, heiter zu werden.
because the weather promises fine to become
'because it promises to be fine weather.'
- c. obwohl heute verspricht, ein wunderschöner Tag zu werden.
although today promises a wonderful day to become
'although it promises to be a wonderful day today.'

The sentences in (111) and (112) seem rather strange to me, and the reason for this is that phrases have been forced into a linearization pattern that is possible only with the control readings of *drohen* and *versprechen*. I regard the sentences in (111) and (112) as exceptions.¹⁴

Note that the sentences do not pose a theoretical problem if judged grammatical: If these sentences are grammatical, *drohen* and *versprechen* have to be categorized in the same class as phase verbs. To account for the strong preference of

¹²taz, 20./21.01.1996, p. 7.

¹³Spiegel, 41/1999, p. 103.

¹⁴Note that the use of introspection in judging these sentences is not incompatible with the data conscious position argued for in the introduction. What I there rejected was the common practice to rule out complete patterns or constructions on the basis of one or two hand-made ungrammatical examples without taking corpus data into account.

the control reading in sentences like (110b) one had to mark the lexical entry for the raising verb in incoherent constructions as dispreferred.

2.1.5 Subject Control Verbs

It was claimed in earlier publications that subject control verbs that take a accusative or dative complement are obligatory incoherent (Bech, 1955, §125). The data that will be discussed in this subsection show that this claim is not empirically correct.¹⁵

2.1.5.1 Scope of Adjuncts

As was discussed in Section 2.1.2.1, subject control verbs may construct coherently. In coherent constructions wide scope of adverbs is possible. An example for a sentence that has a wide scope and a narrow scope reading is given in (113):

- (113) weil Karl ihm nicht einzuschlafen verspricht.
 because Karl him not PART (in).to.sleep promises
 ‘because Karl promises him to not fall asleep.’
 ‘because Karl does not promise him to fall asleep.’

2.1.5.2 Permutation in the *Mittelfeld*

As the example in (114b) shows, there are subject control verbs that allow for the permutation of the complements of the matrix and the embedded verb.

- (114) a. weil Karl dem Mann das Buch zu lesen verspricht.
 because Karl-NOM the man-DAT the book-ACC to read promises
 ‘because Karl promises the man to read the book.’
 b. weil Karl das Buch dem Mann zu lesen verspricht.
 because Karl-NOM the book-ACC the man-DAT to read promises

In examples with pronouns the serialization of the short *es* to the left of the complements of the matrix verb is the preferred one.

- (115) weil es ihm jemand zu lesen versprochen hat.¹⁶
 because it-ACC him-DAT somebody-NOM to read promised has
 ‘because somebody promised him to read it.’

It is often claimed that control verbs that take an object do not appear in coherent constructions. *versprechen* is a subject control verb with a dative complement that can appear in coherent constructions. In Section 2.1.7, I will show that coherent constructions are also possible with object control verbs although this is often denied.

¹⁵Most of the examples that will be discussed in this section have already been used in Section 2.1.2.1 to demonstrate coherence tests.

¹⁶Haider, 1986b, p. 110; 1990a, p. 128.

2.1.5.3 Intraposition and Extraposition

Subject control verbs that govern *zu*-infinitives allow for the intraposition (116) and the extraposition (117) of their infinitival complement.

- (116) weil Karl [das Rennen zu gewinnen] nicht versuchen will.
 because Karl the race to win not try wants.to
 ‘because Karl does not want to try to win the race.’
 ‘because Karl wants not to try to win the race.’
- (117) weil Karl versuchen will, [das Rennen zu gewinnen].
 because Karl try wants.to the race to win
 ‘because Karl wants to try to win the race.’

Apart from control verbs that govern a *zu*-infinitive one also has to consider control verbs that govern bare infinitives. Modal verbs have a control and a raising version. In the control version the subject fills a semantic role of the modal verb. As was demonstrated in Section 2.1.2, verbs that embed a bare infinitive do not allow for the incoherent construction. Hence, the extraposition of a verbal projection is excluded both for the control and the raising version.

Having shown that subject control verbs that govern a *zu*-infinitive can construct coherently and incoherently, I now turn to object raising verbs.

2.1.6 Object Raising Verbs: AcI Verbs

Verbs that embed a bare infinitive, the subject of which is realized as accusative, are also called AcI verbs. The term AcI stands for *Accusativum cum Infinitivum* (‘accusative with infinitive’). Examples are perception verbs and the causative and permissive *lassen* (‘to let/to have’).

2.1.6.1 Scope of Adjuncts

In the example in (118) the negation may scope over either verb, as is known from other coherent constructions.

- (118) daß ich den Jungen das Buch nicht holen ließ.
 that I the boy the book not get let
 ‘that I did not have/let the boy get the book.’
 ‘that I had/let the boy not get the book.’

With perception verbs the different scopings of the negation cannot be observed since it is—for instance—impossible to hear somebody not singing, but as Pütz (1982, p. 340) shows, other adjuncts can be used to detect the scope differences.

- (119) Peter hat es im Laboratorium blitzen sehen.
 Peter has it-EXPL in.the lab lightning seen
 ‘Peter saw lightning in the lab.’

In one reading the lightning is in the lab and Peter sees it, and in the other reading Peter himself is in the lab and sees the lightning, but nothing is said about the location of the lightning. The lightning can be outside the lab.¹⁷

2.1.6.2 Permutation in the *Mittelfeld*

It is sometimes claimed that the accusative of the matrix verb has to be placed before the accusative of the embedded verb (Steube, 1992, p. 301; Eisenberg, 1999, p. 356). As the examples in (120b) and (121) show, this is not right.

- (120) a. Ich ließ den Jungen das Buch holen.
 I-NOM let the boy-ACC the book-ACC get
 'I had/let the boy get the book.'
- b. Ich ließ es (das Buch) den Jungen holen.¹⁸
 I-NOM let it-ACC the book-ACC the boy-ACC get

(120a) shows the order in which the complement of *holen* is adjacent to the verb, and in (120b) the object of the embedded verb is separated from this verb by the accusative that is the logical subject of *holen*.

In (121) the two accusatives are pronouns. From the context it is clear that *sie* ('her') is the object and *uns* ('us') is the subject of *verbrennen* ('burn').

- (121) Schau auf zum Himmel
 look up to.the sky
 Diese Erde, sie ist gelb wie Stroh
 this earth she is yellow like straw
 Komm, laß *sie* *uns* verbrennen
 come let she-ACC us-ACC burn
 Ich will es so
 I want it so
 Jetzt weißt du, wer ich bin¹⁹
 now you know who I am
 'Look up to the sky \\\ This earth is as yellow as straw \\\ Come on, let's
 burn it \\\ I want that \\\ Now you know who I am'

It is also possible to realize dative objects to the left of the AcI accusative, as (122) shows.

¹⁷There are two additional readings where the *es* is referential. With the referential interpretation, the sentence means that somebody or something is flashing a light in the lab or that Peter saw somebody or something flashing a light while Peter was in the lab.

¹⁸Bech, 1955, p. 136.

¹⁹Herwig Mitteregger, *Herzlichen Glückwunsch*, CBS Schallplatten GmbH, Germany, 1982. See also Müller, 1999a, p. 172.

- (122) Man ließ der Feuerwehr am nächsten Tag die Polizei
 one let the fire.brigade-DAT at.the next day the police-ACC
 helfen.²⁰
 help
 ‘One had the police help the fire brigade the next day.’

For sentences like (123) the order where the dative precedes the accusative is the preferred one since there is a tendency in German for NPs that refer to animate entities to precede those that refer to inanimate entities (Hoberg, 1981, p. 46).

- (123) Karl sieht seinem Gläubiger einen Ziegel auf den Kopf fallen.
 Karl sees his creditor-DAT a brick-ACC on the head fall
 ‘Karl sees a brick fall on his creditor’s head.’

Even the subject of the matrix verb can follow the accusative or dative object of the embedded verb, although this also is often denied (for instance by Grewendorf (1987, p. 138; 1988, p. 284) and Wurmbrand (1998, p. 207)). An example for such a permutation is (124):

- (124) daß ihn (den Erfolg) uns niemand auskosten ließ.²¹
 that it-ACC the success us-ACC nobody-NOM enjoy let
 ‘that nobody let us make the most of it.’

Cook (2001, p. 306) argues that such examples are exceptional since they involve quantification which, in turn, interacts with information-structuring. I think that the syntax has to provide all in principle possible serializations. Whether certain elements have to contain a quantifier for a particular serialization or whether there are other such constraints on when a particular serialization can be realized is an independent issue.

The permutation of arguments of the involved verbs is only possible, if the sentence remains understandable, i. e., if the permutation is transparent for the hearer.

- (125) a. Der König ließ den Ritter die Frau heiraten.
 the king-NOM let the knight-ACC the woman-ACC marry
 ‘The king let the knight marry the woman.’
 b. Der König ließ die Frau den Ritter heiraten.
 the king-NOM let the woman-ACC the knight-ACC marry
 ‘The king let the woman marry the knight.’

The sentences in (125) can hardly be assigned the same meaning. The same constraint on permutations can be observed in simple sentences in which the case

²⁰Bierwisch, 1963, p. 125.

²¹Haider (1991, p. 5) attributes a similar example to Tilman Höhle. See also Haider, 1990a, p. 136 and the discussion of the object control verb *erlauben* (‘permit’) on page 66.

of NPs is morphologically underspecified, for instance between nominative and accusative or dative and accusative and in copula constructions with two nominatives (Müller, 1999a, p. 171–173; Hoberg, 1981, p. 67; Wegener, 1985a, p. 45). In general, it can be said that the permutation of two elements with the same (morphological) case is possible, provided the hearer/reader is able to understand the utterance in the intended reading. The same observation was made by Kuno (1980, p. 175) for Japanese.

The most interesting example in this context is (121), which shows that the resolution of discourse referents is important for linearization. The pronouns in (121) do not have animateness values that can be referred to in a clause internal way. Without resolving the reference of the pronouns nothing about their permutability can be said.

2.1.6.3 Intraposition and Extraposition

The bare infinitive that depends on an AcI verb cannot be intraposed.

- (126) a. daß ich den Jungen das Buch holen ließ / sah.
 that I the boy the book get let saw
 ‘that I had / saw the boy get the book.’
 b. * daß ich das Buch holen den Jungen ließ / sah.
 that I the boy get the book let saw
 c. * daß den Jungen das Buch holen niemand ließ / sah.
 that the boy the book get nobody let saw
 Intended: ‘that nobody let / saw the boy get the book.’

Extraposition of the infinitive is also impossible:

- (127) a. * daß ich ließ / sah, den Jungen das Buch holen.
 b. * daß ich den Jungen ließ / sah, das Buch holen.

2.1.6.4 Expletive Predicates and Subjectless Constructions

As was already discussed in Section 2.1.3.2, perception verbs like *sehen* are raising verbs. They allow the embedding of expletive and subjectless predicates (Reis, 1976a, p. 66; Höhle, 1978, p. 70).²²

- (128) a. Karl sah es regnen.
 Karl saw it-EXPL rain

²²Note that (128b) is an example in which a form of *sein* is embedded under a perception verb. Reis’ claim (1976a, p. 66) that the embedding of *sein* under *lassen* is not possible cannot be upheld in the light of data like (i).

(i) a. Es ist möglich, die Subjekts-Anhebung, so wie sie in (97) syntaktisch dargestellt
 it is possible the subject.raising such as she in (97) syntactically represented
 wurde, auch für Sätze wie (144) und (145) relevant sein zu lassen.
 was also for sentences like (144) and (145) relevant be to let
 ‘It is possible to apply the subject raising that was syntactically represented in (97) to
 sentences like (144) and (145) as well.’ (In the main text of Pütz, 1982, p. 350)

- b. ? Ich sah ihm schlecht werden.
 I saw him-DAT feel.sick become
 'I saw him getting sick.'

Expletive predicates can also be embedded under *lassen*:

- (129) Er läßt es regnen.
 he lets it-EXPL rain

(129) has the reading that he lets it rain and tolerates getting wet, but it can also mean that he causes the rain. In the Soviet Union the clouds were made to rain each first of May before the parades. Today such techniques are still applied to prevent damage caused by hail. So, both the causative and the permissive versions of *lassen* allow the embedding of expletive predicates. The context is different for (130), but there are also two readings.

- (130) Er läßt es Konfetti regnen.
 he lets it-EXPL confetti rain
 'He had it rain confetti.'
 'He let it rain confetti.'

It is sometimes claimed that the *es* of weather verbs is not really an expletive (see for instance Paul, 1919, p. 35), but the following example leaves no doubt about the possibility of embedding expletive predicates under *lassen*.

- (131) Er läßt es sich gut gehen.
 he lets it-EXPL self good go

The situation with subjectless constructions is less clear. Embedding of subjectless predicates under the permissive *lassen* (132a,c) seems to be better than embedding them under the causative version (132b,d).

- (132) a. ? Er ließ ihm schlecht werden und kümmerte sich nicht drum.
 he let him feel.sick become and cared self not it.about
 'He let him get sick and did not care.'

b. das „Dativisierungs“-Phänomen, das den Satz [...] ungrammatisch sein läßt,
 the dativization.phenomenon that the sentence ungrammatical be lets
 'the dativization phenomenon that makes the sentence ungrammatical' (In the main text of Grewendorf, 1983, p. 141)

c. um die Gesetze 1999 wirksam werden zu lassen.
 to the laws 1999 effective be to let
 'to let the laws take effect from 1999.' (Mannheimer Morgen, 26.03.1998, Politik; In Kürze)

The more general claim by Suchsland (1995, p. 72; 1997, p. 149) that *sein* is impossible under Acl verbs is contradicted by both (i) and (128b). I do not deny that the examples that the authors provide are ungrammatical, but this is not due to a general impossibility of such embeddings.

- b. ?? Der Versuchsleiter gab ihm die Probe und ließ ihm schlecht
 the experiment.head gave him the sample and let him sick
 werden.
 become
 'The leader of the experiment gave him the sample and made him
 feel sick.'
- c. ? Er ließ den Studenten vor der Prüfung grauen und kümmerte
 he let the students before the exam dread and cared
 sich nicht drum.
 self not it.about
 'He let the students dread the exam and did not care.'
- d. * Er gab den Studenten eine schwere Probeklausur und ließ ihnen
 he gave the students a heavy test.exam and let them
 vor der Prüfung grauen.
 before the exam dread
 Intended: 'He set the students a difficult mock exam and made them
 dread the real one.'

AcI verbs do not assign a thematic role to the subject of the embedded verb. For cases in which the embedded verb has a referential subject, it is sometimes claimed that the matrix verb actually assigns a thematic role. Eisenberg (1994, p. 387), for instance, argues that this is supported by the fact that (133b) follows from (133a).

- (133) a. Ich sehe Hans rauchen.
 I see Hans smoke
 b. Ich sehe Hans.
 I see Hans

But that (133b) follows from (133a) is not necessarily the case, as (134) shows.

- (134) Ich sehe jemanden rauchen.
 I see somebody smoke
 'I (can) see somebody smoking.'

(134) can be uttered in a situation where somebody is smoking behind a screen and only the smoke is visible. Kirsner and Thompson (1976) show convincingly that the information that if one sees Hans smoking, one usually sees Hans, is not included in the meaning of *sehen*, but is inferred via world knowledge. On page 209 they provide examples with different perception verbs that can also be transferred to German.

- (135) a. Wir haben das unsichtbare Nervengas alle Schafe töten sehen, aber
 natürlich haben wir das unsichtbare Nervengas selbst nicht gesehen.
 'We saw the invisible nerve gas kill all the sheep (but of course we
 didn't actually see the invisible nerve gas itself).'

- b. Ich fühlte Georg sich auf das andere Ende des Wasserbetts setzen, aber natürlich habe ich ihn selbst nicht gefühlt.
'I felt George get on the other end of the water bed (but, of course, I didn't actually feel George).'
- c. Ich roch Sylvia das Wohnzimmer aussprühen, aber ich konnte Sylvia selbst nicht riechen.
'I smelled Sylvia spraying the living room (but I couldn't smell Sylvia herself).'
- d. Von meinem Beobachtungspunkt, der fünfzehn Kilometer weit entfernt war, sah ich sie die Brücke sprengen, aber es erübrigt sich zu sagen, daß ich die einzelnen Arbeiter aus der Entfernung nicht sehen konnte.
'From my vantage point 10 miles away, I watched them blow up the bridge (but, needless to say, from that distance I couldn't see the individual commandos involved).'
- e. Wir hörten den Bauer das Schwein schlachten.²³
'We heard the farmer slaughter the pig.'

These examples show that situations can be perceived globally, without perceiving the referent of the subject of the embedded verb in the same manner.

2.1.7 Object Control Verbs

Some authors have claimed that coherent constructions are impossible with object control verbs (see for instance Sternefeld, 1985, p. 276). As I will show in the following, coherent constructions are possible both with object control verbs that take a dative object and with object control verbs that take an accusative object.

2.1.7.1 Scope of Adjuncts

Jacobs (1992, p. 115) provides the following sentences:

- (136) a. weil er diesem Mann den Kindern sicher zu helfen
because he-NOM this man-DAT the children-DAT surely to help
verbietet.
forbids
'because he surely forbids this man to help the children.'
- b. weil er dieses Buch den Kindern sicher zu lesen
because he-NOM this book-ACC the children-DAT surely to read
verbietet.
forbids
'because he surely forbids the children to read this book.'

²³De Geest (1970, p. 45) gives this example in Dutch. What was probably heard is not the farmer but the pig.

Both sentences have a wide scope reading. The wide scope reading would be impossible for (136a) if *den Kindern sicher zu helfen* were a separate coherence field. Jacobs marks the example with two datives with a question mark, but judges (136b) acceptable. He assumes an analysis of coherent constructions whereby the verbs form a verbal complex. The valency list of the verbal complex is the result of a valence transfer of complements from the embedded verb to the matrix verb. He assumes that the valency list of verbal complexes has to have the form of valency lists that are known from simplex lexical entries.²⁴ As he notes himself, according to these assumptions, examples like (136a) should not be possible since German does not have simplex heads that take two datives.

Jacobs (1991, p. 20) gives the sentence in (137a) without a question mark.²⁵

- (137) a. weil er es sie tatsächlich zu reparieren bat.
 because he-NOM it-ACC she-ACC actually to repair asked
 'because he actually asked her to repair it.'
 'because he asked her to really repair it.' (as opposed to pretending to repair it or not repairing it properly)
- b. weil der Fritz es ihn nicht zu lesen bat²⁶
 because the Fritz-NOM it-ACC him-ACC not to read asked
 'because Fritz asked him not to read it.'
 'because Fritz didn't ask him to read it.'

In these examples both scopings are possible. If one assumes an argument composition approach, the resulting argument structure has two structural accusatives, and there are no simplex verbs with two structural accusatives. There are verbs like *lehren* that govern two accusatives, but one of them is lexical.

Bayer and Kornfilt (1989, p. 37), Haider (1990a, p. 136), and Vogel and Steinbach (1998, p. 79) explicitly claim that coherent constructions with control by an accusative object are impossible. Like Jacobs, Haider (1986b, p. 94; 1990a, p. 131) assumes that verbal complexes in coherent constructions have an argument structure that can also be found with simplex verbs. Since there are no simplex verbs with two structural accusatives in German, their assumption is falsified by sentences like (137).

The examples in (137) also contradict Haider's (1993, p. 251) and Wöllstein-Leisten's (2001, p. 60) claim that verbs like *bitten* that alternatively govern a prepositional object or a *zu*-infinitive never occur in coherent constructions.

²⁴Haider (1986b, p. 94; 1990a, p. 131), Kiss (1995, p. 215), Kathol (2000, p. 32), and Wöllstein-Leisten (2001, p. 198) make the same assumption. Kiss admits that this assumption is incompatible with an argument composition approach to Acl constructions.

²⁵Note that both sentences in (137) are ambiguous. The pronoun *es* may refer to a book (*Buch*) or a bicycle (*Fahrrad*) or to a child (*Kind*) or girl (*Mädchen*). Likewise, *sie* may refer to a pump (*Pumpe*) or a female, and *ihn* may refer to an essay (*Aufsatz*) or a male. Depending on the reference of the pronouns, the sentences in (137) have permuted or non-permuted elements in the *Mittelfeld*.

²⁶Reape, 1994, p. 174.

As Askedal (1988, p. 13) noted, (138) is also an instance of a coherent construction.

- (138) Keine Zeitung wird ihr zu lesen erlaubt.²⁷
 no newspaper-NOM was her-DAT to read allowed
 ‘She is not allowed to read any newspapers.’

The negation that is contained in *keine* may scope over *erlauben*, which would be impossible for an argument of *lesen* in an incoherent construction. See Bech, 1955, § 80 on examples involving so-called cohesion.

2.1.7.2 Permutation in the *Mittelfeld*

The examples in (139) show that the permutation of elements in the *Mittelfeld* is possible.

- (139) a. weil dieses Machwerk kein Vater seinen
 because this sorry.effort-ACC no father-NOM his
 Kindern zu lesen erlauben würde.²⁸
 children-DAT to read permit would
 ‘because no father would permit his kids to read such a sorry effort.’
 b. daß ihn (den Erfolg) uns niemand auszukosten
 that him-ACC the success us-DAT nobody-NOM to.enjoy
 erlaubte.²⁹
 permitted
 ‘that nobody permitted us to enjoy the success.’

The sentences in (137) also constitute examples of permutation if the *es* refers to an inanimate discourse referent. See footnote 25.

2.1.7.3 Intraposition and Extraposition

Both intraposition (140a) and extraposition (140b) is possible.

- (140) a. daß Karl [den Aufsatz zu lesen] niemandem versprochen
 that Karl-NOM the essay-ACC to read nobody-DAT promised
 hat.
 has
 ‘that Karl did not promise anybody to read the essay.’
 b. daß Karl niemandem versprochen hat, [den Aufsatz zu
 that Karl-NOM nobody-DAT promised has the essay-ACC to
 lesen].
 read
 ‘that Karl did not promise anybody to read the essay.’

²⁷Stefan Zweig. *Marie Antoinette*. Leipzig: Insel-Verlag. 1932, p. 515, quoted from Bech, 1955, p. 309.

²⁸Reape, 1994, p. 174.

²⁹Haider (1991, p. 5) attributes a similar example to Tilman Hühle.

Having examined the ability to enter coherent constructions, I want to make a brief remark about the existence of verbs that obligatorily construct incoherently.

2.1.8 Obligatorily Incoherent Verbs

As we have seen in previous sections, the literature is full of empirically untenable claims about verbs or verb classes that do not allow coherent constructions. Cook (2001) argues convincingly that the possibility of the coherent construction is strongly influenced by the information structure and that the discourse context plays an important role for judging examples of the coherent construction.

Like Cook and also Meurers (2000, p. 19, fn. 12), I claim that there are no obligatorily incoherent verbs. All verbs that allow for the incoherent construction can in principle also appear in the coherent construction. Information structure constraints prohibit certain linearizations or the possibility of certain scopings. This means that the ungrammaticality of a certain construction is not due to the fact that the verb does not allow for the coherent construction, but due to the violation of linearization constraints or constraints on information structure. Such an explanation contrasts with Cook's treatment of the data in OT-LFG. She assumes that there is a class of obligatorily incoherent verbs which may be used in coherent constructions, i. e., she assumes that constraints may be violated and that defaults may be overridden. The analysis that I will provide in the Sections 2.2.4 and 2.2.6 is monotonous, i. e., overriding of constraints is not needed.

After this brief digression and the preceding discussion of control and raising verbs in Sections 2.1.4 to 2.1.7, I now want to discuss verbs that embed adjectives or other non-verbal predicates.

2.1.9 Copula Constructions

In the following, I will apply the coherence tests that were introduced in Section 2.1.2 to adjective copula constructions and will show that these constructions are in many respects like coherent constructions.

2.1.9.1 Scope of Adjuncts

As within coherent combinations of verbs, different scopings can also be observed in copula constructions:

- (141) weil ihr der Mann immer treu sein wollte.
 because her-DAT the man-NOM always faithful be wanted.to
 'because the man always wanted to be faithful to her.'
 'because the man wanted to be always faithful to her.'

The sentence in (141) has the two readings that are indicated in the translation, but here the situation is less clear since the two readings may be due to the ambiguity between the modification of the copula and the modal. However, there are sentences like (142) where the adjective is fronted together with the adverbial.

- (142) Immer treu wollte er ihr sein.
 always faithful wanted.to he-NOM her-DAT be
 'He wanted to be faithful to her forever.'

Due to the existence of such sentences, the possibility of adverbs modifying adjectives directly cannot be ruled out in general. Note furthermore, that the sentence in (142) is not ambiguous. So, according to the scope tests that were discussed in Section 2.1.2.1, *immer treu* should be one separate coherence field.

What is clear, however, is that the phrase *ihr immer treu* in (143) cannot be a closed AP in the wide scope reading since then the scoping of the adverb over a predicate outside the domain of the AP could not be explained.

- (143) weil der Mann ihr immer treu sein wollte.
 because the man-NOM her-DAT always faithful be wanted.to
 'because the man always wanted to be faithful to her.'
 'because the man wanted to be faithful to her forever.'

2.1.9.2 Permutation in the *Mittelfeld*

In copula constructions, the subject of the clause and complements of the adjective can be permuted. The following sentences discussed by den Besten (1985b, p. 60) can be explained if an analysis is provided for the permutations in the coherent constructions that were examined in Section 2.1.2.2, and if it is assumed that the sentences in (144) are treated parallel to the coherent construction.

- (144) a. daß die Sache dem Minister ganz klar war.
 that the matter-NOM the minister-DAT completely clear was
 'that the matter was completely clear to the minister.'
 b. daß dem Minister die Sache ganz klar war.
 that the minister-DAT the matter-NOM completely clear was

In such an analysis, *klar* and *war* are assigned to the *Schlußfeld* and the NPs to the *Restfeld*. Note that this is a slight revision of Bech's notion of coherence since adjectives are included into the *Schlußfeld* which was reserved for verbs in Bech's set-up. In Section 2.2, I will suggest that the verbs in coherent constructions and the adjective and the copula in sentences like (144) form a complex head. The arguments of this head can be permuted as it is possible with arguments of simplex heads. See the discussion of the scrambling example (49) on page 31.

2.1.9.3 Intraposition and Extraposition

While the examples in (141) and (144) show that the coherent construction of adjective and copula is possible, it is not clear whether this is the only option, or whether the incoherent construction is also possible. At first glance, the examples in (145) seem to be instances of the incoherent construction.³⁰

³⁰Hoberg (1997, p. 1574) discusses examples that are similar to (145a) and (145b) in the context of negation. Note that none of the examples in (145c), (146a), and (146b) is negated.

- (145) a. Sie wuchsen in einem gesellschaftlichen Klima auf, das
 they grew in a social climate PART(up) that
*freier in Deutschland nie war.*³¹
 freer in Germany never was
 'They grew up in a social climate that was freer than ever in Germany.'
- b. Dabei könnte die Begründung des Urteils *absurder* nicht
 that.at could the reason for.the verdict more.absurd not
*sein: [...]*³²
 be
 'Yet the reason for the verdict could not be more absurd.'
- c. daß *passivierbar* nur solche Verben *sind*, die ein (aktionales)
 that passivizeable only such verbs are that a actionable
 Tätigkeitsprädikat ausdrücken [...] ³³
 action.predicate express
 'that only verbs expressing an action predicate can be passivized.'

It is unclear whether these constructions should be regarded as variants of adjective copula combinations in which an AP complement is embedded that has the same status as VPs in incoherent constructions or whether these constructions should be treated as a special serialization of the elements that take part in complex formation. The adjectives in (145) are all intransitive. Examples in which adjectives are intraposed together with one of their complements are very rare. The sentences in (146) were the only examples I could find so far.

- (146) a. Auch die Uminterpretation bei den nullstelligen
 also the reinterpretation with the zero-valent
 Resultativkonstruktionen und die Selektionsbeschränkungen bei
 resultative.constructions and the selection.restrictions with
 den intransitiven Basisverben zeigen, daß *ausschlaggebend für die*
 the intransitive basis.verbs show that decisive for the
Interpretation abgeleiteter Verben bestimmte semantische
 interpretation derived verbs certain semantic
 Interpretationsmuster *sind*, die sich aus der Einbindung der
 interpretation.models are which self out the inclusion of.the
 semantischen Argumente in die Verbinformation ergeben [...] ³⁴
 semantic arguments in the verb.information result
 'The reinterpretation of zero-valent resultative constructions and the
 selection restrictions of intransitive basis verbs also shows that cer-
 tain semantic interpretation models that are produced by including

³¹taz, 01.07.1995, p. 10.

³²taz, 17.02.1999, p. 12.

³³In the main text of Helbig, 1987, p. 228.

³⁴In the main text of Kaufmann, 1995a, p. 162.

the semantic arguments in the verb information are decisive for the interpretation of derived verbs.’

- b. Szabolsci und Zwarts legen überzeugend dar, daß *entscheidend für* Szabolsci und Zwarts lay convincingly PART that decisive for *die fraglichen Zusammenhänge* die inhaltlichen the under.discussion correlations the regards.content Eigenschaften jener komplexen Funktionen *sind*, die sich bei properties of.those complex functions are which self at der nach Auffassung der EKG mit ‘langen’ Extraktionen the after opinion of.the EKG with long extractions verbundenen Funktions-Komposition ergeben.³⁵ connected functional.composition arise
- ‘Szabolsci and Zwarts argue convincingly that what is decisive for the correlations under discussion is the properties of those complex functions, which, according to Extended Categorical Grammar, arise from function composition which is connected to ‘long’ extraction.’

Hand-made examples such as the ones in (147) are rather strange.³⁶

- (147) ? weil stolz auf seinen Sohn nur Karl gewesen ist.
because proud of his son only Karl been is
‘because only Karl was proud of his son.’

As I pointed out in Müller, 1999a, Chapter 18.4.3, examples like (148b,c) and (149b,d) are predicted to be possible in analogy to the incoherent verbal constructions in (150) and (151).

- (148) a. Karl ist auf seinen Sohn stolz gewesen.
Karl is on his son proud been
‘Karl was proud of his son.’
b. * Karl ist gewesen auf seinen Sohn stolz.
Karl is been on his son proud
c. * Karl ist gewesen stolz auf seinen Sohn.
Karl is been proud on his son
- (149) a. der Sohn, auf den Karl stolz gewesen ist
the son on whom Karl proud been is
‘the son, of whom Karl was proud’
b. * der Sohn, auf den stolz Karl gewesen ist
the son on whom proud Karl been is

³⁵In the main text of Jacobs, 1991, p. 47.

³⁶See also Gereon Müller, 1994, p. 4 for a similar sentence with the same judgment.

- c. die Sache, derer sich Karl sicher gewesen ist
 the thing which self Karl sure been is
 'the thing that Karl was sure of'
- d. * die Sache, derer sich sicher Karl gewesen ist
 the thing which self sure Karl been is
- (150) Karl hat versucht, dem Mann zu helfen.
 Karl has tried the man to help
 'Karl tried to help the man.'
- (151) der Mann, dem zu helfen Karl versucht hat
 the man whom to help Karl tried has
 'the man, whom Karl tried to help'

However, (148b,c) and (149b,d) are ungrammatical. The sentences in (145) follow a special intonation pattern and I will therefore assume that the intraposition of adjectives is a special discontinuous serialization of the predicate complex. I will follow Hoberg (1997, p. 1574) and call this construction *focus split*.

2.1.9.4 Fronting

The examples in (152) show that, as with verbs, it is possible to front adjectives, while their complements stay behind in the *Mittelfeld*.³⁷

- (152) a. Treu will Karl seiner Frau sein.
 faithful wants Karl-NOM his wife-DAT be
 'Karl wants to be faithful to his wife.'
- b. Treu geblieben ist sich Dieter Kunzelmann also auf jeden
 true stayed is self-DAT Dieter Kunzelmann-NOM so on each
 Fall.³⁸
 case
 'So Dieter Kunzelmann certainly remained true to himself.'
- c. Gespannt darf man darauf sein, wie weit die
 in.suspense can one-NOM this.on be to.what.degree the
 'PC-Terminals' Akzeptanz finden werden.³⁹
 'PC-Terminals' acceptance find will
 'We can remain in suspense concerning the degree to which PC terminals will be accepted.'

³⁷See also Haider, 1993, p. 202; Nerbonne, 1994, p. 148; Gereon Müller, 1994, p. 3; Müller, 1997b, p. 3.

³⁸taz, 04./05.04.1998, p. 4.

³⁹c't, 4/1996, p. 14.

- d. Stolz bin ich nicht auf meinen Bart, sondern darauf, ihn zu
 proud am I-NOM not of my beard but this.of him to
 zeigen.⁴⁰
 show
 'I'm not proud of my beard itself, but I am proud of showing it.'

In (152a,b) the dative object of *treu* remains in the *Mittelfeld*. In (152c,d) the prepositional objects *darauf* + sentence and *auf meinen Bart* are not fronted together with their head.

It is also possible to front the copula together with the adjective (153a), but the fronting of the copula alone is not possible, as (153b) shows.

- (153) a. Treu sein will Karl seiner Frau.
 faithful be wants Karl his wife
 b. * Sein will Karl seiner Frau treu.
 be wants Karl his wife faithful

This is parallel to (82c) where a verb was fronted from the middle of the verbal complex consisting of verbs that obligatorily construct coherently.

If one assumes that *treu*, *sein*, and *will* form a predicate complex, the ungrammaticality of (153b) is accounted for if an analysis is provided that explains why it is impossible to front something out of the middle of the predicate complex leaving the rest of the predicate complex behind.

Having dealt with the question whether the copula and the dependent predicate should be analyzed as forming a predicate complex or not, I will now turn to the question of whether the copula is a raising or a control predicate.

2.1.9.5 Expletive Predicates and Subjectless Constructions

The examples in (154) show that the embedding of subjectless predicates like *schulfrei* and *schlecht* and the embedding of expletive predicates like *laut* is possible.⁴¹

- (154) a. Am Montag ist schulfrei.
 at.the Monday is school.free
 'There is no school on Monday.'
 b. weil schulfrei ist.
 because school.free is
 'because there is no school.'
 c. Ihm wurde schlecht.
 him-DAT got bad
 'He got sick.'

⁴⁰taz, 08./09.03.1997, p. 20.

⁴¹(154d) and (154e) are quoted from Haider, 1986a, p. 18.

- d. Für dich ist immer offen.
for you is always open
'It is always open for you.'
- e. Mir ist dabei bang.
me is there.with scared
'I feel uneasy about it.'
- f. In der Mensa ist es laut.
in the commons is it-EXPL loud
'It is loud in the commons.'

The adjective *schulfrei* in (154a) does not predicate over the PP. The PP is an adjunct that may be omitted as is shown by (154b). The adjective *laut* also has a non-expletive version, and (154f) is actually ambiguous between the expletive and the non-expletive reading. With the expletive predicate (154f) means that the people, machines, or whatever, in the commons are loud, whereas in the non-expletive reading the *es* could refer to a child. The possibility of embedding subjectless constructions supports a raising analysis of the copula as was suggested by Pollard and Sag (1994, p. 147) for English and shows that a control analysis as suggested by Ryu (1997, p. 204, p. 301) is not appropriate.

The copula as used with adjectives does not introduce its own relation and hence does not assign semantic roles. The copula merely provides agreement information and the verbal features that may be needed by other predicates that embed the copula construction (Paul, 1919, p. 41). It is interesting to note in this context that there are actually main clauses in German that consist of a predicate and a clause that depends on this predicate, but no copula (see also Paul, 1919, p. 41 for more examples).

- (155) a. Doch egal, was noch passiert, der Norddeutsche
but irrelevant what still happens the North.German
Rundfunk steht schon jetzt als Gewinner fest.⁴²
broadcasting.company stands already now as winner PART
'But never mind what happens, it is already certain that the Norddeutscher Rundfunk (North German broadcasting company) will be the winner.'
- b. Interessant, zu erwähnen, daß ihre Seele völlig in Ordnung
interesting to mention that her soul completely in order
war.⁴³
was
'It is interesting to point out that she was completely sane.'

⁴²Spiegel, 12/1999, p. 258.

⁴³Michail Bulgakow, *Der Meister und Margarita*. München: Deutscher Taschenbuch Verlag. 1997, p. 422.

- c. Ein Treppenwitz der Musikgeschichte, daß die Kollegen von
 a stair.joke of.the music.history that the colleagues of
 Rammstein vor fünf Jahren noch im Vorprogramm von
 Rammstein before five years still in.the before.program of
 Sandow spielten.⁴⁴
 Sandow played
 'It is an irony of musical history that the colleagues from (the band)
 Rammstein were still playing as the support group of Sandow a few
 years ago.'

The sentences in (155) correspond to the sentences in (156).

- (156) a. Doch was noch passiert, ist, egal, ...
 but what still happens is irrelevant
 b. Zu erwähnen, daß ihre Seele völlig in Ordnung war, ist
 to mention that her soul completely in order was is
 interessant.
 interesting
 c. Daß die Kollegen von Rammstein vor fünf Jahren noch im
 that the colleagues of Rammstein before five years still in.the
 Vorprogramm von Sandow spielten ist ein Treppenwitz der
 before.program of Sandow played is a stair.joke of.the
 Musikgeschichte.
 music.history

Such constructions are less acceptable with NPs as subjects, but not totally impos-
 sible, as (157) shows.

- (157) a. *Doof Peter.
 stupid Peter
 b. ? Interessant auch das neue Buch von Hornby.
 interesting also the new book by Hornby
 'The new book by Hornby is also interesting.'
 c. Niemand da?⁴⁵
 nobody there
 'Is anybody there?'

2.1.10 Subject and Object Predicatives

Verbs like *aussehen* ('look' in the sense of appearance, not seeing), *erscheinen* (*als/wie*) ('seem'), *gelten als* ('to be considered to be'), *sich erweisen als* ('to turn

⁴⁴Flüstern & Schweigen, taz, 12.07.1999, p. 14.

⁴⁵Paul, 1919, p. 13.

out to be'), *sich zeigen als* ('to appear as'), *sich ausgeben als* ('to pretend to be someone'), *sich geben (als)* ('to behave like'), *jemandem vorkommen (wie)* ('to seem to somebody to be'), *nennen* ('call'), *ansehen als* ('to regard as'), *empfinden als* ('to perceive as'), *finden* ('find'), and *sich vorstellen als* ('to imagine somebody/something to be') embed a predicate. They do not assign a semantic role to the subject of the embedded predicate and therefore should be regarded as raising predicates. The subject of the embedded predicate is raised to the subject (158) or to the object (160) of the matrix verb.

- (158) a. weil die Ablösung der Großen Koalition kaum noch
because the replacement of the big coalition hardly still
möglich erscheint?⁴⁶
possible seems
'because it hardly seems possible that the grand coalition will be re-
placed?'
- b. Mir erscheint das ziemlich klug.⁴⁷
me-DAT seems this-NOM pretty smart
'This seems pretty smart to me.'
- c. Er sieht gut aus.
he-NOM looks good PART(out)
'He looks good.'
- d. Er kommt ihm komisch vor.
he-NOM comes him-DAT strange PART
'He seems strange to him.'

That the nominative in (158) is the subject of the matrix verb is shown by subject-verb agreement. If one changes the pronoun in (158d) the verb changes as well:

- (159) Sie kommen ihm komisch vor.
they-NOM come him-DAT strange PART
'They seem strange to him.'

As (158b) and (158d) show, the matrix verb in subject predicative constructions may have a dative object.

- (160) a. Türkische Verbände und die Ausländerbeauftragte nennen die
Turkish unions and the foreigner representative call the
Regelung unzureichend.⁴⁸
regulation insufficient
'Turkish unions and the official looking after foreign immigrants call
the regulation insufficient.'

⁴⁶taz, 27.08.1999, p. 3.

⁴⁷taz, 13.08.1999, p. 20.

⁴⁸taz, 25.08.1999, p. 1.

- b. Ich finde ihn klug.
 I find him-ACC smart
 'I find him smart.'

The subject of a predicate is realized in the nominative in copula constructions and in subject predicative constructions as in (158), but it is realized as accusative in object predicative constructions like (160).

The subject of the embedded predicate may be a clause (161a–c) or a *zu*-infinitive as in (161d):

- (161) a. Besonders wichtig erscheint mir jedoch, dass ihr den Tod
 particularly important seems me however that you the death
 nicht mystifiziert.⁴⁹
 not mystify
 'However, what seems of particular significance to me is that you do
 not mystify the death.'
- b. Ich finde gut, dass ihr den Tod nicht mystifiziert.
 I find good that you the death not mystify
 I find it good that you don't mystify the death.'
- c. weil er (es) schön findet, daß Peter kommt.
 because he it-EXTRA nice finds that Peter comes
 'because he finds it nice that Peter is coming.'
- d. In jede Schule einen Computer zu stellen und dann zu glauben,
 in each school a computer to stand and then to believe
 damit den Anschluss an die Weltspitze zu schaffen, findet Peter
 therewith the connection to the world.peak to reach finds Peter
 Tabelaing nur witzig.⁵⁰
 Tabelaing only funny
 'Peter Tabelaing is only amused by the belief that putting a computer
 in every school will automatically lead to a connection with the world
 leaders.'

Many of the predicates that embed another predicate are rather liberal towards the syntactic category of the embedded predicate. While the examples that were discussed above contained only adjectives, NPs and PPs are possible as well. The sentences in (162) are examples of the direct embedding of a NP.

- (162) a. Das erscheint mir eine hervorragende Idee.⁵¹
 this-NOM seems me-DAT an outstanding idea-NOM
 'This seems an excellent idea to me.'

⁴⁹Le Monde diplomatique, 13.08.1999, p. 12.

⁵⁰Spiegel, 13/2000, p. 56.

⁵¹Verbmobil Corpus, CD 1.

- b. Er nennt ihn einen Lügner.
he calls him-ACC a liar-ACC
- c. Auch Patriarchatskritiker Peter Döge findet den Ukas
also patriarchy.critic Peter Döge-NOM finds the Ukas-ACC
von Radeburg eine „tolle Entscheidung“.⁵²
from Radeburg a great decision-ACC
‘Even the patriarchy critic Peter Döge considers the ukase of Radeburg to be a “great decision”.’

The verb *erscheinen* can also embed a predicate with a copula particle.

- (163) a. Der unappetitlichste kollektive Murks erscheint ihnen
the most.unappetizing collective botch-up-NOM appears them-DAT
heute als menschliche Wärme.⁵³
today as human warmth-NOM
‘The most unappealing collective botch-up is today regarded as human warmth.’
- b. Die Geschichte der Weathermen erscheint damit wie eine
the story-NOM of.the Weathermen seems therewith like an
unbewusste Spätfolge jener antikommunistischen
unconscious later.result-NOM that anti-Communist
Säuberungen, [...] ⁵⁴
cleansing
‘Hence, the story of the Weathermen seems to be a late effect of that (aforementioned) anti-Communist cleansing.’
- c. Was mit dem Bürgerbegehren „Rettet das Elbufer“
what-NOM with the citizen.desire Save the Elbe.banks
passiert, erscheint mir als schlimmste Bürgerschikane.⁵⁵
happens seems me-DAT as worst citizen.harassment-NOM
‘What is happening to the public petition “Save the Banks of the Elbe” seems to me to be the worst possible public harassment.’

Personally, I prefer the sentences with *als* and *wie* to sentences like (162a) without a copula particle.

In contrast to the verbs in (162), verbs like *ansehen* (‘regard’, ‘look at’), *aussehen* (‘look’, ‘look like’), *betrachten* (‘regard’, ‘look at’), and *halten für* (‘to consider to be’, ‘to take for’) do not allow the direct embedding of a predicate NP, but require the NP to combine with a copula particle. Copula particles like *als*, *für*, or *wie* resemble prepositions.

⁵²taz, 05.04.2000, p. 4.

⁵³taz, berlin, 16.08.1999, p. 22.

⁵⁴taz, 27.08.1999, p. 15.

⁵⁵taz, hamburg, 19.08.1999, p. 20.

- (164) a. Das Problem ist, daß sich der Senator selbst für einen
 the problem is that self-ACC the senator-NOM self for an
 Kunstexperten hält.⁵⁶
 art.expert holds
 'The problem is that the senator considers himself to be an art expert.'
- b. Er sieht wie ein Penner aus.
 he-NOM looks like a bum-NOM PART (out)
 'He looks like a bum.'
- c. Er betrachtet ihn als seinen Konkurrenten.
 he-NOM looks him-ACC as his competitor-ACC
 'He regards him as his competitor.'

Heringer (1973, p. 173, fn 4, p. 204–205) notes that *als*- and *wie*-phrases also embed adjectives and therefore suggests not calling them prepositions, but rather using the term *Identifikationstranslativ* (Identification Translative). Examples of the embedding of adjectives under *als* and *für* are given in (165):

- (165) a. Die Zahl der Aussteller sieht der Messechef als „gestiegen“
 the number of.the exhibitors sees the fair.boss as risen
 an.⁵⁷
 at
 'The trade fair director considers the number of exhibitors to have risen.'
- b. Man hält ihn für verrückt.
 one holds him for crazy
 'He is taken to be crazy.'
- c. Putin erklärt Grosny für erobert.⁵⁸
 Putin declares Grosny for taken
 'Putin declares Grosny taken.'

The *Handwörterbuch der deutschen Gegenwartssprache* (Kempcke, 1984) calls these elements coordinating conjunctions. Since *als*-, *für*-, and *wie* + NP complement behave like PPs in many respects, I will follow Wunderlich (1984, p. 73) and Fanselow (1986, p. 361) and treat them as PPs.

In the following subsections, I apply the coherence/incoherence tests to subject and object predicative verbs.

2.1.10.1 Scope of Adjuncts

As Hoeksema (1991a, p. 673) observed, adverbs that refer to the verb can follow the object in object predicative constructions:

⁵⁶taz, 16.04.1999, p. 19.

⁵⁷taz, 06.07.1999, p. 8.

⁵⁸taz, 07.02.2000, p. 5.

- (166) weil ich den Bürgermeister selber ziemlich dumm finde.
 because I the mayor myself rather stupid find
 'because I find the mayor rather stupid myself.'

If *den Bürgermeister ziemlich dumm* were a separate coherence field, sentences like (166) would be impossible.

The same is true for subject predicative constructions:

- (167) weil mir der Bürgermeister selber ziemlich dumm erscheint.
 because me the mayor myself rather stupid seems
 'because the mayor seems rather stupid to me.'

2.1.10.2 Permutation in the *Mittelfeld*

In subject predicative constructions where the base verb has an additional argument the NPs can be permuted in the *Mittelfeld*.

- (168) a. weil niemandem die Geschichte komisch erschien / vorkam.
 because nobody-DAT the story-NOM strange seemed appeared
 'because the story did not seem / appear strange to anybody.'
 b. weil die Geschichte niemandem komisch erschien / vorkam.
 because the story-NOM nobody-DAT strange seemed appeared

In object predicative constructions, the subject of the embedded predicate and the subject of the verb can be permuted in the *Mittelfeld*.

- (169) a. daß niemand ihn klug findet.
 that nobody-NOM him-ACC smart finds
 'that nobody finds him smart.'
 b. daß ihn niemand klug findet.
 that him-ACC nobody-NOM smart finds

The example in (169b) shows the order in which the subject of *klug* is serialized to the left of the subject of the matrix verb.

2.1.10.3 Intraposition and Extraposition

The embedded predicate in general has to be adjacent to the head by which it is governed in verb-final contexts.⁵⁹

- (170) a. weil er niemanden klug findet.
 because he nobody smart finds
 'because he doesn't consider anybody to be clever.'
 b. ?? weil er klug niemanden findet.
 because he smart nobody finds

⁵⁹Hoeksema (1991a, p. 674) gives Dutch examples where the embedded predicate and the main verb are separated by an adverb. On page 681 he gives examples that are similar to (171).

- (171) a. weil er niemandem klug vorkam.
 because he nobody smart appeared
 'because he appeared smart to nobody.'
- b. * weil er klug niemandem vorkam.
 because he smart nobody appeared

But again, examples with intrapositions can be found:

- (172) a. die Virtuosität pur will einem *so virtuos* nicht mehr *vorkommen*,
 the virtuosity pure wants one so virtuoso not more appear
 [...] ⁶⁰
 'The pure virtuosity doesn't seem quite so virtuoso anymore.'
- b. Diese Flußwelt war vielleicht eine versunkene, versinkende, eine modrige, alte, aber sie stellte zugleich eine Weltlandschaft dar, wie sie auf den niederländischen Gemälden aus dem 17. Jahrhundert mir *so nie vorgekommen* ist: eine Urwelt, welche als eine noch unbekannte Zivilisation erschien, zudem eine recht appetitliche. ⁶¹
 'This river world might well have been a sunken and sinking, a moldy and old one, but at the same time it represented a world landscape in a way that I had never observed it in 17th century Dutch paintings: a prehistoric world that appeared as a still unknown civilization, and quite a tempting one too.'
- c. Das Pin-up-Girl, welches im Flughafenbus den Weg zum
 the pin-up-girl which in.the airport.bus the way to.the
 Notausgang wies, klärte die Gäste zumindest sofort
 emergency.exit indicated cleared the guests at.least immediately
 über die Landesreligion auf; dies konnte kein islamisches, mußte
 over the local.religion PART this could no Islamic must
 ein *christlich* sich *nennendes* Land sein. ⁶²
 a Christian itself calling country be
 'The pin-up girl that pointed out the emergency exit in the airport bus at least immediately enlightened the guests as to the local religion; this could not be a Muslim country, it had to be a country that called itself Christian.'

Such intrapositions are possible as a result of focus split only.

As with the predicates in copula constructions, the extraposition of the predicate is usually impossible:

⁶⁰Züricher Tagesanzeiger, 09.03.1996, p. 57.

⁶¹Süddeutsche Zeitung, 05.01.1996, p. 904.

⁶²Süddeutsche Zeitung, 10.10.1996, p. 52.

- (173) a. Ich habe ihn für einen Lügner gehalten.
 I have him for a liar hold
 'I took him for a liar.'
- b. * Ich habe ihn gehalten für einen Lügner.
 I have him hold for a liar

However, in Eisenberg, 1998, I have found several extrapositions of predicative *als* phrases. Some of them are given in (174):

- (174) a. Die Normiertheit der Wortschreibung wird meist in einem
 the standardization of.the word.writing gets mostly in an
 noch höheren Maße als in der Syntax verstanden als eine
 even higher measure as in the syntax understood as a
 Angelegenheit der Form.⁶³
 matter of.the form
 'The spelling standards are usually regarded as a matter of form, even
 more so than when syntax is concerned.'
- b. In Analogie zum Phonem [...] ist die Formseite des Morphems
 in analogy to.the phoneme is the form.side of.the morpheme
 aufzufassen als »Menge von Allomorphen«.⁶⁴
 to.be.understood as a.mass of allomorphs
 'In analogy to the phoneme, the formal aspect of the morpheme is to
 be understood as a group of allomorphs.'

I leave it open whether the prohibition of extraposition is to be modeled as a strong preference rule or as a strict rule.

2.1.10.4 Fronting

The embedded predicate can be fronted alone, while the subject of the predicate stays behind in the *Mittelfeld*.

- (175) a. Gut sieht er aus.
 good looks he PART(out)
 'He looks good.'
- b. Komisch kommt er ihm vor.
 strange comes he him PART
 'He seems strange to him.'
- (176) a. Klug findet man ihn.
 smart finds one him
 'One considers him to be clever.'

⁶³In the main text of Eisenberg, 1998, p. 13. Another similar example with *verstehen* can be found on page 228 of Eisenberg's book.

⁶⁴In the main text of Eisenberg, 1998, p. 213.

- b. Für verrückt hält ihn keiner.
 for crazy holds him nobody
 'Nobody takes him to be crazy.'

The fronting of the matrix verb without the embedded predicate is impossible, as the following examples show:⁶⁵

- (177) a. ?? Ausgesehen hat er gut.
 PART.looked has he good
 'He looked good.'
- b. * Vorgekommen ist er mir komisch.
 PART.came is he me strange
 Intended: 'He seemed strange to me.'
- c. * Mir vorgekommen ist er komisch.
 me PART.came is he strange
- (178) a. * Gefunden hat er ihn klug.
 found has he him smart
 Intended: 'He considered him to be clever.'
- b. * Den Langweiler finden kann Jan nicht nett.⁶⁶
 the bore find can Jan not nice
 Intended: 'Jan can't find that bore nice.'

The examples in (177a,b) and (178a) are parallel to (82c) where a verb is fronted from the middle of the verbal complex and to (153b) where the copula is fronted without the adjective it embeds. One might expect (177c) and (178b) to be grammatical since *mir* is an argument of *vorkommen* and *den Langweiler* is an argument of *finden*, as passive data suggest that will be discussed below in Section 2.1.10.6. But (177c) and (178b) are ungrammatical for the same reasons (177a,b) and (178a) are: a part of the middle of a predicate complex is fronted.

Having shown that subject and object predicative constructions pattern with coherent constructions, I now turn to the control/raising distinction.

2.1.10.5 Expletive Predicates and Subjectless Constructions

As the examples in (179) show, the embedded predicate may have an expletive subject, but subjectless constructions are not allowed.

⁶⁵The example in (177a) seems to improve when the fronted verb is contrasted with another one.

- (i) Ausgesehen hat er gut, aber gerochen hat er schlecht.
 PART (out).looked has he good but smelled has he bad
 'He looked good, but he smelled bad.'

In (i) both verbs probably are analyzed as intransitive verbs that are modified by an adverb.

⁶⁶See Neeleman, 1994, p. 29 for an analogous example in Dutch.

- (179) a. Ihnen kommt es schon im Herbst relativ kalt
 them-DAT comes it-EXPL already in.the fall relatively cold
 vor [...] ⁶⁷
 PART(before)
 'It already seems to them to be relatively cold in fall.'
- b. Ich finde es zu kalt hier. ⁶⁸
 I find it-EXPL too cold here
- c. weil es der Mann in der Mensa zu laut findet.
 because it-EXPL the man in the commons too loud finds
 'because the man finds it too loud in the commons.'
- d. * weil ich mir warm finde.
 because I me warm find
 Intended: 'because I feel warm.'

The category of the raised subject is not specified. Therefore clausal subjects as in (161) on page 76 can also be raised. Note that the fact that subjectless constructions cannot be embedded under *finden* and the fact that sentences like those in (161), where the embedded predicate is subcategorized for a clause, are possible show that these clauses must indeed be subject clauses. It is not possible to analyze the clauses as objects of the adjective and the adjective as a subjectless predicate.

It is mysterious why the sentence in (180) is ungrammatical.

- (180) * weil ich es mir warm finde.
 because I it-EXPL me-DAT warm find

Subjectless predicates can be combined with dummy subjects, as (181) shows.

- (181) weil es mir (zu) warm ist.
 because it-EXPL me-DAT too warm is
 'because it is (too) warm.'

It should be possible to embed the lexical entry for *warm* as used in (181) under *finden*. Maybe the reason for this is that adjectives with dative complements are generally marked in these constructions.

- (182) a. ?? Ich finde die Frau ihrem Mann (ziemlich / sehr /
 I-NOM find the woman-ACC her man-DAT quite very
 zu) treu.
 too faithful
 'I consider the woman to be quite / very / too faithful to her husband.'

⁶⁷Mannheimer Morgen, 14.03.1998, Lokales; Für die „Nordländer“ ist unser Winter eher warm.

⁶⁸Pütz, 1982, p. 353.

- b. ? Ich finde ihn seiner selbst zu sicher.
 I-NOM find him-ACC his-GEN self too sure
 'I find him too sure of himself.'
- c. Ich finde ihn zu stolz auf seine Kinder.
 I find him too proud of his children
 'I consider him to be too proud of his children.'

To me, the example in (182b) where the adjective governs the genitive case and the one in (182c) where the adjective takes a prepositional object seem better than the example in (182a) with the dative object.

See also Reis (1976a, p. 11–12) for the observation that the embedding of complex adjective phrases under verbs like *finden* is marked. An embedding of a complex predicative AP that resembles (182b) in that the genitive is assigned by the adjective is shown in (183).

- (183) wenn die komplette Rezeption plötzlich des Englischen nur
 when the complete reception suddenly the English-GEN only
 rudimentär mächtig erscheint⁶⁹
 rudimentarily mighty seems
 'when the complete reception suddenly seems to have only a rudimentary command of English.'

Before discussing the passivization of object predicatives in the next section, I briefly look at examples that are used as evidence for Small Clause analyses. Wilder (1991, p. 218) argues that sentences like (184) have to be analyzed with *consider* and *make* embedding a Small Clause (a constituent that contains both *it* and the predicates *certain* and *unlikely*, respectively) since expletives do not appear in subcategorized positions.

- (184) a. I consider it certain that he will come.
 b. This makes it unlikely that he will come.

It is unclear whether this extraposition *it* is indeed expletive, but even if it is, this does not prove the Small Clause hypothesis since expletives can appear as accusative objects as (185) shows:

- (185) Er hat es weit / zum Professor gebracht.⁷⁰
 he-NOM has it-EXPL-ACC far to.the professor brought
 'He did very well.' / 'He made it to professor.'

Postal and Pullum (1988, p. 648) give English examples of the embedding of extraposition *it* under prepositions.

⁶⁹taz, 12.08.1999, p. 15.

⁷⁰See also Pütz, 1982, p. 351.

Because of data like (185), it is not justified to rule out expletives as subcategorized objects and hence, the examples in (184) cannot be used as evidence for Small Clause analyses.

2.1.10.6 Passive

Subject predicative constructions cannot be passivized, but object predicative constructions can. (186) and (187) show two active/passive pairs:

- (186) a. Ich finde ihn klug.
I-NOM consider him-ACC clever
b. Er wird klug gefunden.
he-NOM is clever found
'He is considered to be clever.'
- (187) a. Ich halte ihn für verrückt.
I-NOM hold him-ACC for crazy
'I take him to be crazy.'
b. Er wird für verrückt gehalten.
he-NOM is for crazy hold
'He is taken to be crazy.'

If passive is seen as a process that suppresses the subject theta role of a verb, it follows that subject predicative constructions do not allow for the passive since they are raising constructions and do not assign a semantic role to their subject. If the passive is analyzed so that the suppression of an argument results in the promotion of the remaining arguments, the facts in (186) and (187) are explained if one assumes that the accusatives in (186a) and (187a) are objects of the respective verbs. As the object of the matrix verb, the subject of the embedded predicate gets accusative in (186a) and (187a). In passive constructions the subject of the embedded predicate functions as the subject in the matrix clause and gets nominative.

Since object predicative verbs are raising verbs, the claim that passive with raising verbs is impossible cannot be upheld in this general form.

In Sections 2.1.4 to 2.1.10, I have presented examples of raising and control verbs that embed verbal or non-verbal elements. I have shown that it is reasonable to assume that the embedding head and the embedded element form a unit and that arguments of the embedded element can be permuted with the arguments of the matrix head. In what follows, I present Hinrichs and Nakazawa's analysis of the verbal complex and show how it can be extended to cover the data discussed so far.

2.2 The Analysis

2.2.1 Tense-Auxiliaries

Hinrichs and Nakazawa (1989b) introduced the concept of argument attraction to the HPSG framework. When a verbal complex is formed, two verbs are com-

bined and the resulting verbal complex inherits all arguments from both verbs. The resulting projection functions as a complex head.⁷¹ In their paper, Hinrichs and Nakazawa treat verbal complements as ordinary complements that are included in the SUBCAT list of their heads. It has, however, proven to be useful to distinguish the verbal complement from other complements (Chung, 1993; Rentier, 1994; Müller, 1997b; Kathol, 1998. See also the discussion in Section 2.3.5). For the purpose of representing verbal complement requirements for those complements that must be realized together with their head as part of a verbal complex, the feature XCOMP is introduced.⁷² Its value is a list that contains a *synsem* object if the verb selects for another complement that takes part in complex formation, and the empty list otherwise.

(188) shows the CATEGORY value for the stem entry of the future tense auxiliary *werden*.

(188) *werd-* ('will', future tense auxiliary, stem entry):

$$\left[\begin{array}{l} \text{SUBCAT } \boxed{1} \oplus \boxed{2} \\ \text{XCOMP } \langle \text{V[LEX+}, bse, \text{SUBJ } \boxed{1}, \text{SUBCAT } \boxed{2}, \text{XCOMP } \langle \rangle] \rangle \end{array} \right]$$

werden selects a verb or a verbal complex via XCOMP. All complements of this verbal complex ($\boxed{2}$) and the subject of the verbal complex ($\boxed{1}$) are raised. The instantiations of the lists under $\boxed{1}$ and $\boxed{2}$ may be the empty list. *werden* does not assign thematic roles to dependents of the embedded verb. Therefore no reference to elements possibly contained in SUBJ or SUBCAT is necessary.

The specification of the XCOMP value of the verbal complement of verbs like *werden* as the empty list ensures that the verbal complex that is embedded under *werden* is complete, i. e., sentences like (189b), in which the verb under *haben* is missing, are ruled out.

- (189) a. daß er dem Mann [[geholffen haben] wird].
 that he the man helped have will
 'that he will have helped the man.'
- b. * daß er dem Mann haben wird.
 that he the man have will

Lexical entries for the perfect auxiliaries (*haben/sein*) are completely analogous to (188) except for the verb form of the selected verbal complex.

As Hinrichs and Nakazawa (1994a) have shown, it is reasonable to assume a schema that licenses the verbal complex in addition to the Head-Argument Schema. In the following, I assume the Schema 4 to license head-cluster structures.

⁷¹See also Bierwisch, 1990 and Haider, 1993 for similar ideas.

⁷²The feature name is identical to the name of a grammatical function in LFG. Chung, Rentier, Kathol, and I used the feature names GOV, VCOMP, and VCOMPL. Since the value of XCOMP is not restricted to verbs (See Section 2.2.7 and Chapters 5 and 6), I decided to use the LFG name.

Schema 4 (Cluster Schema)*head-cluster-structure* \rightarrow

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

A head is combined with a complement that is selected via XCOMP ($\boxed{2}$). The remainder of the XCOMP list ($\boxed{1}$) is passed up to the mother node. Usually $\boxed{1}$ will be the empty list, but in coherent constructions with particle verbs as in (190) the XCOMP list of the matrix predicate contains two elements: the predicate that is embedded under the particle verb and the particle.

- (190) Es fing zu regnen an.
 it start to rain PART
 ‘It started to rain.’

Particle verbs will be discussed in Chapter 6 in more detail.

The specification of the LEX value of the embedded verbal complex in (188) is necessary to exclude spurious ambiguities which would result if we did not require the complement to be a verbal cluster. Note that to obtain this result, each of the other ID schemata must be marked as LEX—. ^{73,74} Without the appropriate LEX specifications, all three structures in (191) would be possible.

⁷³Note that this is the only purpose LEX has in my grammar. LEX has the value — if a head has been combined with a complement and + otherwise. So if an unsaturated verb is combined with an adjunct its LEX value is still +. This is not the way LEX is used by Pollard and Sag (1987, Chapter 6, 7) and therefore it might be reasonable to choose a different feature name. However, I decided to stick with the name LEX since this is the feature name that is used in the literature on the German verbal complex.

The saturated/unsaturated distinction together with the LEX+/- distinction is equivalent to the use of the features MIN and MAX in some GB-versions. For instance, Kolb and Thiersch (1991, p. 273) describe adjunction structures with MIN and MAX features of the head and its projection shared. In HPSG, the valence information of the head daughter and the mother are identical in head-adjunct structures, i. e., if the head daughter is saturated, the mother is too, and if the head daughter is not saturated, neither is the mother.

⁷⁴Kathol (2000, p. 75) claims that one needs two lexical entries for *haben* in order to analyze (i): i. e. one that takes a LEX+ complement and one that takes VPs.

- (i) Peter hat [_{VP} das Buch gekauft] und [_{VP} es dann seiner Schwester geliehen].
 Peter has the book bought and it then his sister lent

If the LEX value in coordinated structures is left unspecified, sentences like (i) can be analyzed with a lexical entry for *hat* that is analogous to (188) without problems. The embedding of verbal projections in verbal complexes is nothing unusual. It is known from the so-called third construction (Wunderlich, 1980; Kvam, 1980, p. 155; Uszkoreit, 1987, p. 151; den Besten and Rutten, 1989; Müller, 1999a, Chapter 17.5) and verb projection raising (Hafika, 1981, p. 723; Hinrichs and Nakazawa, 1994a, p. 25). For some examples see also footnote 2 on page 41.

- (191) a. er seiner Tochter ein Märchen [erzählen wird].
 he his daughter a fairytale tell wird
 ‘He will tell his daughter a fairytale.’
 b. er seiner Tochter [[ein Märchen erzählen] wird]].
 c. er [[seiner Tochter ein Märchen erzählen] wird]].

The LEX+ specification of the verbal complement of *werden* ensures that *erzählen* is combined with *wird* before any complement is combined with *erzählen*. Since the mother node of a head-argument structure is specified to be LEX−, the projections of *erzählen* in (191b,c) cannot be combined with *wird*. The mother in head-cluster structures is marked LEX + because it can, in turn, be embedded, as (189a) shows.

It is necessary to specify the XCOMP value of the head daughter in the Head-Argument Schema as the empty list to ensure that no element from the SUBCAT list is combined with a head before the cluster forming elements are combined. Schema 5 is the adapted version of the Head-Argument Schema.

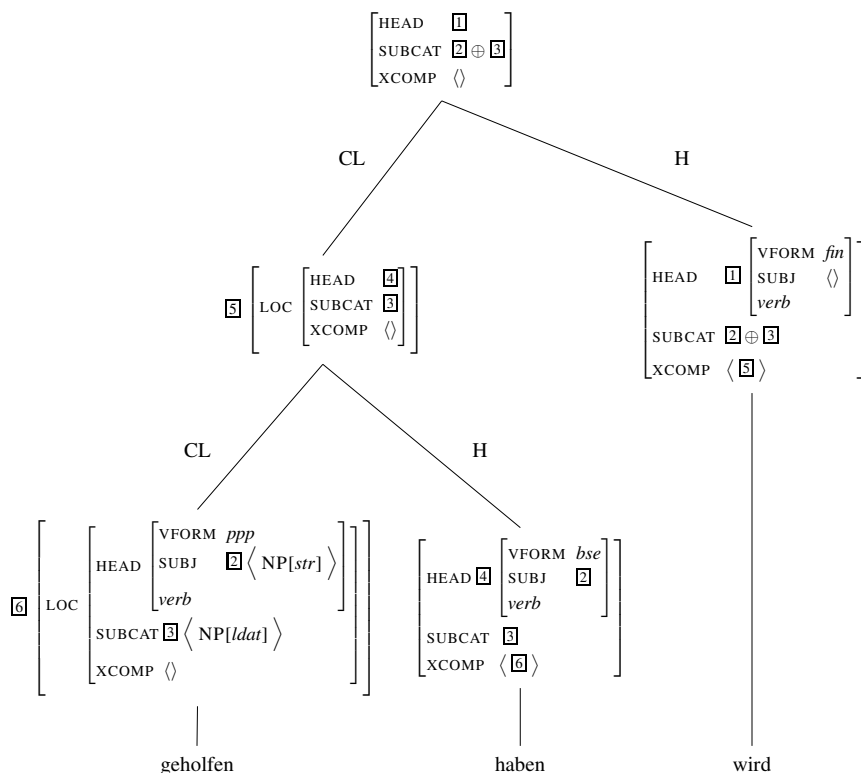
Schema 5 (Head-Argument Schema (final version))

head-argument-structure →

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

Since such a constraint on the XCOMP value of the head daughter is also needed for the other immediate dominance schemata, it can be stated as a constraint on the type *head-non-cluster-structure*.

How the analysis of the verbal complex in (189a) works in detail is shown in Figure 9 on the facing page. The perfect auxiliary *haben* embeds the participle *gehoffen* (a verb with VFORM *ppp*). Since *head-cluster-structure* is a subtype of *head-non-argument-structure* it inherits the constraints specified for structures of this type (for the type definition see (37) on page 22). The constraints ensure that the SUBCAT list of the head is identical to the SUBCAT list of the mother. Therefore the SUBCAT list of *gehoffen haben* is identical to the SUBCAT list of *haben*. The same is true for the SUBCAT list of *wird* and the SUBCAT list of the complete verbal complex *gehoffen haben wird*. At this point, it is very important to note that this mechanism of argument attraction does not add arguments to a head in syntax. The arguments of argument attracting heads are already specified in the lexicon. The point is that their form and meaning is underspecified. The actual instantiation of the information about dependents takes place when an argument-attracting

FIGURE 9 Analysis of the Verbal Complex: *daß er dem Mann geholfen haben wird*.

head is combined with the complement from which the arguments are attracted. The information about the subjects of the non-finite verbs is encoded in the value of SUBJ as one of the head features. In the lexical item of the non-finite *haben*, the SUBJ value ([2]) is identical to the SUBJ value of the embedded verb. Because of the Head Feature Principle (see (10) on page 7), the head information of *haben* ([4]) is projected to the mother node *geholfen haben*. In the lexical item for *wird*, the SUBCAT list is specified to be the concatenation of the SUBJ value and the SUBCAT value of the embedded verbal complex. Since in head-cluster structures no elements from SUBCAT lists get saturated, the combination of *geholfen haben* and *wird* has a SUBCAT list that is identical to the SUBCAT list of *wird* and hence, the verbal complex *geholfen haben wird* has a SUBCAT list that contains the subject and the object of *geholfen*, i.e., the SUBCAT list of *geholfen haben wird* is identical to the one of the simplex verb *hilft*.

Nothing has been said so far about the formation of the constituent order domains in predicate complexes. The constraint in (45) on page 28 was stated for structures of type *head-non-cluster-structure* only. If one assumes a domain for-

mation process parallel to the one of (45), the verbal complement of *wird* is inserted as one single object, *geholffen haben*, which cannot be interrupted by intervening material. As Kathol (1998, Chapter 4.1) argues, this is not adequate since there are certain orders in the verbal complex where governing heads interrupt other verbal chains. See also den Besten and Edmondson, 1983, p. 182; Meurers, 1997, Chapter 3.2.2; 2000, Chapter 3.2.1.3. Meurers (1997, Chapter 3.2.2) calls these orders *Zwischenstellung*. Examples are given in (192).

- (192) a. daß er das Examen bestehen wird können.
 that he the examination pass will can
 ‘that he will be able to pass the examination.’
 b. damit unser Lager von einer Lawine nicht getroffen hätte werden
 so.that our camp by an avalanche not hit has be
 können.⁷⁵
 be.able
 ‘So that our camp could not have been hit by an avalanche.’

So instead of inserting the complex *bestehen können* as one object into the domain of its head *wird*, all domain elements of the complex *bestehen können* are inserted into the domain of *wird*. (193) shows the formalization of the domain formation for predicate complexes. The domain elements that are contained in the domain of

- (193) Domain Formation (for the predicate complex):

$$\begin{array}{l} \text{head-cluster-structure} \rightarrow \\ \left[\begin{array}{l} \text{HEAD-DTR} | \text{DOM} \quad \boxed{1} \\ \text{NON-HEAD-DTRS} \quad \langle [\text{DOM} \boxed{2}] \rangle \\ \text{DOM} \quad \boxed{1} \circ \boxed{2} \end{array} \right] \end{array}$$

the cluster daughter are inserted into the domain of the governing head. Thus the verbal complex *bestehen können* in (192a) is a discontinuous complement of *wird*, the domain elements in the domain of *bestehen können*, i. e., the two lexical signs for *bestehen* and *können*, are inserted into the domain of *wird* and can be serialized there to the left and to the right of the head. The information about which element is the head of a verbal complex is contained in the domain elements since the head of a cluster structure can be identified by looking at the XCOMP values of the domain elements. Therefore linearization rules can refer to this information and rule out ungrammatical serializations. See Kathol, 1998, p. 246 for linearization rules for German and Bouma and van Noord, 1998 for a proposal for Dutch.

Now that the domain formation for head-cluster structures has been formalized, the analysis of (194) can be given in Figure 10 on the facing page.

⁷⁵Reinhold Messner, quoted from den Besten and Edmondson, 1983, p. 182.

- (194) Wird er dem Mann geholfen haben?
 will he the man helped have
 ‘Will he have helped the man?’

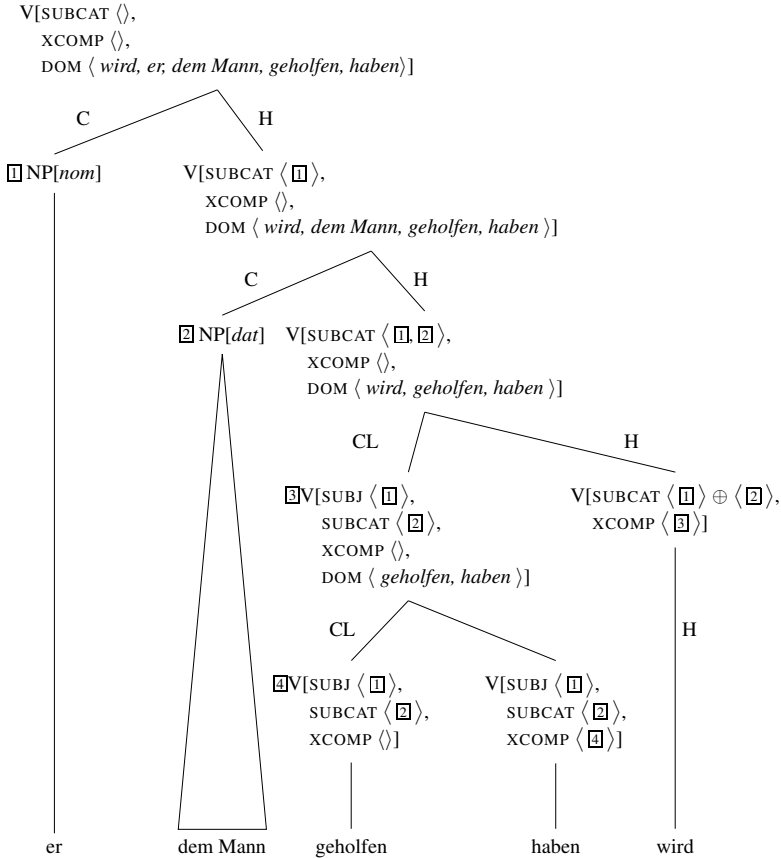


FIGURE 10 *Wird er dem Mann geholfen haben?*

Note that the dominance structure for the sentence in (194) is identical to the one for the verb-final sentence in (189a). The only difference is the serialization of the finite verb *wird*. The verbal complex is serialized discontinuously in the analysis of the verb-first sentence.

Another important thing to note here is that all subjects and complements of the verbs in verbal complexes like those in (189a) and (194) are raised to the highest verb. As arguments of the highest verb they are realized in head-argument relations by the same head. Therefore they are inserted in the same head domain and it is predicted that they can be permuted in the *Mittelfeld*.

It is also important to note here how the semantic roles are assigned. In GB publications, one finds proposals for θ -role percolation (Jaeggli, 1986, p. 602; Carrier and Randall, 1992; Neeleman, 1994). No such devices are necessary here. To see this, consider the combination of *helfen* ('to help') and *muß* ('has to') as used in the sentence (195).

- (195) Er muß dem Mann helfen.
 he has.to the man help
 'He has to help the man.'

The combination of the lexical entry for *helfen* ('help') in (34)—repeated here as (196)—and the lexical entry for *müssen* ('have to') in (197) yields (198).

- (196) *helfen* ('help', non-finite form):

CAT	HEAD	VFORM <i>bse</i>
		SUBJ $\langle \text{NP}[\textit{str}]_{[1]} \rangle$
SUBCAT		<i>verb</i>
		$\langle \text{NP}[\textit{ldat}]_{[2]} \rangle$
CONT	AGENT	[1]
	EXPERIENCER	[2]
	<i>helfen</i>	

- (197) *muß* ('have to', finite form):

CAT	HEAD	VFORM <i>fin</i>
		SUBJ $\langle \rangle$
SUBCAT		<i>verb</i>
		[1] \oplus [2]
XCOMP		$\langle \text{V}[\text{LEX+}, \textit{bse}, \text{SUBJ } [1], \text{SUBCAT } [2], \text{XCOMP } \langle \rangle]:[3] \rangle$
CONT	SOA [3]	
	<i>müssen</i>	

- (198) *helfen muß* ('has to help'):

CAT	HEAD	VFORM <i>fin</i>
		SUBJ $\langle \rangle$
SUBCAT		<i>verb</i>
		$\langle \text{NP}[\textit{str}]_{[1]}, \text{NP}[\textit{ldat}]_{[2]} \rangle$
XCOMP		$\langle \rangle$
CONT	SOA	[3]
	AGENT	[1]
	EXPERIENCER	[2]
	<i>helfen</i>	
	<i>müssen</i>	

The structure sharing of the indices of the arguments and the semantic roles does not change when the modal is combined with the main verb. So, no θ -roles need to be percolated. It is just arguments that are inherited and those stay linked to whatever they have been linked to in the lexicon.

2.2.2 Complex Fronting

In this section, I will explore examples like (199).

- (199) a. [Erzählen] wird er seiner Tochter ein Märchen.
 tell will he his daughter a fairytale
 ‘He will tell his daughter a fairytale.’
 b. [Ein Märchen erzählen] wird er seiner Tochter.
 a fairytale tell will he his daughter
 c. [Seiner Tochter ein Märchen erzählen] wird er.
 his daughter a fairytale tell will he

The examples show that the main verb can be fronted alone or together with one or two of its complements.

A number of authors⁷⁶ discuss examples like (200) in which more than one element is positioned in the *Vorfeld*.

- (200) [Alle Träume] [gleichzeitig] lassen sich nur selten
 all dreams-NOM simultaneously let themselves-ACC only rarely
 verwirklichen.⁷⁷
 realize
 ‘All dreams can seldom be realized at once.’

The question now is: Is there evidence that the elements before the finite verbs in (199b,c) form a phrase or could the sentences in (199b,c) be analyzed as multiple frontings? To see that the material before the finite verb is indeed one phrase consider the example in (201a). If *das Märchen*, *gestern*, and *erzählen* were three single fronted items, it would be impossible to explain why the sentences in (201b,c) have two readings whereas the sentence in (201a) has only one. In (201b,c) the adverb *gestern* can scope over all verbs in its coherence field, namely *erzählen* and *wollte*. In (201a) only the reading where *gestern* scopes over *erzählen* is available. The reason for this is that *das Märchen gestern erzählen* is a phrase. This phrase is a separate coherence field and adjuncts can only scope inside this field. (201d) shows a sentence where the adverb is extracted. The adverb scopes exactly as in (201b) and (201c), i. e., both readings are available. So, if (201a) were a case of multiple extractions, we would expect that both scope readings would be accessible.

⁷⁶See for instance Beneš, 1971; van de Felde, 1978, p. 135; Hoberg, 1981, p. 182, 1997, p. 1634; Haider, 1982, p. 17; Lühr, 1985; Fanselow, 1987, p. 99–100; 1993, p. 71; Kiss, 1995, p. 189; Müller, 2002c,b.

⁷⁷Brochure from Berliner Sparkasse, 1/1999.

- (201) a. Das Märchen gestern erzählen wollte er seiner Tochter.
 the fairytale yesterday tell wanted he his daughter
 'He wanted to tell his daughter the fairytale yesterday.'
- b. weil er das Märchen gestern seiner Tochter erzählen wollte.
 because he the fairytale yesterday his daughter tell wanted
 'because he wanted to tell his daughter the fairytale yesterday.'
- c. Er wollte das Märchen gestern seiner Tochter erzählen.
 he wanted the fairytale yesterday his daughter tell
- d. Gestern wollte er das Märchen seiner Tochter erzählen.
 yesterday wanted he the fairytale his daughter tell

Another set of examples that supports the assumption that the constituents before the finite verb form a phrase is (202). The examples in (202a,b) are instances of the so-called remote passive (see also Chapter 3.2.5). In remote passive constructions the object of a verbal complex is promoted to the subject of the whole construction. In (202a,b) the object of *zu reparieren* is simultaneously the object of *zu reparieren versucht* and as such it can be promoted to subject in the passive construction.

- (202) a. weil der Wagen zu reparieren versucht wurde.
 because the car-NOM to repair tried was
 'because an attempt was made to repair the car.'
- b. Der Wagen wurde zu reparieren versucht.
 the car-NOM was to repair tried
 'An attempt was made to repair the car.'
- c. * Der Wagen zu reparieren wurde versucht.
 the car-NOM to repair was tried
- d. Den Wagen zu reparieren wurde versucht.
 the car-ACC to repair was tried

The example in (202b) shows that the NP alone can be extracted in remote passive constructions. Now, if frontings like those in (199b,c) were multiple frontings of single constituents, it could not be explained why (202c) is ungrammatical. If we assume instead that *der Wagen zu reparieren* and *den Wagen zu reparieren* are VPs in (202c) and (202d), respectively, it follows from the principles of case assignment that the object in the VP has to bear accusative case and therefore (202c) is ruled out.

In any case, it should be clear from the discussion above that the elements in the *Vorfeld* in (199b,c) and (202d) are verbal projections. In what follows, I will provide an analysis that treats the elements to the left of the finite verb as constituents.

The analysis of the verbal complex that was provided in Section 2.2.1 excludes spurious ambiguities in the *Mittelfeld* by the constraint that the embedded verbal

complex has to be LEX+. Therefore only the structure (203a) is admitted by the grammar. The embedding of the phrases *ein Märchen erzählen* and *seiner Tochter ein Märchen erzählen* under *müssen* as in (203b,c) is excluded.

- (203) a. Er wird seiner Tochter ein Märchen [erzählen müssen].
 he will his daughter a fairytale tell must
 ‘He will have to tell his daughter a fairytale.’
 b. Er wird seiner Tochter [[ein Märchen erzählen] müssen]].
 c. Er wird [[seiner Tochter ein Märchen erzählen] müssen]].

As was pointed out by Pollard (1996, Section 4), precisely those constituents that have to be avoided in the *Mittelfeld* are needed in the *Vorfeld*:

- (204) a. [Ein Märchen erzählen] wird er seiner Tochter müssen.
 b. [Seiner Tochter ein Märchen erzählen] wird er müssen.

This is problematic for all theories which assume that all phrases that appear in the *Vorfeld* can also appear in the *Mittelfeld*. For instance, Jacobs (1991, p. 56) assumes that linear precedence rules have to be checked in a reconstruction of the sentence without fronting. He assumes that (205a) is bad because of the violation of linearization rules in the reconstructed version in (205b).

- (205) a. ?? [Es geschenkt] hat er dem Kind.
 it given has he the child
 ‘He gave it to the child as a present.’
 b. ?? weil er dem Kind es geschenkt hat.
 because he the child it given has

However, this cannot be the explanation since (206a) is as bad as (205a), but (206b) is fine.

- (206) a. ?? [Es gelesen] hat er.
 it read has he
 ‘He read it.’
 b. weil er es gelesen hat.
 because he it read has

Furthermore, for the sentence (13a)—repeated here as (207a)—this approach predicts that (207c) is better than (207a) since (207b) is the normal linearization for this sentence.

- (207) a. [Der Nachwelt hinterlassen] hat sie [eine
 the after-world-DAT behind.let has she-NOM an
 aufgeschlagene Hör zu und einen kurzen Abschiedsbrief].⁷⁸
 open-hit Hörzu-ACC and a short farewell.letter-ACC
 ‘What she left posterity was an open Hörzu (magazine listing radio
 and TV shows) and a brief letter of farewell.’

⁷⁸taz, 18.11.1998 p. 20.

- b. weil sie der Nachwelt eine aufgeschlagene Hör zu und einen kurzen Abschiedsbrief hinterlassen hat.
- c. ?? Eine aufgeschlagene Hör zu und einen kurzen Abschiedsbrief hinterlassen hat sie der Nachwelt.

The sentence in (207c) hardly makes any sense, and situations in which it could be uttered are hard to imagine.

Furthermore, Reis (1980, p. 83) and Haider (1990b, p. 95) used the examples in (208)–(209) to show that it is not reasonable to assume that the fronted projection corresponds to a position in the *Mittelfeld*.

- (208) a. Man wird ja wohl noch fragen dürfen, ob einer links
one will yes well still ask may whether somebody left
oder rechts wählt.
or right votes
'It should be allowed to ask somebody whether he votes for left or for right-wing parties.'
- b. [Fragen, ob einer links oder rechts wählt,] wird man ja wohl noch dürfen.
- c. * Man wird ja wohl noch [fragen, ob einer links oder rechts wählt,] dürfen.
- (209) a. [Hunde füttern, die Hunger haben,] würde wohl jeder.
dogs feed that hunger have would well everyone
'Presumably everyone would feed dogs that are hungry.'
- b. * daß wohl jeder [Hunde füttern, die Hunger haben,] würde.
- c. daß wohl jeder [Hunde, die Hunger haben,] füttern würde.
- d. daß wohl jeder Hunde füttern würde, die Hunger haben.

In (208a) the complement clause of *fragen* is positioned to the right of the verbal complex *fragen dürfen*. If *fragen* is fronted, it can constitute the right sentence bracket in the *Vorfeld* constituent. The extraposed complement clause is adjacent in (208b). If the material that is located in the *Vorfeld* in (208b) is shifted back to the beginning of the verbal complex, the sentence is rendered ungrammatical (208c). This shows that *fragen* and its complement clause do not always form a continuous constituent. (209) is a similar example with an NP and an extraposed relative clause.

Instead of assuming a reconstruction of *Vorfeld* material in the *Mittelfeld*, I assume that the complex *Vorfeld* and the *Mittelfeld* with the verbal complex constitute separate topological domains in which elements are ordered according to the linearization constraints that hold in general. Elements may be extraposed in the topological field of the constituent located in the *Vorfeld* resulting in sentences

like (208b) and (209a) and they can be extraposed in the topological area that contains the *Mittelfeld* and the verbal complex resulting in sentences like (208a) and (209d).

Very complicated mechanisms have been introduced to cope with the problem of unwanted structures in the *Mittelfeld* (Nerbonne, 1994; Hinrichs and Nakazawa, 1994b, 1999). Müller, 1997b; Müller, 1999a, Chapter 18, and Meurers, 1999a independently suggest the following solution to the problem: If it is the case that an embedded verb or verbal complex has to be LEX+ when verb and complement are combined locally, and if it is the case that this does not hold if a nonlocal dependency is involved, then the simplest solution is not to view LEX as a local feature. If one assumes that LEX lives under the path SYNSEM, instead of SYNSEM|LOC|CAT, as suggested in Pollard and Sag, 1994, p. 22, footnote 8, then the problem turns into a non-issue.

Figure 11 on the next page shows the analysis of the sentence in (210).

- (210) [Seiner Tochter erzählen] wird er das Märchen.
 his daughter tell will he the fairytale
 ‘He will tell his daughter the fairytale.’

In Figure 11, a trace functions as a verbal complement. This is for explanatory purposes only. In Müller, 1997b; 1999a, Chapter 18, I use a unary schema for the introduction of the nonlocal dependency. See Chapter 6.2.5.1 for a discussion of traces and alternative approaches. Note that *seiner Tochter erzählen* is not a maximal projection. In the grammar developed here, the type of constituents that may appear in the *Vorfeld* is not restricted by \bar{X} -theoretic assumptions. Instead, the restrictions come from the representation of valence properties in the lexicon and general conditions on extraction that are also part of the lexical information.

For sentences like (211), I assume that the adjunct modifies the trace or a predicate complex that contains the trace.

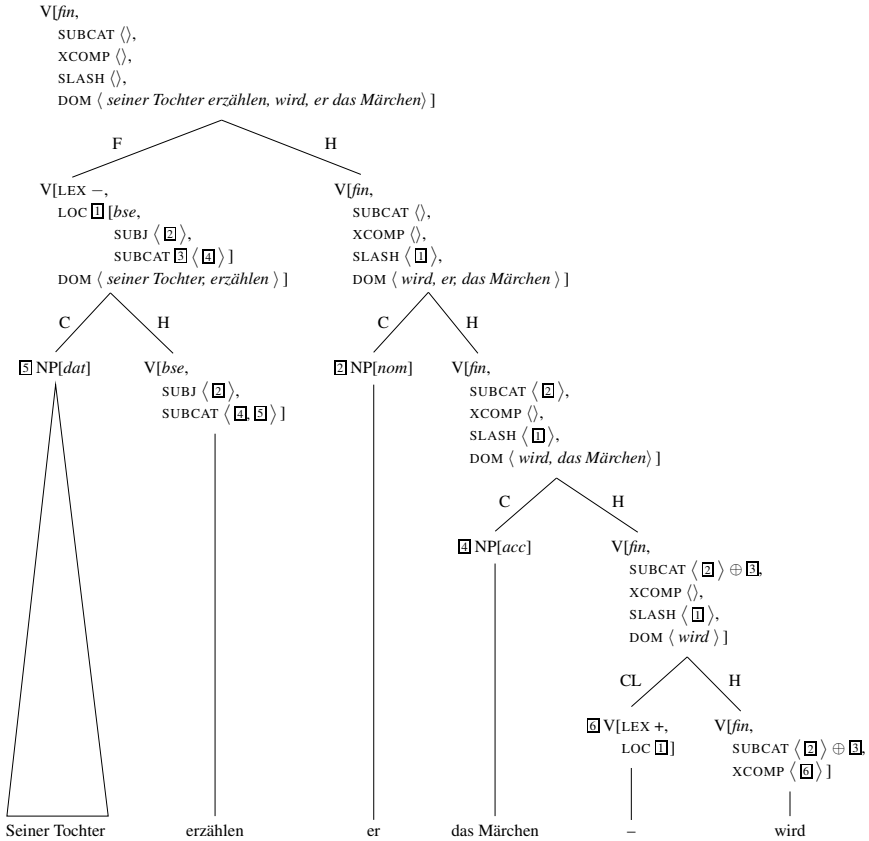
- (211) [Solche Bücher schenken]_i sollte man Kindern lieber nicht _i.
 such books give should one children rather not
 ‘It is better not to give children such books as a present.’

I do not assume a trace inside of the fronted projection that corresponds to the adjunct in the *Mittelfeld*, as is sometimes done in GB.

Sentences like (82c), repeated as (212), are ruled out because *wird* selects a complement in *bse*-form that has the empty list as its XCOMP value, i.e. a complete verbal complex.

- (212) * Müssen wird er ihr ein Märchen erzählen.
 must will he her a story tell

Since *müssen* is not a complete verbal complex, the corresponding trace contains an element in XCOMP and hence violates the requirements of *wird*. As *erzählen*

FIGURE 11 Analysis of *Seiner Tochter erzählen wird er das Märchen*.

does not appear in any SUBCAT list, it is not possible for the verb to count as an argument of the fronted verbal complex that is saturated in the *Mittelfeld*.

Note that the following example that was discussed by De Kuthy and Meurers (2001) is ruled out since *das Pferd* and *müssen* cannot be combined since *müssen* has an element in XCOMP and the Head-Argument Schema (Schema 5 on page 88) excludes elements with a non-empty XCOMP value as heads.

- (213) * Das Pferd müssen wird er verkaufen.
 the horse have.to will he sell
 'He will have to sell the horse.'

Having introduced a modified version of Hinrichs and Nakazawa's analysis of the verbal complex and having provided an analysis of partial constituent fronting, I now turn to the details of the analyses of various raising and control verbs.

2.2.3 Subject Raising Verbs

In Section 2.1.3.2, I showed that raising constructions should be analyzed as involving the identity of syntactic and semantic information of the raised elements and that control constructions should be treated as coindexing between the controller and the controlled element. This analysis is also assumed in LFG (Andrews, 1982; Neidle, 1982; Bresnan, 1982a, p. 396) and in the work of Pollard and Sag (1994, Chapter 7), Kiss (1995), and other authors working in the HPSG paradigm.

The analysis of coherent and incoherent constructions with raising and control verbs that I present in the next sections builds on work by Kiss (1995). It differs from the analyses proposed by Kiss in assuming a special valence feature for coherent constructions (XCOMP) and a special schema for predicate complex formation (Schema 4 on page 87). For a discussion of Kiss' proposal see Section 2.3.

(214) shows the LOCAL value of *scheinen* ('seem').⁷⁹

- (214) *schein-* ('seem', subject raising verb, coherent construction + argument attraction):

$$\left[\begin{array}{l} \text{CAT} \\ \text{CONT} \end{array} \left[\begin{array}{l} \text{SUBCAT } \boxed{1} \oplus \boxed{2} \\ \text{XCOMP } \langle \text{V}[\text{inf}, \text{LEX}+, \text{SUBJ } \boxed{1}, \text{SUBCAT } \boxed{2}]:\boxed{3} \rangle \\ \text{SOA } \boxed{3} \\ \textit{scheinen} \end{array} \right] \right]$$

The subject of the embedded predicate is raised if the embedded predicate has a subject. The finite form of *scheinen* has both the subject and the complements of the embedded verb in its SUBCAT list. The possibility of permuting these elements in the *Mittelfeld* is predicted. The situation is analogous to tense auxiliaries. See page 91.

For phase verbs there is also an entry for the coherent construction that has a structure like (214). In addition, there is a lexical entry for the incoherent construction that has the form that is shown in (215).^{80,81}

- (215) *anfang-* ('start', incoherent version, raising verb, phase verb):

$$\left[\begin{array}{l} \text{CAT} \\ \text{CONT} \end{array} \left[\begin{array}{l} \text{SUBCAT } \boxed{1} \oplus \langle \text{VP}[\text{inf}, \text{LEX}-, \text{SUBJ } \boxed{1}]:\boxed{2} \rangle \\ \text{XCOMP } \langle \rangle \\ \text{SOA } \boxed{2} \\ \textit{anfangen} \end{array} \right] \right]$$

⁷⁹Di Sciullo and Williams (1987, p. 37) propose a function composition approach for English *seem*. They assume that *seems* is a functor and that the argument structure of *seems sick* is identical to the argument structure of *sick*.

⁸⁰What (215) shows is actually the result of the combination of the particle *an* with a lexical entry that has the PHON value *fangen*. The details of the analysis of *anfangen* will be discussed in Chapter 6.2.4.

⁸¹Another lexical entry for phase verbs is needed since with an agentive subject they behave like control verbs. See also Perlmutter, 1970.

The entry in (215) selects for an infinitive VP, i. e. a saturated verbal projection with *VFORM inf*. This VP is an ordinary complement, a maximal projection, and therefore may be intraposed or extraposed. The VP constitutes a separate serialization and scope domain, i. e. a separate coherence field.

Note that the LEX value of intransitive verbs like *schlafen* is not specified in the lexicon. Therefore intransitive verbs can combine with the lexical entry (215) without applying a unary projection that projects LEX+ to LEX– verbs.

2.2.4 Subject Control

The lexical entries in (216) and (218) show the incoherent and coherent version for the control verb *versuchen* ('try').

(216) *versuch-* ('try', incoherent version):

CAT	SUBCAT \langle NP[<i>str</i>] _[1] , VP[<i>inf</i> , LEX–, SUBJ \langle NP[<i>str</i>] _[1] \rangle]: _[2] \rangle	
	XCOMP \langle	
CONT	AGENT _[1]	
	SOA _[2]	
	<i>versuchen</i>	

In the incoherent version a VP is embedded, whereas in the coherent version the verbal complement is selected via XCOMP. The subjects of the embedded verbal element are not identical to the subject of the matrix verb since in control constructions the case values of the controller and the controllee may differ. In fact, the controller and the controllee may even differ in syntactic category, as was shown in Section 2.1.3.2. The case difference can even be observed with subject control verbs, as (217) shows.

- (217) Er ließ den Jungen und den Mann versuchen, einer neben dem
 he let the boy-ACC and the man-ACC try one-NOM next the
 anderen einzuschlafen.
 other PART (in).to.sleep
 'He let the boy and the man try to sleep next to each other.'

In (217) the subject of *versuchen* gets accusative since it is realized in an AcI construction. Nevertheless, the subject of the controlled infinitive is nominative, as the case agreement in the adjunct phrase shows. With accusative in the adjunct phrase, (217) would be ungrammatical.

The reference to the controlled subject also ensures that impersonal constructions cannot be embedded under control verbs. The abbreviation NP_[1] stands for a referential noun phrase. Therefore the embedding of expletive predicates is also excluded.

(218) *versuch-* ('try', coherent version):

$$\left[\begin{array}{l} \text{CAT} \\ \text{CONT} \end{array} \left[\begin{array}{l} \text{SUBCAT} \left\langle \text{NP}[\text{str}] \boxed{1} \right\rangle \oplus \boxed{2} \\ \text{XCOMP} \left\langle \text{V}[\text{inf}, \text{LEX}+, \text{SUBJ} \left\langle \text{NP}[\text{str}] \boxed{1} \right\rangle, \text{SUBCAT} \boxed{2}] : \boxed{3} \right\rangle \\ \text{AGENT} \boxed{1} \\ \text{SOA} \boxed{3} \\ \text{versuchen} \end{array} \right] \right]$$

2.2.5 Object Raising Verbs: AcI-Verbs

The description in (219) shows the relevant aspects of the CAT value of object raising verbs:

(219) Object Raising Verbs:

$$\left[\begin{array}{l} \text{SUBCAT} \left\langle \text{NP}[\text{str}] \right\rangle \oplus \boxed{1} \oplus \boxed{} \\ \text{XCOMP} \left\langle [\text{SUBJ} \boxed{}] \right\rangle \end{array} \right]$$

The subject of the embedded predicate is raised to the object of the matrix verb, if the embedded verb has one. Otherwise $\boxed{}$ is the empty list. If the subject of the embedded predicate is an NP subject, it has structural case and therefore it surfaces as accusative in active sentences and as nominative in passive sentences, provided the object raising verb allows for the passive.

(220) is a further specification of (219). The category of the embedded predicate is specified to be *verb* and the form of the verb to be *bse*.

(220) AcI Verbs:

$$\left[\begin{array}{l} \text{SUBCAT} \left\langle \text{NP}[\text{str}] \right\rangle \oplus \boxed{1} \oplus \boxed{2} \\ \text{XCOMP} \left\langle \text{V}[\text{bse}, \text{LEX}+, \text{SUBJ} \boxed{1}, \text{SUBCAT} \boxed{2}] \right\rangle \end{array} \right]$$

If the embedded verb has a subject, it is raised to the object of the AcI verb ($\boxed{1}$). The other complements of the embedded verb are also raised and therefore the subject of the AcI verb, the subject of the embedded verb, and other complements of the embedded verb are complements of the complex that is formed by the AcI verb and the dependent verbal element. Being subject to the constraints that were discussed in Section 2.1.6.2, all these elements may be permuted in their head domain.

The lexical entry for a perception verb like *sehen* is shown in (221).^{82,83}

⁸²Heinz and Matiaszek (1994, p. 231) and Suchsland (1997, p. 164) assume that *sehen* embeds a VP. With such an analysis one has to assume a clause union analysis à la Reape (1994) to explain why VP elements can be scrambled with other elements that depend on the matrix verb. Some problems of Reape's analysis will be discussed in Section 2.3.1.

⁸³Kiss (1995, p. 217) gives a similar lexical entry for *sehen*, but he requires that the embedded verb have a subject by instantiating $\boxed{2}$ with $\langle \text{NP} \rangle$. This rules out sentences like (128b).

(221) *sehen* ('see', AcI Verb):

CAT	SUBCAT	$\langle \text{NP}[\text{str}]_{\boxed{1}} \rangle \oplus \boxed{2} \oplus \boxed{3}$
	XCOMP	$\langle \text{V}[\text{bse}, \text{LEX}+, \text{SUBJ } \boxed{2}, \text{SUBCAT } \boxed{3}:\boxed{4}] \rangle$
CONT	EXPERIENCER	$\boxed{1}$
	SOA	$\boxed{4}$
	<i>sehen</i>	

The semantic contribution of the embedded verb ($\boxed{4}$) is linked to the SOA role of *sehen* and the subject of *sehen* is linked to the EXPERIENCER role ($\boxed{1}$). The raised subject of the embedded predicate—if there is one—does not get assigned a role. This was motivated on pages 63–64.

2.2.6 Object Control

(222) and (223) show the LOCAL values of the lexical entries for the object control verb *erlauben* ('permit').

(222) *erlaub-* ('permit', object control verb, incoherent version):

CAT	SUBCAT	$\langle \text{NP}[\text{str}]_{\boxed{1}}, \text{NP}[\text{ldat}]_{\boxed{2}} \rangle \oplus$
	XCOMP	$\langle \text{VP}[\text{inf}, \text{LEX}-, \text{SUBJ } \langle \text{NP}[\text{str}]_{\boxed{2}} \rangle]:\boxed{3} \rangle$
CONT	AGENT	$\boxed{1}$
	EXPERIENCER	$\boxed{2}$
	SOA	$\boxed{3}$
	<i>erlauben</i>	

(223) *erlauben* ('permit', object control verb, coherent version):

CAT	SUBCAT	$\langle \text{NP}[\text{str}]_{\boxed{1}}, \text{NP}[\text{ldat}]_{\boxed{2}} \rangle \oplus \boxed{3}$
	XCOMP	$\langle \text{V}[\text{inf}, \text{LEX}+, \text{SUBJ } \langle \text{NP}[\text{str}]_{\boxed{2}} \rangle, \text{SUBCAT } \boxed{3}:\boxed{4}] \rangle$
CONT	AGENT	$\boxed{1}$
	EXPERIENCER	$\boxed{2}$
	SOA	$\boxed{4}$
	<i>erlauben</i>	

Again, the dative complement of the matrix verb is coindexed with the subject of the controlled infinitive. The specification of the subject of the embedded infinitive as referential NP excludes both expletive subjects and impersonal constructions.

In the coherent construction the dative complement and the complements of the embedded infinitive are members of the same SUBCAT list, including the subject when the matrix verb is finite. All these elements depend on the same head and their permutability is therefore predicted.

Having described verbal complexes and incoherent constructions in which a VP complement is embedded, I now turn to predicate complexes that contain non-verbal material.

2.2.7 Copula Constructions

In Müller, 1999a, p. 314, I suggested the following CAT value for the copula:

(224) *sei-* (copula):

$$\left[\begin{array}{l} \text{SUBCAT } \boxed{1} \oplus \boxed{2} \\ \text{XCOMP } \langle \text{ADJ}[\text{MOD } \textit{none}, \text{PRD } +, \text{SUBJ } \boxed{1}, \text{SUBCAT } \boxed{2}, \text{XCOMP } \langle \rangle, \text{LEX } +] \rangle \end{array} \right]$$

This copula is analogous to the lexical entry for the auxiliary *werden* which was given in (188). The copula embeds a predicative complement, the SUBJ and the SUBCAT values of which are attracted. Again, no thematic roles are assigned to the elements that are raised from the embedded predicate. Since the value of the SUBJ feature is not instantiated, subjectless predicates and predicates with expletive subjects may be embedded. Examples of the cases that have to be covered are repeated in (225):

- (225) a. Am Montag ist schulfrei.
at.the Monday is school.free
'There is no school on Monday.'
- b. Ihm wurde schlecht.
him-DAT got bad
'He got sick.'
- c. In der Mensa ist es laut.
in the commons is it-EXPL loud
'It is loud in the commons.'
- d. Er ist klug.
he is smart
- e. Er ist seiner Frau treu.
he is his wife faithful
'He is faithful to his wife.'

The SUBJ and SUBCAT values for the adjectives in (225) are given in (226).

- | (226) | SUBJ | SUBCAT |
|---------------|---|--|
| a. schulfrei: | $\langle \rangle$ | $\langle \rangle$ |
| b. schlecht: | $\langle \rangle$ | $\langle \text{NP}[\textit{ldat}] \rangle$ |
| c. laut: | $\langle \text{NP}[\textit{str}]_{\text{expl}} \rangle$ | $\langle \rangle$ |
| d. klug: | $\langle \text{NP}[\textit{str}] \rangle$ | $\langle \rangle$ |
| e. treu: | $\langle \text{NP}[\textit{str}] \rangle$ | $\langle \text{NP}[\textit{ldat}] \rangle$ |

When the finite form of the copula is combined with an entry like *treu*, the subject and the object of the adjective are raised by the copula. Both NPs are then dependents of the complex head *treu sein* and can be serialized in any order in the domain of their head.

- (227) a. weil niemand ihr treu war.
 because nobody-NOM her-DAT faithful was
 ‘because nobody was faithful to her.’
 b. weil ihr niemand treu war.
 because her-DAT nobody-NOM faithful was

Examples like (148b)—repeated here as (228b)—are ruled out by the very general linearization constraint in (229):⁸⁴

- (228) a. Karl ist auf seinen Sohn stolz gewesen.
 Karl is on his son proud been
 ‘Karl was proud of his son.’
 b. *Karl ist gewesen auf seinen Sohn stolz.
 Karl is been on his son proud

- (229) CLUSTER-DTR [FLIP–] < V[LEX+, INITIAL–]

This linearization rule holds for all predicate complexes except those where *Oberfeldumstellung* occurs. In verbal complexes with *Oberfeldumstellung*, the embedded verb has + as the value of FLIP (See Hinrichs and Nakazawa, 1994a for details on *Oberfeldumstellung*).

2.2.8 Subject and Object Predicatives

For subject predicative verbs like *erscheinen* (‘seem’), I assume a lexical entry that is very similar to the lexical entry for the copula that was presented in (224) on the preceding page.

- (230) *erschein-* (‘seem’):
- $$\left[\begin{array}{l} \text{CAT} \\ \text{CONT} \end{array} \left[\begin{array}{l} \text{SUBCAT} \left\langle \boxed{1}, (\text{NP}[\text{ldat}] \boxed{2}) \right\rangle \oplus \boxed{3} \\ \text{XCOMP} \left\langle \text{ADJ}[\text{PRD} +, \text{SUBJ} \langle \boxed{1} \rangle, \text{SUBCAT} \boxed{3}, \text{XCOMP} \langle \rangle] : \boxed{4} \right\rangle \\ \text{EXPERIENCER} \boxed{2} \\ \text{SOA} \boxed{4} \\ \textit{erscheinen} \end{array} \right] \right]$$

The sentence (231) is analyzed as follows: The embedded adjective (*klug*) and *erscheinen* form a complex head, the subject of the adjective is raised to the subject of *klug erscheinen*. The dative NP is an optional complement of *erscheinen*.

⁸⁴See Hoeksema, 1991a, p. 698 for a similar rule.

- (231) weil mir das klug erscheint.
 because me-DAT this smart seems
 ‘because this seems smart to me.’

The lexical entry for *klug* is shown in (232):

- (232) *klug* (‘clever’):

CAT	HEAD	SUBJ	\langle NP[<i>str</i>] _[1] \rangle	PRD	+	<i>adj</i>
CONT	SUBCAT	XCOMP	\langle	\rangle		
CONT	THEME	_[1]				<i>klug</i>

The structure in (233) is the result of combining *erscheint* with *klug*:

- (233) *klug erscheint* (‘seems to be clever’):

CAT	SUBCAT	\langle NP[<i>str</i>] _[1] , (NP[<i>ldat</i>] _[2]) \rangle	\rangle
CONT	XCOMP	\langle	\rangle
CONT	EXPERIENCER	_[2]	
CONT	SOA	THEME	_[1]
CONT		<i>klug</i>	
CONT		<i>erscheinen</i>	

The subject NP of the embedded predicate is the first NP with structural case in the SUBCAT list. It therefore gets nominative case (see Principle 1 on page 15). Since both elements depend on the same head, their permutability in the *Mittelfeld* can be accounted for.

(234) is an example in which the value of _[3] in (230) is instantiated as a nonempty list.

- (234) weil mir des Englischen keiner mächtig erschien.
 because me-DAT the English-GEN nobody-NOM mighty seems
 ‘because nobody seemed to me to have command of English.’

The genitive object of *mächtig* is raised to the higher predicate.

Note that the entry in (230) differs from the entry for the copula in (224) in requiring the SUBJ value of the embedded predicate to be a singleton list. Because of this constraint, subjectless constructions are excluded. Since the form of the element in SUBJ is not restricted, the embedding of expletive predicates is still possible.⁸⁵ This correctly captures the data discussed in Section 2.1.10.5.

⁸⁵Kiss (1995, p. 217–218) uses such a specification of the SUBJ value of the embedded predicate for *sehen* (‘to see’).

The analysis of object predicative verbs like *finden* is very similar. The only difference is that the subject of the embedded predicate is raised to object instead of becoming the subject:

(235) *find-* ('find'):

$$\left[\begin{array}{l} \text{CAT} \left[\begin{array}{l} \text{SUBCAT} \langle \text{NP}[\text{str}]_{\boxed{1}}, \boxed{2} \rangle \oplus \boxed{3} \\ \text{XCOMP} \langle \text{ADJ}[\text{PRD} +, \text{SUBJ} \langle \boxed{2} \rangle, \text{SUBCAT} \boxed{3}, \text{XCOMP} \langle \rangle]:\boxed{4} \rangle \end{array} \right] \\ \text{CONT} \left[\begin{array}{l} \text{EXPERIENCER} \boxed{1} \\ \text{SOA} \boxed{4} \\ \textit{finden} \end{array} \right] \end{array} \right]$$

The sentence (236) is analyzed as follows: The embedded adjective (*klug*) and *finden* form a complex head, the subject of the adjective is raised to the object of *klug finden*.⁸⁶

(236) weil ich ihn klug finde.
because I-NOM him-ACC clever find
'because I consider him to be clever.'

The combination of *finden* and *klug* is shown in (237).

(237) *klug finde* ('find smart'):

$$\left[\begin{array}{l} \text{CAT} \left[\begin{array}{l} \text{SUBCAT} \langle \text{NP}[\text{str}]_{\boxed{1}}, \text{NP}[\text{str}]_{\boxed{2}} \rangle \\ \text{XCOMP} \langle \rangle \end{array} \right] \\ \text{CONT} \left[\begin{array}{l} \text{EXPERIENCER} \boxed{1} \\ \text{SOA} \left[\begin{array}{l} \text{THEME} \boxed{2} \\ \textit{klug} \end{array} \right] \\ \textit{finden} \end{array} \right] \end{array} \right]$$

Again, both elements depend on the same head, and thus their permutability in the *Mittelfeld* can be explained. The SUBCAT list contains two NPs with structural case. The first NP gets nominative and the second one accusative. In passive

⁸⁶Chomsky (1957, p. 76) suggests treating *considers incompetent* as a complex predicate because of passive examples like (i.b):

- (i) a. Everybody in the lab considers John incompetent.
- b. John is considered incompetent by everybody in the lab.

He assumes that both (i.a) and (i.b) are derived from (ii):

- (ii) Everybody in the lab considers incompetent John.

Other complex predicate analyses have been suggested for instance by Dowty (1979), Bach (1979, p. 518), Di Sciullo and Williams (1987, p. 37–38), Larson (1988), Hoeksema (1991a, p. 671), and Williams (1997).

sentences, the first NP is suppressed. The second NP becomes the first one and therefore gets nominative. The details of the passive analysis will be provided in Chapter 3.

An interesting case is still open: predicates that embed a phrasal complement with *als*, *für*, or *wie*:

- (238) Man hält ihn für klug.
 one-NOM holds him-ACC for clever
 ‘One considers him to be clever.’

For these examples, I suggest an entry for *als* and *für* of the form in (239).⁸⁷

- (239) entry for *für* as used in predicative constructions:

CAT	HEAD	<div> <div>PFORM</div> <div><i>für</i></div> </div> <div> <div>SUBJ</div> <div>1</div> </div> <div> <div></div> <div><i>prep</i></div> </div>
	SUBCAT	<div> <div>XP[PRD+, SUBJ 1]:</div> <div>2</div> </div>
	XCOMP	<div> <div></div> <div>⟨</div> </div>
	CONT	2

The form of the preposition-like element is selected by the matrix verb, so there has to be a way to distinguish between *als* and *für*. This is done via the selection of a maximal projection of entries like (239) with an appropriate PFORM value. The element in (239) takes over both the subject (1) and the semantic contribution (2) of the embedded predicate. The combination of *klug* and *für* yields (240).

- (240) *für klug* as used in predicative constructions:

CAT	HEAD	PFORM <i>für</i>	SUBJ 1	<i>prep</i>
SUBCAT	XCOMP	THEME 1	<i>klug</i>	
CONT				

This phrase is directly embedded under *halten*.⁸⁸

⁸⁷The *für*-phrase must be distinguishable from other predicative phrases since it cannot appear in copula constructions:

- (i) *Karl ist für glücklich.
 Karl is for happy

⁸⁸Suchsland (1995, p. 88) suggests a lexical entry similar to (i) for a predicate of the *halten* class.

(241) *halt-* ('take for' non-finite form):

CAT	SUBCAT \langle NP[<i>str</i>] _[1] , _[2] \rangle	
	XCOMP \langle PP[PFORM <i>für</i> , PRD +, SUBJ \langle _[2] \rangle]: _[3] \rangle	
CONT	EXPERIENCER _[1]	
	SOA _[3]	
	<i>halten-für</i>	

Note that *für klug* cannot appear in sentences with verbs like *sorgen* ('to care') that govern a referential PP:

- (242) a. Karl sorgt für Maria.
Karl cares for Maria
- b. *Karl sorgt für glücklich.
Karl cares for happy

The sentence in (242b) is ruled out since *sorgen* assigns a semantic role to its PP argument. Semantic roles are assigned by linking of referential indices. Since the semantic contribution of *für klug* is a state of affairs rather than a nominal object, the embedding of *für klug* under *sorgt* is ruled out. Prepositions like *für* in the prepositional object *für Maria* do not contribute to the meaning of the PP. The meaning of the complement PP is identical to the meaning of the NP contained in it (Pollard and Sag, 1994, p. 255, p. 347). Therefore verbs like *sorgen* can assign a thematic role to the NP element in the PP by assigning a thematic role to the PP. Because of different semantic requirements of *halten* and *sorgen* the respective *für* phrases cannot appear in the wrong context.

The fronting examples in (177)–(178), repeated here as (243)–(244), are ruled out for the same reasons as the sentences in (82c), (153b), and (213).

-
- (i)

HEAD	SUBJ \langle NP \rangle
	<i>verb</i>

SUBCAT	\langle _[1] NP, P[PFORM <i>als</i> , SUBCAT \langle AP[SUBJ \langle _[1] \rangle]] \rangle
--------	--

His solution does not work since it is impossible to specify properties of constituents within a selected element in the SUBCAT list of the selected element. The entry in (i) basically selects an unsaturated P, licensing sentences like (ii).

- (ii) *weil er ihn für hielt.
because he him for hold

Suchsland (1997, p. 166) gives a lexical entry for *betrachten* ('consider') that is subcategorized for a preposition with a SUBJ list that contains an AP or an NP. It is totally unclear to me what this lexical entry is supposed to do. In any case, it does not make sense to speak of APs as subjects.

- (243) a. ?? Ausgesehen hat er gut.
 PART.looked has he good
 ‘He looked good.’
 b. * Vorgekommen ist er mir komisch.
 PART.came is he me strange
 ‘He seemed strange to me.’
 c. * Mir vorgekommen ist er komisch.
 me PART.came is he strange
- (244) a. * Gefunden hat er ihn klug.
 found has he him smart
 Intended: ‘He considered him to be clever.’
 b. * Den Langweiler finden kann Jan nicht nett.⁸⁹
 the bore find can Jan not nice
 Intended: ‘Jan can’t find that bore nice.’

In (243a,b) and (244a), an incomplete part of the predicate complex is fronted. Parts of the predicate complex are stranded, which is ruled out by the analysis of complex fronting provided in Section 2.2.2. (243c) and (244b) are ruled out since *vorgekommen* and *finden* select a predicate via XCOMP and therefore they cannot function as the head daughter in the Head-Argument Schema (see page 88) and hence, neither the phrase *mir vorgekommen* nor the phrase *den Langweiler finden* is licensed by the grammar.

2.3 Alternatives

In this section, I discuss Reape’s Clause Union analysis, analyses without a predicate complex schema, and analyses that do not assume an additional valence feature for the selection of predicates that are part of the predicate complex.

2.3.1 Linearization Based Theories

Reape (1994) assumes that coherent constructions in German should be analyzed as Clause Union. For (115)—repeated here as (245)—he assumes that *es zu lesen* is a phrase that is embedded by *ihm versprochen*, which in turn is embedded by *jemand hat*.

- (245) weil es ihm jemand zu lesen versprochen hat.⁹⁰
 because it-ACC him-DAT somebody-NOM to read promised has
 ‘because somebody promised him to read it.’

The phrase *es zu lesen* is a discontinuous maximal projection. The elements that are contained in the order domain of this phrase, i.e. *es* and *lesen*, are unioned into the order domain of the head *versprochen*.

⁸⁹See Neeleman, 1994, p. 29 for an analogous example in Dutch.

⁹⁰Haider, 1986b, p. 110; 1990a, p. 128.

For raising verbs like *scheinen*, Reape assumes that the raising verb embeds a non-finite clause that contains the subject.

- (246) weil der Fritz die Maria zu lieben scheint.
 because the Fritz-NOM the Maria-ACC to love seems
 'because Fritz seems to love Maria.'

This means that *der Fritz die Maria zu lieben* is a clause that is embedded under *scheint*. *der Fritz* agrees with *scheint* since it is the subject in (246). This fact cannot be accounted for in Reape's approach unless one assumes that the non-finite verb *zu lieben* has agreement features that can be checked with the subject of *zu lieben* and that are simultaneously present at *scheint* (Kathol, 1998, Section 5.1; Müller, 1999a, Chapter 21.1). As there is no morphological reflex of the agreement features on non-finite forms, such a solution would be pretty ad hoc.

Furthermore, the so-called remote passive, which will be discussed in Chapter 3.1.4.1, cannot be explained in Reape's framework (Kathol, 1998, Section 5.2).

2.3.2 Flat Structures without Verbal Complex

Bouma and van Noord (1998) and Gunkel (1999, p. 146) assume a flat analysis for the German clause, including a flat analysis of the predicate complex. Both complements that take part in complex formation and those that do not are represented on the SUBCAT list of their head. Bouma, van Noord, and Gunkel assume that a head is combined with all these complements in one step. Such an approach has to come up with a special explanation for sentences like (247).

- (247) 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 has or at.least
 daß er mich hätte [lieben wollen] oder [lieben müssen].⁹¹
 that he me would.have love want.to or love must
 'I loved him, and I felt that he loved me too, or at least that he would have wanted to or would have had to love me.'

In (247) we have an instance of *Oberfeldumstellung*. The perfect auxiliary *haben* is flipped over a coordination of two verbal complexes. Sentences like (247) can be explained easily with the analysis that has been proposed in this chapter: The coordination of *lieben wollen* and *lieben müssen* is a symmetric coordination of two verbal complexes. *hätte* governs this coordination. This argument against Bouma and van Noord's approach is not particularly strong since there is no really conclusive theory of coordination that covers all instances of this phenomenon, but it is clear that any approach that assumes verbal complexes as constituents does not have problems with data such as (247), whereas approaches that do not assume this have to come up with special explanations.

⁹¹Werner Bergengruen, *Das Tempelchen*. Zürich, 1950, p. 423, quoted from Hoberg, 1981, p. 36.

Note that I do not claim that all coordinations that involve verbs that usually form a verbal complex are analyzed as coordinations of verbal complexes. For sentences like (248), I assume that the modal *wollte* embeds a coordination of two VPs.

- (248) da er [_{VP} [_{VP} den Rasen mähen] und [_{VP} das Dach decken] wollte].
 since he the lawn mow and the roof to.roof wanted
 ‘since he wanted to mow the lawn and to roof the house.’

There are several phenomena in the grammar of German where parts that form a verbal complex with their head in verb-final contexts project VPs in other syntactic contexts. For instance, (204)—repeated here as (249)—shows examples of partial verb phrase fronting.

- (249) a. [Ein Märchen erzählen] wird er seiner Tochter müssen.
 a fairytale tell will he his daughter must
 ‘He will have to tell his daughter a fairytale.’
 b. [Seiner Tochter ein Märchen erzählen] wird er müssen.
 his daughter a fairytale tell will he must

In verb-last sentences *erzählen*, *müssen*, and *wird* form a verbal complex which does not contain any arguments. In the analysis of the sentences in (249), one (249a) or zero (249b) arguments are attracted by the modal *müssen*. The same solution can be applied to the examples in (248): The VPs are coordinated and the modal is combined with the coordinated VPs. Since the VPs are fully saturated, no arguments are attracted. See also footnote 74 on page 87.

Bouma and van Noord (1998) and Gunkel (1999) do not assume an additional valence feature for the selection of elements that form a predicate complex. Proposals without such a valence feature are discussed in Section 2.3.5.

2.3.3 Binary Branching Structures without a Verbal Complex Schema

Kiss (1995) and Heinz and Matiassek (1994, p. 223) suggest analyses that list verbal complements that form a complex with their head on the SUBCAT list. The SUBCAT list for an obligatorily incoherent verb is shown in (250):

- (250) SUBCAT value for an obligatorily incoherent verb following Kiss (1995, p. 178):

$$\left[\text{SUBCAT } \boxed{1} \oplus \left\langle \text{V}[\text{SUBCAT } \boxed{1}, \text{LEX+}] \right\rangle \right]$$

They assume that the combination of verbal complements with their heads is licensed by the Head-Argument Schema. As Kiss (1995, Chapter 4.2.2) notes, this results in right branching structures for the verbal complex. While the analysis suggested in this book licenses structures like the one in (251a), Kiss-style analyses license structures like (251b).

- (251) a. weil Ulrich dieses Buch [[lesen können] wird].
 because Ulrich this book read can will
 ‘because Ulrich will be able to read this book.’
 b. weil Ulrich dieses Buch [lesen [können wird]].
 because Ulrich this book read can wird

Kiss argues that the auxiliary flip construction should not be seen as evidence against his proposal since there are examples like (192) in which the matrix verb is serialized in between two verbs of the embedded verbal complex. (192a) is repeated here as (252).

- (252) daß er das Examen bestehen wird können.
 that he the examination pass will can
 ‘that he will be able to pass the examination.’

While it is true that the analysis of such examples is not straight forward, I think that a left branching verbal complex is better suited to explain data like (247). An analysis for (253) that first combines *hätte* with *wollen* and *müssen* and then integrates the two *lieben* is difficult to imagine.

- (253) hätte [lieben wollen] oder [lieben müssen]
 would.have love want.to or love must

2.3.4 Obligatory Coherence as a Subcase of Optional Coherence

Kiss (1995, p. 178) suggests treating obligatory coherence as a special case of optional coherence: Optionally coherent verbs do not require their verbal complement to be LEX+.

- (254) SUBCAT value for an optionally incoherent verb following Kiss (1995):

$$\left[\text{SUBCAT } \boxed{\text{LEX}} \oplus \left\langle \text{V}[\text{SUBCAT } \boxed{\text{LEX}}] \right\rangle \right]$$

As I pointed out in Müller, 1999a, p. 351, this results in spurious ambiguities in grammars that use binary branching head-argument structures. An optionally coherent verb like *versprechen* may embed a full VP (255a), a lexical verb (255c), but also a projection of a verb that is not fully saturated (255b).

- (255) a. weil Karl [[das Buch dem Mann zu geben] verspricht].
 because Karl the book the man to give promises
 ‘because Karl promises to give the book to the man.’
 (no argument = incoherent)
 b. weil Karl das Buch [[dem Mann zu geben] verspricht].
 because Karl the book the man to give promises
 (one argument = unwanted)
 c. weil Karl das Buch dem Mann [zu geben verspricht].
 because Karl the book the man to give promises
 (all arguments = coherent)

The structure in (255b) is spurious and should not be admitted by the grammar. This can be fixed by assuming a constraint that states that either all complements or no complement is raised (De Kuthy and Meurers, 2001). However, such a constraint rules out partial raising as is used in many analyses of auxiliary flip and the third construction. See Hinrichs and Nakazawa, 1994a; Müller, 1999a, Chapter 14.3 for analyses.

2.3.5 Proposals without an Additional Selection Feature

Hinrichs and Nakazawa (1994a, 1999), Bouma and van Noord (1998), Gunkel (1999), Baker (1999), and De Kuthy and Meurers (2001) do not use a special feature for the selection of elements that form a predicate complex with their head. In what follows, I will briefly discuss the proposal of De Kuthy and Meurers and then turn to the other analyses.

De Kuthy and Meurers (2001) develop a very general approach to partial fronting that also explains extractions of PPs out of NPs. They assume that all dependents of a verb are represented in the SUBCAT list. They assume the following Immediate Dominance Principle:

$$(256) \quad \left[\begin{array}{l} \text{DTRS } \textit{headed-struct} \\ \textit{phrase} \end{array} \right] \rightarrow \left[\begin{array}{l} \text{SYNSEM|LEX +} \\ \text{DTRS } \left[\begin{array}{l} \text{HEAD-DTR } \textit{word} \\ \text{COMP-DTRS } \langle \text{[SYNSEM|LEX +]} \rangle \\ \textit{head-comps-struct} \end{array} \right] \end{array} \right] \vee \left[\begin{array}{l} \text{SYNSEM|LEX -} \\ \text{DTRS } \left[\begin{array}{l} \text{HEAD-DTR } \textit{word} \\ \textit{head-comps-struct} \end{array} \right] \end{array} \right] \vee \dots$$

The first disjunct describes head-cluster structures in which a word is combined with a LEX+ element and the result is a LEX+ element. The second disjunct describes head-argument structures in which a word combines with an arbitrary number of arguments to form a LEX– constituent. Since the structure is flat De Kuthy and Meurers can explain the different linearizations of the finite verb in verb-final and verb-initial clauses. They assume that the finite verb is not a part of the verbal complex in sentences like (257).

- (257) a. Verspricht Karl das Buch dem Mann zu geben?
 promises Karl the book the man to give
 ‘Does Karl promise to give the book to the man?’
 b. weil Karl das Buch dem Mann zu geben verspricht.
 because Karl the book the man to give promises
 ‘because Karl promises to give the book to the man.’

The combination of the finite verb and the embedded verb or verbal complex is licensed by their Head-Argument Schema. The direct combination of the elements of the verbal complex is not allowed by the rule system in (256) since verb clusters are of type *phrase* and the head daughter in the Head-Argument Schema is required to be of type *word*. Note that this also applies to non-finite VPs like those in (258):

- (258) weil er behauptet hat, dem Mann das Buch geben zu wollen.
 because he claimed has the man the book give to want
 ‘because he claimed that he wanted to give the man the book.’

The combination of the phrases *dem Mann*, *das Buch*, and *geben* with *zu wollen* is licensed by the Head-Argument Schema. So, in their theory, the highest element of what is pre-theoretically a verbal complex is not analyzed as part of the verbal complex.

Another difference between the proposal of De Kuthy and Meurers and the one suggested in this book is that they restrict the embedded elements that can appear in cluster structures to be LEX+. My Schema 4 on page 87 does not restrict the LEX value of embedded elements. The LEX value of the embedded element is specified in the XCOMP value of the governing head. This makes it possible to leave the LEX value of certain verbs unspecified. In Section 2.1.10, I argued that the embedded predicate in sentences like (259) should be analyzed as part of the predicate complex.

- (259) Man hält ihn für verrückt.
 one holds him for crazy
 ‘He is taken to be crazy.’

In subject and object predicative constructions, complex phrases can be embedded (for instance PPs and phrases involving copula particles). Such phrases are LEX— and hence, incompatible with the LEX+ requirement in De Kuthy and Meurers’ Cluster Schema. In Chapter 5, I will discuss resultative constructions, which also involve phrasal predicates that should be analyzed as part of the predicate complex. My Schema 4 is compatible with such an analysis.

Hinrichs and Nakazawa (1994a) do not restrict the non-head daughter in head-cluster structures to be lexical, but they also do not use an additional feature for the selection of complex-forming predicates. If one lists PP predicates as normal elements of the SUBCAT list, they can be raised like PP complements and the contrast in (260) cannot be explained easily.⁹²

- (260) a. Interessieren wird er sich für den Präsidenten.
 interest will he self for the president
 ‘The president interests him.’

⁹²Sentences marked with ‘#’ are grammatical, but do not belong to the construction under consideration. For instance, (260b) has a reading in which somebody holds something (an umbrella) for the president.

- b. # Halten wird er ihn für den Präsidenten.
 hold will he him for the president
 ‘He takes him to be the president.’

Note that the differing SUBJ values of the PPs in (260) cannot be used to explain the contrast. Since PPs that are prepositional objects have an empty SUBJ list, one could state a constraint that rules out the fronting of predicates that select predicates with a non-empty SUBJ list. However, such a constraint would rule out sentences like (85), in which a verb that selects a VP in an incoherent construction is fronted, and therefore such a constraint has to be dismissed as too restrictive. Examples like (85) and (260) are problematic for Nerbonne, Hinrichs and Nakazawa, and Baker’s accounts of partial fronting that rule out examples like (82c) by requiring that no verbal argument of a fronted verb may be raised (Nerbonne, 1994; Hinrichs and Nakazawa, 1994b, 1999; Baker, 1999).

2.4 Summary

At the beginning of this chapter, I introduced the notions of coherence and incoherence and provided tests for distinguishing coherent and incoherent constructions. Furthermore, the difference between raising and control was discussed. I provided analyses for subject and object control verbs and for subject and object raising verbs. The copula was analyzed as a raising verb. I showed that subject and object predicatives also have to be treated as raising verbs. AcI verbs and subject and object predicatives form a predicate complex. Arguments of all predicates that are contained in such a predicate complex are combined in the valence list of the predicate complex. The predicate complex functions as the head of the clause and, since the dependents of a head may be permuted, an explanation is given for why dependents of an embedded predicate may be separated from this predicate by a dependent of a higher predicate, i. e., why dependents of several predicates may be scrambled.

Passive

In this chapter I will examine various kinds of passive. After having discussed the data in Section 3.1, I will develop an analysis that uses only one lexical item for the perfect/passive participle in Section 3.2. The realization of arguments in the active and passive environment depends solely on the respective auxiliary verb. The analysis of the passive interacts with the analysis of object predicative constructions, which was discussed in the previous chapter, with the analysis of resultative constructions, which will be discussed in Chapter 5, and with the analysis of derivation involving particle verbs, which will be discussed in Chapter 6. The so-called remote passive will be explained with reference to the verbal complex, an analysis of which was provided in the last chapter.

3.1 The Phenomena

The sentences in (261) are examples of the two main passives in German: the agentive passive formed with *werden* and the stative passive formed with *sein*.

- (261) a. Das Fenster wird geöffnet.
 the window is opened
 ‘The window is being opened.’
 b. Das Fenster ist geöffnet.
 the window is opened
 ‘The window is open.’

The passive is used to suppress the logical subject of a verb. The wish to suppress this element can have several reasons. The referent of the subject may be less important, or already provided by the context. The logical subject then may be expressed by a *von*-PP which allows for a serialization that is different from the serialization of the subject in active sentences. Another reason for using the passive is the change of argument structure that promotes the accusative object to subject and makes it possible to coordinate the passive predicate with other predicates that have the underlying accusative object of the passivized predicate as subject. (262) shows an example of such a coordination.

- (262) Der Mann wurde von einem Betrunkenen angefahren und starb an den
 the man was by a drunk to.driven and died at the
 Folgen.
 consequences
 ‘The man was run over by a drunk driver and died of the consequences.’

Usually passives are also classified with respect to another property: The so-called personal passive is distinguished from the impersonal passive. A verb that selects an accusative object has a passive form where the accusative object is realized as nominative:

- (263) a. Die Frau liebt den Mann.
 the woman-NOM loves the man-ACC
 b. Der Mann wird geliebt.
 the man-NOM is loved

This kind of passive is called the *personal passive*. On the other hand, it is also possible to passivize verbs that do not select an accusative object. In such passive constructions the subject of the active verb is suppressed. Since there is no accusative object that could be promoted to subject, there is no nominative element in the passive sentence. The sentences in (264b,d) are examples of this so-called *impersonal passive*.

- (264) a. Die Frau hilft dem Mann.
 the woman-NOM helps the man-DAT
 b. Dem Mann wird geholfen.
 the man-DAT is helped
 ‘The man is being helped.’
 c. Hier tanzen alle.
 here dance all-NOM
 ‘Everybody dances here.’
 d. Hier wird getanzt.
 here is danced
 ‘Dancing is done here.’

helfen is a verb that governs the nominative and the dative (264a). In passive sentences the subject is suppressed and the dative object is realized without any change (264b). *tanzen* is an intransitive verb. In the passive sentence (264d), no NP is realized. The sentences in (264b) and (264d) are subjectless constructions. German differs from languages like Icelandic in not having dative subjects (Zaenen, Maling, and Thráinsson, 1985). One test for subjecthood that Zaenen, Maling, and Thráinsson (1985, p.477) apply is the test for controllability of an element. In Chapter 2.1.3.1, I showed that subjectless constructions cannot be embedded under control verbs. The example (95c) is repeated below for convenience.

- (265) * Der Student versucht, getanzt zu werden.
 the student tries danced to get
 Intended: 'The student tries to dance.' or 'The student tries to make
 somebody dance.'

Like (265), infinitives with passivized verbs that govern only a dative cannot be embedded under control verbs, as (266) shows.

- (266) * Der Student versucht, geholfen zu werden.
 the student tries helped to get
 Intended: 'The student tries to get helped.'

This shows that the dative in (264b) is a complement and not a subject.

Note that while the accusative object in (263a) is realized as nominative in (263b), the dative in (264a) does not change when the verb is passivized, as in (264b).

In the following subsection, I discuss the unaccusative/unergative distinction which plays a major role in passive formation and the formation of adjectival participles. It is also important in the context of resultative constructions which are discussed in Chapter 5. After the discussion of the unaccusative/unergative distinction, I turn to various variants of the passive and similar constructions: the agentive, stative, dative, and *lassen* passive and modal infinitive constructions with *sein*. A special case, the so-called remote passive, will also be dealt with. Remote passives are passive constructions in which an accusative object of a deeply embedded verb surfaces as nominative. The possibility of forming remote passives is connected to the ability of the matrix verb to enter a coherent construction.

3.1.1 Unaccusativity

Although it is possible to passivize intransitive verbs, as (264b) and (264d) have shown respectively, there are certain verbs that resist passivization. The intransitive verb *ankommen* for instance cannot be passivized, as (267b) shows. Similarly the passivization of the verb *auffallen* is impossible, as (267d) shows.

- (267) a. Der Zug kam an.
 the train-NOM came PART
 'The train arrived.'
- b. * Dort wurde angekommen.
 there was arrived
- c. Der Mann fiel ihr auf.
 the man-NOM fell her-DAT PART
 'She noticed the man.'
- d. * Ihr wurde aufgefallen.
 her-DAT was PART.fell

Verbs of this class may be used as prenominal adjectival participles, as the following examples show.

- (268) a. der angekommene Zug
the arrived train
- b. dem Regime aufgefallene „Vaterlandsverräter“¹
the regime-DAT PART.fell traitors.to.their.country
‘the “traitors to their country” noticed by the regime’

In the examples in (268), the subject role of the adjectival participle is filled by the modified noun. This is interesting since usually it is the object role of the participle which is filled by the noun when adjectival participles modify nouns:

- (269) a. die geliebte Frau
the loved woman
- b. der geschlagene Hund
the beaten dog

In (269a) the woman is the one who is loved and in (269b) the dog is beaten. Verbs that do not have accusative objects usually cannot form adjectival participles:

- (270) a. *der getanzte Mann
the danced man
- b. *der (ihm) geholfene Mann
the him helped man

It has been observed that dependents of certain verbs that have nominative case in active sentences nevertheless behave like objects. Such verbs are called *unaccusative* (Perlmutter, 1978) or *ergative* (see for instance Grewendorf, 1989 and references cited there). Grewendorf (1989) provides fourteen tests for distinguishing unaccusative from unergative verbs. Fanselow (1992) adds another six. Despite this large number of tests, what is considered to be an unaccusative verb is by no means an uncontroversial issue. Kaufmann (1995a) shows that many of the alleged differences between unaccusative and unergative verbs have to be explained by means that are not related to the proposed unaccusative/unergative distinction.

Independent of the precise definition and tests for ergativity, the facts about the phrases in (267)–(270) can be explained easily if one assumes that the subjects of the verbs in (267) are underlyingly objects. If the passive is seen as demotion of the subject, it is clear that passivization is excluded when no subject is present. So, if the subjects of *ankommen* and *auffallen* are underlyingly objects, the passive cannot suppress them and passivization is therefore impossible.² Similarly, adjectival

¹Die Zeit, 26.04.1985, p. 3.

²For a discussion of certain exceptional passivizations of unaccusative verbs that have a special reading see Růžička, 1989, p. 350 and Müller, 1999a, p. 290.

participle formations are possible if there is an element that has accusative object properties: The subjects of *ankommen* and *auffallen* are analyzed as an underlying object and therefore the phrases in (268) can be accounted for. Another test for distinguishing unaccusative from unergative verbs is their behavior in resultative constructions. These will be discussed in Chapter 5 in more detail.

Before I turn to various forms of the passive in the next sections, I want to discuss auxiliary selection, which is one of the proposed differences between unaccusative and unergative verbs in German.³ Usually unaccusative verbs form the perfect with *sein* while unergative verbs form the perfect with *haben*. But using both the auxiliary selection and passivizability as defining criteria for unaccusativity/unergativity is problematic since, for instance, movement verbs form the perfect with *sein* yet allow passivization, as the following examples show:

- (271) a. Gestern wurde allerdings noch gefahren, wenn auch erst mit
yesterday was though yet driven if also only with
Verzögerung.⁴
delay
'They did ride yesterday, although only after a delay.'
- b. Aber es wurde damals ununterbrochen marschiert.⁵
but it was then continuously marched
'But there was continuous marching then.'
- c. Im Norden kann nur gelandet werden.⁶
in.the north can only landed be
'It is possible only to land in the north.'
- d. In allen anderen Gewässern Berlins und Brandenburgs kann
in all other waters Berlin and Brandenburg can
gefahrlos geschwommen und geschluckt werden.⁷
without.danger swam and swallowed be
'It is possible to swim and swallow water in all other lakes, rivers, and
canals in Berlin and Brandenburg without danger.'

The verbs in (272) are related to movement verbs, but have a different meaning. They also form the perfect with *sein* and allow passivization:

- (272) a. Ich bin so verfahren, daß ...⁸
I-NOM am so proceeded that
'I proceeded so that ...'

³See also Ryu, 1997 for a discussion of auxiliary selection in particular and unaccusativity tests in general.

⁴taz, 25./26.07.1998, p. 1, Report about the Tour de France.

⁵taz, berlin, 02.02.2000, p. 19.

⁶taz, 05./06.02.2000, p. 8.

⁷taz, 16./17.06.2001, p. 30.

⁸Duden, 1991, p. 764.

- b. „Hier muß sensibel verfahren werden.“⁹
 here must sensitive proceeded be
 ‘One has to proceed sensitively here.’
- (273) a. „Wir sind eine vertragliche Verpflichtung eingegangen, und
 we-NOM are a contractual commitment-ACC entered and
 zu dieser stehen wir“ [...] ¹⁰
 to this stand we
 ‘We entered into a contractual commitment and we stand by it.’
- b. Für jeden Job, [...] bei dem Verantwortung übernommen werden oder
 hin und wieder gar ein Kompromiss eingegangen werden muß, ist der
 ehemalige Finanzminister absolut ungeeignet.¹¹
 ‘The former minister of finance is absolutely unsuited to all jobs that
 require assuming responsibility and making a compromise now and
 then.’
- (274) a. „Wären wir beim Ocean Race so gesegelt, wie wir die Kampagne
 um den America’s Cup angegangen sind, hätten wir das Ziel nicht
 erreicht“, musste er eingestehen.¹²
 ‘He had to admit, “If we had sailed in the Ocean Race in the way
 we tackled the campaign for the America’s Cup, we would not have
 reached the finish.”’
- b. Ob die finanziell aufwendige Restaurierung nun tatsächlich angegan-
 gen wird oder ob die Wandmalereien lediglich fachgerecht konser-
 viert werden, hat der Heidelberger Gemeinderat demnächst zu ent-
 scheiden.¹³
 ‘The Heidelberg district council has to decide soon whether the costly
 restoration will actually be carried out now or whether the wall-
 paintings will just be preserved by experts.’
- (275) a. „Gegen Sozialhilfemissbrauch wird künftig konsequent vorgegan-
 gen“, sagt sie, als ob nicht schon der rot-grüne Senat Sozialhilfeemp-
 fängern unangemeldete Kontrolleure ins Haus geschickt hätte.¹⁴
 ‘She says: “Action will be taken against income support abuse.”, as if
 the red-green senate had not already sent unannounced inspectors to
 the homes of income support recipients.’

⁹taz berlin, 11.08.1998, p. 17.

¹⁰taz, 6.3.2002, p. 9.

¹¹taz, 28.05.2002, p. 14.

¹²taz Hamburg, 11.6.2002, p. 24.

¹³Mannheimer Morgen, 20.01.1989.

¹⁴taz Hamburg, 27.6.2002, p. 21.

- b. daß bei einem solchen Delikt gegen Autobahnpolizisten
that at a such offense against highway.policemen
vorgegangen wird.¹⁵
take.action be
'that action is taken against highway policemen if they commit such a
offense.'
- (276) a. Dem ist die taz nachgekommen.¹⁶
this is the taz comply.with
'The taz complied with this.'
- b. den finanziellen Verpflichtungen kann nicht nachgekommen
the financial commitments can not fulfill
werden¹⁷
be
'One cannot fulfill the financial commitments.'

Note that both (273b) and (274b) are instances of the personal passive. *angehen* und *eingehen* take a nominative and an accusative in the active.¹⁸

However, to formulate the generalization that all verbs that are related to movement verbs form the perfect with *sein* would be over-hasty since there are also examples like (277):

- (277) Ein Organisator im Bundesstaat Iowa hat dieses Problem umgangen.¹⁹
an organizer in.the federal.state Iowa has this problem PART.went
'An organizer from the state of Iowa circumvented this problem.'

¹⁵Frankfurter Rundschau, 012.09.1998, p. 31.

¹⁶taz, 08.06.2002, p. 24.

¹⁷St. Galler Tagblatt, 30.09.1999.

¹⁸Grewendorf (1989, p. 9) provides the following examples of verbs that allow for passivization, form the perfect with *sein*, and take an accusative object:

- (i) a. Ich bin die Arbeit durchgegangen.
I am the work through.gone
'I have gone through the work.'
- b. Er ist den Bund fürs Leben eingegangen.
he is the bond for life in.gone
'He took the marriage vows.'
- c. Er ist die ganze Stadt abgelaufen.
he is the whole town through.run
- d. Sie ist ihn geflohen.
she is him fled
'She fled from him.'
- e. Sie ist ihn angegangen.
she is him approached
'She approached him.'

The last sentence can also mean *She fought him*.

¹⁹Mannheimer Morgen, 30.05.1989.

Rather, verbs that govern an accusative object form the perfect with *haben*. *angehen*, *durchgehen*, and *eingehen* have to be regarded as exceptions among the verbs that take an accusative.

Having shown that passivizability and auxiliary selection are independent properties as far as the ergative/unergative distinctions are concerned, I now turn to various kinds of passive.

3.1.2 Agentive Passive

Examples of the agentive passive were provided in (263). In impersonal passive constructions, the logical subject of an intransitive verb has to refer to an animate entity (Paul, 1919, p. 40; Jung, 1967, § 429; Zaenen, 1988). Kaufmann (1995a, p. 168) discusses the examples in (278), and on the basis of (278e), she claims that this restriction also holds for transitive verbs.

- (278) a. Auf der Party tanzten viele Gäste.
on the party danced many guests
'Many guests danced at the party.'
- b. Auf der Party wurde (von vielen Gästen) getanzt.
on the party was by many guests danced
'Many guests danced at the party.'
'There was dancing at the party.'
- c. Vor dem Fenster tanzten die Schneeflocken.
in.front.of the window danced the snowflakes
'Snowflakes danced outside the window.'
- d. § Vor dem Fenster wurde (von Schneeflocken) getanzt.
in.front.of the window was by snowflakes danced
- e. Die Tür wurde von Peter / § vom Wind geschlossen.
the door was by Peter by.the wind closed
'The door was closed by Peter/the wind.'

The symbol '§' stands for semantic deviance.

Kaufmann suggests that the passive is possible with human subjects only. However, that this cannot be true in general is shown by sentences like those in (279).²⁰

- (279) a. Die Schneeflocken beeinflussten meine Entscheidung.
the snowflakes influenced my decision
'The snowflakes influenced my decision.'

²⁰See also example (440b) on page 191. The passive participle in this sentence corresponds to the active form in (i).

- (i) Staubschwaden umtanzten die Journalisten.
dust.clouds around.danced the journalists
'Dust clouds danced around the journalists.'

- b. Meine Entscheidung wurde durch die Schneeflocken beeinflusst.
my decision was by the snowflakes influenced
'My decision was influenced by the snowflakes.'
- c. Die Grammatikalisierung überlagert sie.
the grammaticalization overlies them
'The grammaticalization eclipses them.'
- d. [...] da sie von der Grammatikalisierung überlagert werden.²¹
since they by the grammaticalization overlain are
'since they are eclipsed by the grammaticalization'

For sentences like (280a), one can assume that the passive is derived from an active with an animate subject.

- (280) a. Sprachen wie das Gotische oder das Maltesische verfügen über unterschiedliche Ableitungsstrategien, durch die einerseits kausative und andererseits inchoative Verben abgeleitet werden können.²²
'Languages like Gothic or Maltese have at their disposal various derivation strategies through which causative verbs can be derived on the one hand, and inchoative ones on the other.'
- b. Der Sprecher leitet die kausativen Verben mittels solcher
the speaker derives the causative verbs via such
Ableitungsstrategien ab.
derivation.strategies PART (off)
'The speaker uses such derivation strategies to derive the causative verbs.'

The *durch*-PP in the passive sentence is an instrument as in (280b). No such explanation is possible for the pairs in (279):

- (281) a. Man überlagert sie durch die Grammatikalisierung / mit der
one overlays them through the grammaticalization with the
Grammatikalisierung / mittels der Grammatikalisierung.
grammaticalization via the grammaticalization
'One eclipses them using grammaticalization.'
- b. Man beeinflusst meine Entscheidung durch die Schneeflocken /
one influences my decision through the snowflakes
mit den Schneeflocken / mittels der Schneeflocken.
with the snowflakes via the snowflakes
'One used snowflakes to influence my decision.'

²¹In the main text of Kaufmann, 1995a, p. 190.

²²In the main text of Kaufmann, 1995a, p. 186.

The sentences in (281)—if grammatical at all—differ in meaning from those in (279) since the semantic roles are filled differently.

Finally, note that (278e) improves if *vom* is replaced by *durch den*. Further, the examples in (282) show that even with *vom Wind*, passive examples can be found.

- (282) a. daß das Laub im Herbst ungehindert vom Wind verteilt
that the leaves in.the fall unhindered by.the wind distributed
wird²³
is
'that the leaves are scattered by the wind in fall, without anything to stop them at all'
- b. Die Schwaden seien vom Wind in Richtung Mannheim über den
the clouds be by.the wind in direction Mannheim over the
Rhein getrieben worden.²⁴
Rhein driven been
'The clouds were driven over the Rhein in the direction of Mannheim by the wind.'
- c. ein Kunstwerk, [...] das vom Wind bewegt werden kann²⁵
an artwork that by.the wind moved be can
'a work of art that can be moved by the wind'
- d. Die Wahlplakate werden vom Wind zerfetzt oder nachts von
the election.posters get by.the wind shredded or nights by
Unbekannten übermalt.²⁶
unknown.(people) over-drawn
'The election posters either get shredded by the wind or scribbled on by unknown individuals at night.'
- e. eine radioaktive Wolke, die vom Wind nach Skandinavien
a radioactive cloud that by.the wind to Scandinavia
getrieben wurde²⁷
driven was
'A radioactive cloud that was driven to Scandinavia by the wind'

Kaufmann's claim that transitive verbs can only be passivized if the logical subject refers to an animate entity therefore seems to be false.

Turning to another property of subjects in passive constructions, it appears that in all cases the logical subject of the passivized verb has to be referential. The example in (283) shows that the passivization of expletive predicates is impossible.

²³Mannheimer Morgen, 06.05.1989, Soziales; Laubfall.

²⁴Mannheimer Morgen, 17.07.1995, Lokales; Unglück in Labor der BASF.

²⁵Mannheimer Morgen, 11.08.1995, Lokales; Auf Dächern der Klinik geht es wild zu.

²⁶Die Zeit, 22.02.1985, p. 4.

²⁷Mannheimer Morgen, 30.04.1986, p. 1.

- (283) * Heute wurde geregnet.
 today was rained
 Intended: 'It rained today.'

At first glance, the passive sentences in (285) seem to contradict this claim since one might believe that they correspond to the active sentence in (284).

- (284) Es trug ihn aus der Kurve.
 it-EXPL carried him out the curve
 'He came off the road.'
- (285) a. Das Auto wurde aus der Kurve getragen und prallte gegen die
 the car got out.of the curve carried and crashed against the
 Leitplanken.²⁸
 crash-barrier
 'The car came off the road in the bend and crashed into the crash-barrier.'
- b. Der Wagen war nach Mitteilung der Polizei vermutlich wegen überhöhter Geschwindigkeit in einem durch den Wald führenden Straßenabschnitt aus einer Kurve getragen worden und gegen einen Baum geprallt.²⁹
 'According to police information, the car came off the road in a bend in a wooded area and crashed against a tree, presumably as a result of speeding.'

However, the examples in (286) show that there are sentences in which the logical subject of *aus der Kurve getragen* is expressed by a referential PP:

- (286) a. Spiralgalaxien etwa rotieren so schnell, daß die Sterne durch die Fliehkraft aus der Kurve getragen werden müßten und es deshalb – ohne ein solches Schwerkraftzentrum – solche Spiralnebel eigentlich längst nicht mehr geben dürfte.³⁰
 'Spiral galaxies, for instance, rotate so fast, that the centrifugal force ought to fling the stars off course, and hence such spiral nebula should have ceased to exist long ago, were it not for their gravitational centers.'
- b. durch die Wucht des Aufpralls wurden die beiden mit insgesamt 300 Fahrgästen besetzten Omnibusse aus einer scharfen Kurve getragen und stürzten 30 Meter tief in eine Schlucht.³¹
 'Due to the force of the crash, the two busses, which were carrying a

²⁸Mannheimer Morgen, 15.12.1995, Lokales.

²⁹Mannheimer Morgen, 29.06.1989, Regionales.

³⁰Stern, 10.12.1987, p. 32.

³¹Bildzeitung (Hamburg), 07.01.1967, p. 6.

total of 300 passengers, hurtled out of an sharp bend and plunged 30 meters down into a ravine.'

In (286a) the logical subject is expressed by *durch die Fliehkraft* ('by the centrifugal force') and in (286b) by the PP *durch die Wucht des Aufpralls* ('by the force of the crash'). Therefore sentences like those in (285) can be regarded as passive forms of sentences like (287).

- (287) Die Fliehkraft trug ihn aus der Kurve.
 the centrifugal.force carried him out.of the curve

Above I have shown that predicates with a non-referential subject cannot be passivized. As (288) shows predicates that lack a subject altogether also do not allow passivization:

- (288) a. Dem Student graut vor der Prüfung.
 the student-DAT dreads before the exam
 'The student dreads the exam.'
- b. * Dem Student wird (vom Professor) vor der Prüfung
 the student-DAT gets by.the professor before the exam
 gegraut.
 dreaded
 Intended: '(The professor is threatening so that) the student dreads
 the exam.'

The ungrammaticality of (283) and (288b) follows from the assumption that passivization is the demotion of the subject role (Pollard and Sag, 1994, p. 307). Since the subject of *regnen* does not have a semantic role and since *grauen* does not have a subject, these verbs cannot be passivized. It also follows that subject raising verbs cannot be passivized. The examples in (289) seem to contradict this claim:

- (289) a. Nachdem angefangen worden ist, das teure, architektonisch umstrittene Gebäude nach und nach zu übergeben, stellt man fest, daß die neue Bühnentechnik in keiner Phase des Einbaus auf ihre Eignung geprüft worden ist.³²
 'After the start of the successive handing over of the expensive and architecturally controversial building, one notices that the new stage technology was never checked for suitability during the installation.'
- b. Seine Kritik richtete sich daran aus, daß leider – wie immer – dann zuallererst am Personal angefangen wird zu sparen.³³
 'His criticism focuses upon the fact that, as always, one starts to rationalize by firing people.'

³²Mannheimer Morgen, 21.04.1989, Feuilleton; Nichts geht mehr an der Bastille-Oper.

³³Mannheimer Morgen, 05.05.1989, Lokales; Den freien Samstag verteidigen.

But as was already noted in footnote 81 on page 99 verbs like *anfangen* ('to begin') have both a raising and a control entry (See also Perlmutter, 1970 for English). In (289) the control version of *anfangen* is used.

What the data in (289) show very clearly though is that Visser's generalization³⁴ does not hold for German. (290) shows passive examples with the subject control verb *versprechen* ('to promise'):

- (290) a. Wie oft schon wurde von der Stadtverwaltung versprochen,
 like often yet was by the council promised
 Abhilfe zu schaffen.³⁵
 remedy to manage
 'As often, the council promised to resolve the matter.'
- b. Erneut wird versprochen, das auf eine Dekade angesetzte Investitions-
 programm mit einem Volumen von 630 Billionen Yen (10,5 Billionen
 DM) vorfristig zu erfüllen, [...] ³⁶
 'Again, one promised to complete the investment program planned for
 one decade with the total amount of 630 trillion Yen before the agreed
 date.'

(290a) is an example with the logical subject expressed by a PP and (290b) is an example without any overt controller.

Having discussed properties of verbs that allow for the agentive passive, I now discuss the stative passive and show that it has similar properties.

3.1.3 Stative Passive

The stative passive expresses a state that is the result of a dynamic event.³⁷ As Helbig and Buscha (1970, p. 175) noted, the stative passive is only possible if the agentive passive is possible. The reversal does not hold, as Jüttner (1981, p. 776), Zifonun (1992, p. 261), and Eisenberg (1994, p. 145) have shown: The stative passive is excluded for verbs with an accusative object if the underlying object is not in a new state, but those verbs allow agentive passives. Sensory verbs (*riechen* ('to smell'), *sehen* ('to see'), *fühlen* ('to feel'), *hören* ('to hear')) and other verbs that fit this description, like *loben* ('to praise'), *finden* ('to find'), *verehren* ('to honor'),

³⁴Bresnan (1982a, p. 402) quotes Visser with the following statement: Verbs whose complements are predicated of their subjects do not passivize.

Pollard and Sag (1994, p. 304) state as Visser's Generalization that 'subject controlled' verbs cannot undergo passivization. They discuss the contrast in (i):

- (i) a. Kim was persuaded to leave (by Dana).
 b. * Kim was promised to leave (by Dana).

³⁵Mannheimer Morgen, 13.07.1999, Leserbrief; Keine Abhilfe.

³⁶Süddeutsche Zeitung, 28.06.1995, p. 28.

³⁷See Helbig, 1987 for a discussion of examples with *sein* + participle II that cannot be characterized this way. Helbig does not classify these constructions as state passives. See Rapp, 1997 for a different view.

and *zeigen* ('to show'), do not have a stative passive.³⁸ Therefore the set of verbs that allow a stative passive is a subset of the verbs that allow the agentive passive.

The stative passive, like the agentive passive, has both personal (291a,b) and impersonal (291c–f) forms:

- (291) a. Das Fenster ist geöffnet.
the window-NOM is opened
- b. Seine dunkelbraunen Haare waren vom Wind zerzaust [...] ³⁹
his dark.brown hair-NOM were by.the wind tousled
'His dark brown hair was windswept.'
- c. Nach diesem Plan ist nicht daran gedacht, große Mittel
after this plan is not there.on thought huge means
aufzuwenden. ⁴⁰
to.spend
'According to this plan, it is not planned to spend a lot of money.'
- d. Es / jetzt ist serviert. ⁴¹
it-EXPL now is served
'The meal is now served!'
- e. Nun ist lange genug geredet. ⁴²
now is long enough talked
'Now enough talking has been done'
- f. Der Energieverschwendung war durch dicke Isolierungen
the energy.waste-DAT was through thick isolations
vorgebeugt. ⁴³
prevented
'A waste of energy is prevented by thick isolation.'
- g. Dem Mann ist geholfen.
the man-DAT is helped
'That man has been given help.'

Example (291b) shows that the stative passive is possible with transitive verbs that have an inanimate subject.

Just like we saw for the agentive passive, the stative passive is impossible with expletive predicates:

- (292) * Ist heute geregnet?
is today rained
Intended: 'Did it rain today?'

³⁸See Rapp, 1997, 187–188 for a formal explanation.

³⁹Bolten, Y., *Komteß Silvia von Schönthal*. Hamburg, 1990, p. 38, found with COSMAS.

⁴⁰Höhle, 1978, p. 41.

⁴¹Fläming, 1981, p. 549.

⁴²Wunderlich, 1985, p. 224.

⁴³Höhle, 1978, p. 41.

The stative passive of subjectless predicates such as *grauen* ('to dread') in (293) is also impossible.

- (293) *Dem Student ist (vom Professor) vor der Prüfung gegraut.
 the student-DAT is by.the professor before the exam dreaded
 Intended: '(The professor causes that) the student dreads the exam.'

The example in (294) seems to be a remarkable exception.

- (294) Die Tische sind naß geregnet.
 the tables are wet rained
 'The chairs got rained on.' (Literally: 'The chairs are rained wet.')

If one analyzes (294) as a stative passive of the active sentence in (295), an expletive subject is suppressed in the stative passive.

- (295) ?Es hat die Tische naß geregnet.
 it-EXPL has the tables wet rained

Hoekstra (1988, p. 134) and Neeleman (1994, p. 133; 1995, p. 227) discuss analogous examples from Dutch. They regard *naß regnen* as an unaccusative predicate because of the auxiliary selection. Similarly one can assume that (294) is the perfect of (296).

- (296) Die Tische regnen naß.
 the tables rain wet

Like in Dutch a perfect of such sentences cannot be formed with *haben* although the perfect of weather verbs without a resultative predicate must be formed with *haben*.

Note though that this class of examples remains problematic since the following example, which is also due to Dieter Wunderlich, seems possible.

- (297) Die Stühle wurden naß geregnet
 the chairs were wet rained
 'The chairs got rained on.' (Literally: 'The chairs got rained wet.')

If (297) is the passive of (295), one has to allow for passivization of verbs with expletive subjectes. If, on the other hand, (297) were the passive of (296), one would have to allow passives of intransitive verbs that have an inanimate subject.

After the discussion of the agentive and the stative passive, I now turn to a special passive variant: the dative passive.

3.1.4 Dative Passive

In German there is a special kind of passive that is formed with *bekommen* ('to receive'), *erhalten* ('to obtain'), and *kriegen* ('to get'). In this variant of the passive, a verb that takes a dative object is combined with one of the mentioned verbs. The underlying dative object of the passivized verb surfaces as a nominative. This is

illustrated by (298), where the dative object *mir* ('me') in (298a) surfaces as the subject *ich* ('I') in the nominative in the dative passive construction (298b).

- (298) a. Karl schenkt mir ein Buch.
 Karl-NOM gives me-DAT a book-ACC
 'Karl gives me a book as a present.'
 b. Ich bekomme ein Buch geschenkt.
 I-NOM get a book-ACC given
 'I get a book as a present.'

That the term 'recipient passive', which sometimes is also used in the literature, is inappropriate is demonstrated by sentences like (299) and (300).⁴⁴ The sentences in (299) and (300) do not mean that somebody gets something.

- (299) Er bekam zwei Zähne ausgeschlagen.
 he got two teeth PART (out).knocked
 'He got two teeth knocked out.'
- (300) a. Der Bub bekommt/kriegt das Spielzeug weggenommen.
 the lad gets the toy PART (away).taken
 'The boy has the toy taken away from him.'
 b. Der Mann bekommt/kriegt das Fahren verboten.
 the man gets the driving forbidden
 'The man is forbidden to drive.'
 c. Der Betrunkene bekam/kriegte die Fahrerlaubnis entzogen.
 the drunk got the driving.allowance withdrawn
 'The drunk had his driving license taken away.'

The meaning of *bekommen* and *kriegen* is bleached in these constructions. Therefore it is not justified to assume that the subject in such dative passive constructions is a receiver and gets a thematic role from *bekommen/erhalten/kriegen*.

The sentence in (301a) that corresponds to the active form in (301b), which is discussed in more detail in Chapter 5.1.7, shows that it is also wrong to assume—as for instance Haider (1986a, p. 23), Heinz and Matiassek (1994, p. 228), and Kathol (2000, p. 221) do—that both *bekommen* and the embedded verb assign a role (theme) to the accusative.

- (301) a. Er bekam die Seife aus den Augen gewaschen.
 he-NOM got the soap-ACC out the eyes washed
 'He got the soap washed out of his eyes.'

⁴⁴See also Askedal, 1984, p. 9, p. 22 and Wegener, 1985b, p. 129 on this point. Eroms (1978, p. 371) attributes (299) to Fränkel. The examples in (300) are taken from Reis, 1976b, p. 71.

- b. Jemand wäscht ihm die Seife aus den Augen.
 someone-NOM washes him-DAT the soap-ACC out the eyes
 'Someone washes the soap out of his eyes.'
- c. Er wäscht die Seife aus den Augen.
 he-NOM washes the soap-ACC out the eyes
 'He washes the soap out of the eyes.'

As will be argued in Chapter 5, the caused-motion construction in (301c) is a raising construction. The accusative NP *die Seife* does not fill a semantic role of the predicate *waschen*. Therefore approaches that assume that dative passive auxiliaries assign a semantic role to an accusative NP are empirically untenable. Instead, I suggest treating *bekommen/erhalten/kriegen* as true auxiliaries.

Turning to other properties of the dative passive, the dative passive is impossible with unaccusative verbs:

- (302) a. * Ich bekomme (von Maria) aufgefallen.
 I get by Maria attention.attracted
- b. * Sie kriegt begegnet.
 she gets met
- c. * Die Gewerkschaft kriegt beigetreten.
 the union gets joined

As Reis (1976b, p. 72), Askedal (1984, p. 22), and Leirbukt (1987) have shown, not all verbs that allow a passive with *werden* also allow a dative passive.⁴⁵

- (303) a. Ihm wurde die Geschichte nicht mehr geglaubt.
 him was the story not more believed
 'No one believed his story anymore.'
- b. * Er bekam / erhielt / kriegte die Geschichte nicht mehr
 he received obtained got the story not more
 geglaubt.
 believed

Thus the set of verbs that form a dative passive is a subset of the verbs that form a passive with *werden*.

As the following examples from Leirbukt (1987, p. 104) show, both the logical subject of the embedded predicate (304a) and the subject of the passive auxiliary (304b) may refer to an inanimate discourse referent.

- (304) a. [...] während wir im optischen Bereich von der Sonne
 while we-NOM in.the optical area by the sun
 allein 10⁸mal soviel Energie zugestrahlt bekommen
 alone 10⁸.times as.much energy-ACC PART (to).shone get

⁴⁵(303) is taken from Askedal, 1984, p. 22.

wie von allen anderen Himmelskörpern zusammen [...] ⁴⁶

as by all other heavenly.bodies together

‘while in the optical area we receive 10⁸ times as much energy from the sun alone as we do from all the other celestial bodies put together’

- b. Beide Konstruktionen erhalten die gleiche

both constructions-NOM receive the same

Konstituentenstruktur zugeschrieben. ⁴⁷

constituent.structure-ACC PART (to).written

‘Both constructions are attributed the same constituent structure.’

Example (304b) shows that the animateness restriction that Olsen (1997a, p. 315) formulates on subjects of dative passive constructions is empirically not justified since the subject *beide Konstruktionen* (‘both constructions’) is not animate. Data like this further support the view that *bekommen/erhalten/kriegen* are auxiliaries that do not impose restrictions on their non-verbal dependents.

Examples of dative passives of verbs that do not govern accusative objects have already been discussed on page 14 and are repeated here as (305) and (306) for convenience. ⁴⁸

- (305) a. Er kriegte von vielen geholfen / gratuliert / applaudiert.

he got by many helped congratulated applauded

‘Many helped congratulated applauded him.’

- b. Man kriegt täglich gedankt.

one gets daily thanked

- (306) a. „Da kriege ich geholfen.“ ⁴⁹

there get I helped

‘Somebody helps me there.’

- b. „Klärle“ hätte es wirklich mehr als verdient, auch mal zu einem

Klärle had it really more than deserved also once to a

„unrunden“ Geburtstag gratuliert zu bekommen. ⁵⁰

insignificant birthday congratulated to get

‘Klärle would have more than deserved to be wished a happy birthday, even an insignificant birthday.’

⁴⁶Stumpff, Karl, Hans-Heinrich Voigt (Hgg). 1972. *Astronomie*. Frankfurt/M., Fischer Taschenbuch Verlag, p. 229.

⁴⁷This example is from a hardly accessible paper by Leirbukt, 1977. I quoted it from Askedal, 1984, p. 23.

⁴⁸The examples in (305) are due to Wegener (1985b, p. 134; 1990, p. 75). (305a) with *gehoffen* can also be found in Eisenberg, 1994, p. 143.

⁴⁹Frankfurter Rundschau, 26.06.1998, p. 7.

⁵⁰Mannheimer Morgen, 28.07.1999, Lokales; „Klärle“ feiert heute Geburtstag.

- c. Mit dem alten Titel von Elvis Presley „I can’t help falling in love“
 with the old song by Elvis Presley I can’t help falling in love
 bekam Kassier Markus Reiß zum Geburtstag gratuliert, [...] ⁵¹
 got cashier Markus Riss to.the birthday congratulated
 ‘The cashier Markus Riss was wished a happy birthday with the old
 Elvis Presley song “I can’t help falling in love with you”.’

Hentschel and Weydt (1995) noted that such examples are not very frequent, but Wegener (1990, p. 75) explains this with the general low frequency of bivalent verbs that take a dative object and are unergative.

Dative passives of ditransitive verbs with an optional accusative object that is not expressed are easy to find. Some examples are given in (307).

- (307) a. auch er bekam im November gekündigt. ⁵²
 also he got in November dismissed
 ‘He was dismissed in November too.’
 b. Sie werden mit ihrer Situation alleingelassen bis sie am Arbeitsplatz
 immer verhaltensauffälliger werden, schließlich ständig krank sind
 und dann möglicherweise gekündigt bekommen. ⁵³
 ‘They are left alone with their situation until their behavior at work
 becomes more and more unusual, they are finally constantly ill and
 then possibly dismissed.’

Höhle (1978, p. 45) discusses the examples in (308):

- (308) a. Karl kriegte jeden Abend vorgelesen.
 Karl got every evening PART.read
 ‘Karl was read to every evening’
 b. Wir kriegten reichlich eingeschenkt.
 we got generously poured
 ‘Somebody generously gave us something to drink.’
 c. Wann kriegen wir aufgetan?
 when get we put.something.on.somebodies.plate
 ‘When does somebody put something on our plate?’

The fact that examples like (305)–(308) can be found is not surprising given that the dative passive auxiliaries do not assign semantic roles to their dependents. ⁵⁴ If they did assign a thematic role to an accusative object, (305)–(308) would be ruled out.

⁵¹Mannheimer Morgen, 21.04.1999, Lokales; Motor des gesellschaftlichen Lebens.

⁵²BZK/W69.00593, WE 05.03.1969, p. 10.

⁵³Frankfurter Rundschau, 27.06.1998, p. 3.

⁵⁴See the discussion concerning (301) and (304).

Before turning to modal infinitives and other passive-like constructions, I want to discuss the so-called remote passive which is especially interesting in the context of this study since this phenomenon gets a straightforward explanation if one assumes that verbs can form complex predicates.

3.1.4.1 Remote Passive

Usually objects of infinitives that are embedded under control verbs do not appear in the nominative, but Höhle (1978, p. 175–176) noted that this is possible in certain contexts. The following sentences are examples of the so-called remote passive:

- (309) a. daß er auch von mir zu überreden versucht wurde.⁵⁵
 that he-NOM also from me to persuade tried got
 ‘that an attempt to persuade him was also made by me.’
 b. weil der Wagen oft zu reparieren versucht wurde.
 because the car-NOM often to repair tried was
 ‘because many attempts were made to repair the car.’

The examples in (310) are corpus examples:

- (310) a. Dabei darf jedoch nicht vergessen werden, daß in der Bundesrepublik, wo ein Mittelweg zu gehen versucht wird, die Situation der Neuen Musik allgemein und die Stellung der Komponistinnen im besonderen noch recht unbefriedigend ist.⁵⁶
 ‘One should not forget that the situation of the New Music in general and the position of female composers in particular is rather unsatisfying in the Bundesrepublik, where one tries to follow a middle course.’
 b. Noch ist es nicht so lange her, da ertönten gerade aus dem Thurgau jeweils die lautesten Töne, wenn im Wallis oder am Genfersee im Umfeld einer Schuldenpolitik mit den unglaublichsten Tricks der sportliche Abstieg zu verhindern versucht wurde.⁵⁷
 ‘It still is not too long ago that the loudest protests were heard in the Thurgau itself when the most unbelievable tricks in the sphere of debt policies were applied to prevent relegation in the Valais or at Lake Geneva.’
 c. Die Auf- und Absteigenden erzeugen ungewollt einen Ton, der bewusst nicht als lästig zu eliminieren versucht wird, sondern zum Eigenklang des Hauses gehören soll, so wünschen es sich die Architekten.⁵⁸
 ‘The people who go up and down produce a tune without intention

⁵⁵Oppenrieder, 1991, p. 212.

⁵⁶Mannheimer Morgen, 26.09.1989, Feuilleton; Ist’s gut, so unter sich zu bleiben?

⁵⁷St. Galler Tagblatt, 09.02.1999, Ressort: TB-RSP; HCT und das Prinzip Hoffnung.

⁵⁸Züricher Tagesanzeiger, 01.11.1997, p. 61.

which is not consciously sought to be eliminated but which, rather, belongs to the individual sound of the building, as the architects intended.'

In remote passive constructions the object of a verb that is embedded under the passive participle becomes the subject of the clause. For instance, the verb *reparieren* ('to repair') is subcategorized for a subject and an (accusative) object. In (309b) the object is realized as nominative. Such a realization as nominative is only possible in coherent constructions, as the examples in (311) show:

- (311) a. weil oft versucht wurde, den Wagen zu reparieren.
 because often tried was the car-ACC to repair
 'because many attempts were made to repair the car.'
- b. * weil oft versucht wurde, der Wagen zu reparieren.
 because often tried was the car-NOM to repair
- c. Den Wagen zu reparieren wurde oft versucht.
 the car-ACC to repair was often tried
- d. * Der Wagen zu reparieren wurde oft versucht.
 the car-NOM to repair was often tried

The contrasts in (311) are explained by an analysis that treats the remote passive as a passivization of a predicate complex, i. e. by an analysis that assigns the structure (312) to (309b).

- (312) weil der Wagen oft [[zu reparieren versucht] wurde].
 because the car-NOM often to repair tried was
 'because many attempts were made to repair the car.'

In (311a,c) we do not have predicate complexes. The object of *zu reparieren* is part of the VP and therefore it gets accusative. The passives in (311a,c) are impersonal passives.

The remote passive is not restricted to *versuchen*. More complex examples are those that involve the object control verb *erlauben*:

- (313) a. Keine Zeitung wird ihr zu lesen erlaubt.⁵⁹
 no newspaper-NOM was her-DAT to read allowed
 'She is not allowed to read any newspapers.'
- b. Der Erfolg wurde uns nicht auszukosten erlaubt.⁶⁰
 the success-NOM was us-DAT not to.enjoy permitted
 'We were not permitted to enjoy our success.'

⁵⁹Stefan Zweig, *Marie Antoinette*. Leipzig: Insel-Verlag. 1932, p.515, quoted from Bech, 1955, p. 309. That this is an instance of the remote passive was noted by Askedal (1988, p. 13).

⁶⁰Haider, 1986b, p. 110.

The passive of the incoherent construction is an impersonal passive:

- (314) Uns wurde erlaubt, den Erfolg auszukosten.
 us-DAT was allowed the success-ACC to.enjoy

But as the examples in (313) show, the accusative of the embedded verb can surface as nominative as in the examples with *versuchen* ('to try'), which does not have nominal objects. The descriptive generalization is: In passive constructions where a coherent construction is embedded under the passive auxiliary, the first argument of the predicate complex that has structural case is realized as the subject and gets nominative.

Having examined the core cases of passive and the interaction of passivization with the formation of the predicate complex, I now turn to passive-like constructions.

3.1.5 Modal Infinitives

Apart from perfect constructions, *haben* ('to have') and *sein* ('to be') also appear together with a *zu*-infinitive. The realization of arguments corresponds to active sentences in sentences with *haben* + *zu*-infinitive (315a) and to passive sentences in sentences with *sein* + *zu*-infinitive (315b).

- (315) a. Ihr habt die Angelegenheit zu erledigen.
 you-NOM have the matter-ACC to settle
 'You have to settle the matter.'
 b. Die Angelegenheit ist von euch zu erledigen.
 the matter-NOM is by you to settle
 'The matter is to be settled by you.'

Such sentences have a modal meaning. In sentences with a *zu*-infinitive and *sein*, the modal reading can correspond to *können* ('can'), *dürfen* ('to be allowed to'), *sollen* ('should'), or *müssen* ('to have to') (Gelhaus, 1977). The sentences in (316) are examples for different modal meanings:

- (316) a. Die Tür ist für Hans leicht zu öffnen.
 the door is for Hans easy to open
 'It is easy for Hans to open the door.'
 b. Auf Liebe und Gunst von uns Menschen ist ohnehin nicht sehr zu bauen.⁶¹
 build
 'Much love and favor is not to be expected from us humans anyway.'

⁶¹Gelhaus, 1977, p. 72.

- c. Ein wütender Straußenhahn ist nicht zu unterschätzen.⁶²
 an angry ostrich.cock is not to underestimate
 'An angry ostrich is not to be underestimated.'

The logical subject can be expressed by a *von*-, *durch*-, or *für*-PP.

- (317) Das Ziel wird für ihn nicht zu erreichen gewesen sein.⁶³
 the aim/goal will for him not to reach been is
 'Presumably the aim/goal could not be reached by him.'

Usually the preposition *für* ('for') is used with the *können* reading, and with the *müssen/sollen* reading, one uses one of the prepositions *von* and *durch*.

In general, for every active sentence there is a sentence with the *zu*-infinitive and *haben* and for every passive sentence there is a sentence with the *zu*-infinitive and *sein* (Bierwisch, 1963, p. 72).⁶⁴

The example (318a) is an active sentence that corresponds to the modal infinitive with *haben* in (315a) and the example (318b) is a passive sentence that corresponds to the modal infinitive with *sein* in (315b).

- (318) a. Ihr müßt die Angelegenheit erledigen.
 you must the matter settle
 'You have to settle the matter.'
- b. Die Angelegenheit muß von euch erledigt werden.
 the matter must by you settled be
 'The matter has to be settled by you.'

Note that the reverse does not hold: Not all verbs that form a modal infinitive construction with *sein* do have a passive with *werden*. This is shown by the following examples which are discussed by Höhle (1978, p. 53):

- (319) a. Dagegen ist schwer anzukommen.
 there.against is difficult to.be.able.to.fight
 'It is difficult to fight this.'
- b. Auch für dich ist etwas Brot zu bekommen.
 also for you is some bread to become
 'It is possible to get some bread for you.'
- c. Der Zeitpunkt war schwer zu erfahren gewesen.
 the time was difficult to find.out been
 'It was difficult to find out the time.'
- d. Karten waren noch lange zu erhalten.
 cards were still long to get
 'It was still possible to get cards for a long time.'

⁶²Gelhaus, 1977, p. 69.

⁶³Bierwisch, 1963, p. 72.

⁶⁴The examples (318) are also taken from Bierwisch.

Haider (1986a, p. 17) discusses the examples in (320) which also show that there also are some modal constructions with *sein* that do not have a *werden* passive:

- (320) a. * Ein einziges Würstchen wird noch gehabt.
 a single sausage gets still had
 Intended: 'Somebody has a single sausage.'
- b. Ein einziges Würstchen ist noch zu haben.
 a single sausage is still to have
 'A single sausage is still to be had.'
- c. * Ihm wird leicht gefallen.
 him gets easy liked
 'It is easy for him to like something.'
- d. Ihm ist leicht zu gefallen.
 him is easy to like
 'It is easy to be liked by him.'

Haider explains this difference by assuming that *sein* is less restrictive than the passive auxiliary *werden*: While *werden* requires a verb that assigns its logical subject the agent role, *sein* does not require any particular role assignment.⁶⁵

The examples in (321) show that the modal infinitive construction with *sein* is not possible with unaccusative verbs although modal constructions with *haben* may be formed.⁶⁶

- (321) a. die Gesetzesvorschrift selbst hat ersatzlos zu
 the law itself has without.replacement to
 entfallen⁶⁷
 be.dropped
 'The law itself is to be dropped without replacement.'
- b. * Deshalb ist ersatzlos zu entfallen.
 hence is without.replacement to be.dropped

⁶⁵Note that this explanation requires a broad understanding of the term agent. For instance the subject of the verb *sehen* ('see') has to be categorized as an agent.

- (i) a. Er sah den Einbrecher.
 he saw the burglar
- b. Der Einbrecher wurde gesehen.
 the burglar was seen

As I have shown in Section 3.1.2, one also has to assume inanimate agents (for instance *die Grammatikalisierung* ('the grammaticalization')) if passive is made sensitive to the semantic role of the subject. Hentschel and Weydt (1995, p. 175) explicitly allow for inanimate referents as agents.

⁶⁶Höhle's example (319a) is a modal infinitive construction with *sein* and an unaccusative verb. I have no explanation for the grammaticality of this example.

⁶⁷Die Zeit, 27.12.1985, p. 4.

- c. Hat er zu gelingen, ist es wichtig, sich selber zu beobachten⁶⁸
has he to succeed is it important self self to observe
'If he is to succeed it is important that he observes himself.'
- d. * Deshalb ist zu gelingen.
hence is to succeed
- e. Das hat Ihnen diesmal zu gelingen.
this has you this.time to be.successful
'This has to be successful this time.'
- f. * Ihnen ist diesmal zu gelingen.
you is this.time to be.successful
- g. Solche wichtigen Sachen haben dir nicht wieder zu entfallen.
such important things have you not again to be.forgotten
'You are not to forget such important things again.'
- h. * Dir ist leicht zu entfallen.
you is easy to forget
Intended: 'It is easy to be forgotten by you.'

Neither the intransitive versions of the unaccusative verbs in (321a,c) nor the ones with the dative object in (321e,g) allow a modal construction with *sein*.

So we do not have a clear picture of the class of verbs that allow for a modal infinitive construction with *sein*: Some, but not all, verbs that do not have an agentive passive allow a modal infinitive construction with *sein*.

3.1.6 *lassen* Passive

In this section, I discuss passive forms that appear together with *lassen*. The sentence in (322a) corresponds to a personal passive, and the sentences in (322b,c) to an impersonal one.⁶⁹

- (322) a. Er läßt den Wagen (von einem Fachmann) reparieren.
he-NOM lets the car-ACC by an expert repair
'He has an expert repair the car.'
- b. Der Vater läßt der Mutter (vom Sohn) helfen.
the father-NOM lets the mother-DAT by.the son help
'The father has the son help the mother.'
- c. Die Regierung läßt der Toten (vom Volke) gedenken.
the government-NOM lets the dead-GEN by.the people remember
'The government has the dead be commemorated by the people.'

The logical subject of *reparieren* ('to repair'), *helfen* ('to help'), and *gedenken* ('to remember') is suppressed, but may be realized by the *von*-PP.

⁶⁸St. Galler Tagblatt, 23.10.1998, Ressort: TB-ARB; Wo bleibt die Paar-Beziehung?

⁶⁹The examples in (322b,c) are quoted from Reis, 1976a, p. 19.

lassen is ambiguous between a causative and a permissive reading:

- (323) a. Der Mann läßt den Fachmann den Wagen reparieren.
 the man lets the expert the car repair
 ‘The man lets/has the expert repair the car.’
 b. Die Mutter ließ das Schnitzel anbrennen.⁷⁰
 the mother let the schnitzel burn
 ‘The mother let the schnitzel burn.’
 ‘The mother burnt the schnitzel.’
 c. Peter ließ es regnen.
 Peter let it-EXPL rain
 ‘Peter let it rain.’
 ‘Peter made it rain.’

In *lassen* passive constructions, *lassen* usually has the causative reading. However, as Reis (1976a, p. 13) noted, the permissive reading is also possible if the subject of the embedded verb is a reflexive pronoun.

- (324) a. Der Sänger ließ sich schließlich, um endlich seine Ruhe zu
 the singer let self finally COMP at.last his peace to
 haben, von seinen Verehrerinnen abküssen.⁷¹
 have by his admirers.(female) PART (off)kiss
 ‘Finally the singer allowed his female fans to kiss him, so that he could
 get some peace and quiet at long last.’
 b. Gerhard Schröders Doppelgänger mußte sich in Abwesenheit des
 Gerhard Schröder’s Doppelganger had.to self in absence of.the
 Originals die Leviten lesen lassen.⁷²
 original the Leviticus read let
 ‘Gerhard Schröder’s Doppelganger had to have the riot act read to him
 as the original was not there.’
 c. sich vom Wind streicheln und sich von der feinen Gischt
 self by.the wind stroke and self from the fine spray
 erfrischen zu lassen⁷³
 refresh to let
 ‘to be caressed by the wind and refreshed by the fine spray’

Note that the example (324c) also shows that the logical subject of the embedded verb may be inanimate.

⁷⁰Reis, 1976a, p. 13.

⁷¹Reis, 1976a, p. 13.

⁷²Mannheimer Morgen, 05.03.1999, Politik; „Derblecken“ auf dem Nockherberg.

⁷³Mannheimer Morgen, 03.08.1998, Sport; „Fun“ beim Sport: Mit Windsurfen fing alles an.

As the examples in (325) show, the *lassen* passive is not possible with all verbs that allow the agentive passive (Reis, 1976a, p. 20). That it is possible for a subset only is probably due to semantic restrictions by *lassen*.

- (325) a. Es wurde geglaubt, den Kindern nicht mehr helfen zu können.
 it was believed the children not more help to can
 'It was believed that the children could not be helped anymore.'
- b. * Er ließ (von allen) glauben, den Kindern nicht mehr helfen zu können.
 he let by all believe the children not more help to can
 Intended: 'He let everyone believe that he could do nothing more for the children.'

In (326a) we have the permissive reading which is not possible in the *lassen* passive. Therefore the embedding of *glauben* in *lassen* passive constructions is impossible.

- (326) a. Er ließ alle die Geschichte glauben.
 he let all the story believe
 'He let everyone believe the story.'
- b. * Er ließ die Geschichte (von allen) glauben.
 he let the story by all believe

The set of verbs that allow the *lassen* passive is a subset of the verbs that allow the agentive passive.

As with the agentive and stative passive, the *lassen* passive is impossible with expletive predicates:

- (327) * Karl läßt regnen.
 Karl lets rain.
 Intended: 'Karl made it rain.'

After the discussion of various passive forms, I provide an analysis in the following section.

3.2 The Analysis

In HPSG grammars for English (Pollard and Sag, 1987, p. 214–218) and in earlier versions of LFG (Bresnan, 1982c), the passive is analyzed using a lexical rule that takes a base verb as input and produces a passive participle with appropriately changed valence requirements. Kiss (1992, p. 276), Hinrichs and Nakazawa (1998), Kathol (1998, p. 255), and Müller (2001c) developed similar lexical rule-based analyses for German. An alternative to such approaches was developed by Haider (1986a)⁷⁴ who assumes only one representation for the second participle.

⁷⁴See also Bech, 1955, p. 37 for an early suggestion of a raising analysis.

The auxiliaries execute the argument structure of the embedded participle and determine which of the arguments of the embedded verb are realized at the surface. Various authors working in the HPSG paradigm adopted this view (Kathol, 1991, 1994; Heinz and Matiasek, 1994; Lebeth, 1994a; Pollard, 1994; Müller, 1999a, 2002a). The advantage of such raising analyses is that a single entry for the second participle is sufficient for both perfect tense and passive constructions. The auxiliary for the perfect (328a), passive (328b), or dative passive (328c) attracts the arguments of the embedded participle *geschenkt* ('given') in a way that is appropriate for the construction at hand.

- (328) a. Der Mann hat den Ball dem Jungen geschenkt.
 the man-NOM has the ball-ACC the boy-DAT given
 'The man gave the ball to the boy.'
- b. Der Ball wurde dem Jungen geschenkt.
 the ball-NOM was the boy-DAT given
 'The ball was given to the boy.'
- c. Der Junge bekam den Ball geschenkt.
 the boy-NOM got the ball-ACC given
 'The boy got the ball as a present.'

In the passive in (328b), the accusative object becomes the subject and the logical subject of the main verb is suppressed. In the dative passive, a dative object is promoted to subject.⁷⁵

The situation is similar with the bare infinitive in the future construction (329a), in the AcI construction (329b), in the causative passive (329c), and in the middle construction (329d). Although the infinitive is used in various different constructions, there is no morphological difference:

- (329) a. weil ein Mechaniker den Wagen reparieren wird.
 because a mechanic-NOM the car-ACC repair will
 'because a mechanic will repair the car.'
- b. weil Karl einen Mechaniker den Wagen reparieren läßt.
 because Karl-NOM a mechanic-ACC the car-ACC repair lets
 'because Karl has a mechanic repair the car.'
- c. weil Karl den Wagen (von einem Mechaniker) reparieren
 because Karl-NOM the car-ACC by a mechanic repair
 läßt.
 lets
 'because Karl has somebody / a mechanic repair the car.'

⁷⁵Lebeth (1994b) assumes that the object is not promoted to subject, but is represented as object. See Müller, 1999a, p. 318 for some discussion of this approach.

- d. weil sich der Wagen nicht reparieren läßt.
 because self the car-NOM not repair lets
 'because it is impossible to repair the car.'

The infinitive is used in various different constructions and the dependents of the infinitive are realized in different forms or do not surface at all. In (329a), the auxiliary takes over the arguments of the embedded verb, but does not affect the realization at the surface. In (329b), the subject of *reparieren* ('to repair') is realized as object of *lassen* and gets accusative. The examples in (329c,d) can be analyzed as object-to-object and object-to-subject-raising in a similar way to the analyses that have been suggested for examples like (328b) with passive participles (Gunkel, 1999, p. 151). That the logical subject of *reparieren* may be suppressed in *lassen* passive constructions (329c) and in the middle construction in (329d) is encoded in the respective lexical entries of *lassen* ('to let').

In what follows, I discuss the object-to-subject-raising analyses that have been suggested in the literature and show what problems they have. I will extend and revise Heinz and Matiassek's approach so that it captures modal infinitive constructions and is consistent with the representations used throughout this book.

As was shown in Section 3.1.1, the so-called unaccusative verbs have subjects that behave like objects. These verbs have to be distinguishable from unergative verbs in the grammar. There are basically two ways to achieve this: One can use a feature that points to the argument with accusative object properties if there is one, or one can use a feature that singles out the argument with subject properties, if there is one. The first approach was suggested by Pollard (1994), who builds on ideas from Kathol, 1991, and it was elaborated by me in my 1999 book. The second analysis was originally developed by Haider (1986a) in the GB framework and partly transferred to HPSG by Heinz and Matiassek (1994) and Lebeth (1994a). A version of Heinz and Matiassek's analysis was also adopted by Gunkel (1999), who deals with causatives and the *lassen* passive. Kathol (1994, Chapter 7.3.3) discusses a further variant which is examined in Section 3.3.1. The approach in which the accusative element is singled out will be discussed briefly in Section 3.3.2.

Haider suggested designating the argument that has subject properties. This designated argument is defined to be the subject of unergative verbs. Unaccusative verbs do not have a designated argument. Heinz and Matiassek assume that subjects are represented in the SUBCAT list for all verbs, including non-finite ones (For the representation of the subject that is assumed in this book see Chapter 1.6). They introduce a new list-valued feature DA that is used to point to the argument that is designated. The following enumeration gives examples for *ankommen* ('to arrive'), *tanzen* ('to dance'), *auffallen* ('to notice'), *lieben* ('to love'), *schicken* ('to give as a present'), and *helfen* ('to help').

(330)	DA	SUBCAT
a. ankommen (unaccusative):	$\langle \rangle$	$\langle \text{NP}[_{str}] \rangle$
b. tanzen (unergative):	$\langle \boxed{1} \text{NP}[_{str}] \rangle$	$\langle \boxed{1} \rangle$
c. auffallen (unaccusative):	$\langle \rangle$	$\langle \text{NP}[_{str}], \text{NP}[_{ldat}] \rangle$
d. lieben (unergative):	$\langle \boxed{1} \text{NP}[_{str}] \rangle$	$\langle \boxed{1}, \text{NP}[_{str}] \rangle$
e. schenken (unergative):	$\langle \boxed{1} \text{NP}[_{str}] \rangle$	$\langle \boxed{1}, \text{NP}[_{str}], \text{NP}[_{ldat}] \rangle$
f. helfen (unergative):	$\langle \boxed{1} \text{NP}[_{str}] \rangle$	$\langle \boxed{1}, \text{NP}[_{ldat}] \rangle$

The unaccusative verbs *ankommen* and *auffallen* have the empty list as their DA value. The unergative verbs all contain an element in the DA list. This element is identical to the subject. Note that the intransitive verbs *ankommen* and *tanzen* and the verbs that take a dative *auffallen* and *helfen* cannot be distinguished in terms of the arguments they take. Both intransitive verbs take just their subject and both *auffallen* and *helfen* take a subject and a dative object. Therefore accounts that are solely based on valence are unable to explain the different behavior of verbs of the respective classes.

3.2.1 Agentive Passive

Haider suggests blocking the designated argument for participles. Blocking the designated argument means that it cannot be realized in projections of the participle. Only the perfect auxiliary can deblock this argument. Heinz and Matiassek suggest the lexical rule in (331) that licenses the lexical entries in (332) for participles.⁷⁶

$$(331) \quad \left[\begin{array}{cc} \text{HEAD} & \left[\begin{array}{c} \text{VFORM } bse \\ verb \end{array} \right] \\ \text{DA} & \boxed{1} \\ \text{SUBCAT} & \boxed{1} \oplus \boxed{2} \end{array} \right] \mapsto \left[\begin{array}{cc} \text{HEAD} & \left[\begin{array}{c} \text{VFORM } ppp \\ verb \end{array} \right] \\ \text{DA} & \boxed{1} \\ \text{SUBCAT} & \boxed{2} \end{array} \right]$$

This lexical rule subtracts the designated argument from the SUBCAT list. It follows that this element cannot be realized in a projection of the participle. (332) shows the output of the rule for the verbs in (330).

⁷⁶Note that it is not necessary to assume a lexical rule. An alternative is to assume that the argument blocking is done by the circumfix *ge-* *-t*. Which approach is chosen depends on general assumptions about inflection and derivation. See Chapter 6.2.5 for a general discussion. Note furthermore that Heinz and Matiassek assume that the lexical rule relates the participle to a bare infinitive. This is a view that is not adopted in this book. Instead, I assume that both the base form and the participle form are related to the stem.

The following lexical rules do not contain specifications of the PHON value. The discussion of inflection will be deferred to Chapter 6.2.5.3.

- (332)
- | | DA | SUBCAT |
|--------------------------------|---|---|
| a. angekommen (unaccusative): | $\langle \rangle$ | $\langle \text{NP}[\text{str}] \rangle$ |
| b. getanzt (unergative): | $\langle \text{NP}[\text{str}] \rangle$ | $\langle \rangle$ |
| c. aufgefallen (unaccusative): | $\langle \rangle$ | $\langle \text{NP}[\text{str}], \text{NP}[\text{ldat}] \rangle$ |
| d. geliebt (unergative): | $\langle \text{NP}[\text{str}] \rangle$ | $\langle \text{NP}[\text{str}] \rangle$ |
| e. geschenkt (unergative): | $\langle \text{NP}[\text{str}] \rangle$ | $\langle \text{NP}[\text{str}], \text{NP}[\text{ldat}] \rangle$ |
| f. geholfen (unergative): | $\langle \text{NP}[\text{str}] \rangle$ | $\langle \text{NP}[\text{ldat}] \rangle$ |

Heinz and Matiassek's passive auxiliary is given in (333), in a notation that was adapted to fit the notation used in this book.⁷⁷

- (333) *werden* (passive auxiliary):
- $$\left[\begin{array}{l} \text{DA} \quad \langle \rangle \\ \text{SUBCAT} \quad \boxed{1} \\ \text{XCOMP} \quad \langle \text{V}[\text{ppp}, \text{LEX}+, \text{DA} \langle \text{NP}_{\text{ref}} \rangle, \text{SUBCAT} \boxed{1}] \rangle \end{array} \right]$$

The passive auxiliary takes as complement a participle that has a designated argument, i. e. an element in the DA list. This correctly predicts that the passive of unaccusative verbs, that do not have anything in DA, is impossible. Since the DA element is required to be referential, the passive of expletives is excluded.

The lexical entry in (333) accounts for both the personal and impersonal passive: When *wird* is combined with *getanzt* ('danced') or *geholfen* ('helped') we get a verbal complex that has no argument (*getanzt wird*) or a dative object (*geholfen wird*). Since the dative is a lexical case, the verbal complex does not have an argument with structural case and hence we have a subjectless construction, i. e. a case of impersonal passive. When we combine *geliebt* ('loved') or *geschenkt* ('given as a present') with *wird*, we get a verbal complex with a valence list that contains a NP with structural case. This element gets nominative by the case principle that was introduced on page 15 and hence we have an instance of the personal passive.

Having shown that the lexical entry for the passive auxiliary can account for the personal and the impersonal passive, I now show how the double application of passive as in (334c) is excluded.

- (334) a. weil er den Film liebt.
 because he-NOM the movie-ACC loved
 'because he loved the movie.'
- b. weil der Film geliebt wurde.
 because the movie-NOM loved was
 'because the movie was loved.'

⁷⁷I also added constraints to the respective entries that ensure that the subject of the embedded verb is referential to exclude passives of expletive verbs.

- c. * weil geliebt worden wurde.
because loved was was

The sentence (334b) is the personal passive of (334a). Without any constraints on passivization, one could form an impersonal passive of (334b) which would be (334c). However, (334c) is excluded by the specification of the DA value in the lexical entry for the passive auxiliary in (333). The DA value of the passive auxiliary is the empty list. Therefore the combination of the auxiliary and the participle is unaccusative in the sense that the resulting encoding is parallel to that of a simple unaccusative verb. Since the embedding of unaccusative verbs under the passive auxiliary is ruled out by the appropriate specification of the DA value of the embedded participle, the embedding of the unaccusative verbal complex *geliebt worden* under the passive auxiliary *wurde* in (334c) is also ruled out.

In contrast to the passive auxiliary in (333), the perfect auxiliary given in (335) unblocks the designated argument. It takes the concatenation of the DA value and the SUBCAT list of the embedded participle as its own SUBCAT value.

(335) *haben* (perfect auxiliary):

$$\left[\begin{array}{l} \text{DA} \quad \boxed{1} \\ \text{SUBCAT} \quad \boxed{1} \oplus \boxed{2} \\ \text{XCOMP} \quad \left\langle V[\text{ppp}, \text{LEX+}, \text{DA} \boxed{1}, \text{SUBCAT} \boxed{2}] \right\rangle \end{array} \right]$$

So blocked designated arguments get reintroduced into the valence list by the auxiliary. If the DA value is the empty list, i. e., if an unaccusative verb is embedded under the perfect auxiliary, nothing is added to the SUBCAT list of the embedded participle. Since nothing is blocked in the case of unaccusatives, all arguments get realized in the perfect construction.

3.2.2 Stative Passive

Turning to a raising from object-to-subject analysis of the second kind of passive, the stative passive we saw exemplified in examples (291) is treated exactly parallel to the agentive passive. The CAT value of the auxiliary *sein* ('to be') for the stative passive, shown in (336), therefore is identical to that we saw in (333) for the passive auxiliary *werden* forming the agentive passive:

(336) *sei-* (stative passive auxiliary):

$$\left[\begin{array}{l} \text{DA} \quad \langle \rangle \\ \text{SUBCAT} \quad \boxed{1} \\ \text{XCOMP} \quad \left\langle V[\text{ppp}, \text{LEX+}, \text{DA} \langle \text{NP}_{ref} \rangle, \text{SUBCAT} \boxed{1}] \right\rangle \end{array} \right]$$

The specification of the DA value excludes stative passives of expletive (337a) and subjectless predicates (337b):

- (337) a. * Ist heute geregnet?
is today rained

- b. * Dem Student ist (vom Professor) vor der Prüfung gegraut.
 the student is by.the professor before the exam dreaded

3.2.3 Dative Passive

The dative passive can be described using the same mechanism of argument attraction as for the agentive and stative passives. As was shown in Section 3.1.4, the dative passive is not possible with unaccusative verbs. The lexical entry for the dative passive auxiliary requires the embedded participle to have a referential designated argument. Therefore the embedding of unaccusative verbs is excluded:

- (338) *bekomm-* (dative passive auxiliary):

$$\left[\begin{array}{l} \text{DA} \quad \langle \boxed{1} \rangle \\ \text{SUBCAT} \quad \langle \boxed{1} \text{ NP}[\textit{str}] \boxed{2} \rangle \oplus \boxed{3} \oplus \boxed{4} \\ \text{XCOMP} \quad \left\langle \begin{array}{l} \text{V}[\textit{ppp}, \text{LEX}+, \text{DA} \langle \text{NP}_{\textit{ref}} \rangle], \\ \text{SUBCAT} \boxed{3} \oplus \langle \text{NP}[\textit{ldat}] \boxed{2} \rangle \oplus \boxed{4}, \text{XCOMP} \langle \rangle \end{array} \right\rangle \end{array} \right]$$

The subject of the dative passive auxiliary is coindexed with the dative element of the embedded verb. All elements from the SUBCAT list of the embedded verb are raised to the SUBCAT list of *bekommen* except for the dative object which is promoted to subject.

The lexical entry in (338) differs from the one given by Heinz and Matiassek (1994, p. 228) in that the SUBCAT list of the embedded verb is not required to start with an NP with structural case. As was shown in Section 3.1.4, the dative passive is not restricted to verbs that govern an accusative object. Since the actual instantiation of $\boxed{3}$ is not determined, the sentence in (339) can also be analyzed.

- (339) Ich bekam (von Karl) geholfen.
 I-NOM got by Karl helped
 'I was helped by Karl.'

In the case of (339) the value of $\boxed{3}$ in (338) is the empty list.

In sentences like (298b) – repeated here as (340) – the embedded verb has a direct object and therefore $\boxed{3}$ is instantiated as $\langle \text{NP}[\textit{str}] \rangle$.

- (340) Ich bekomme ein Buch geschenkt.
 I-NOM get a book-ACC given
 'I get a book as a present.'

In an analysis of the example in (341b), which is the dative passive of (341a), the $\boxed{4}$ in (338) is not empty. It contains the PP complement that is realized as *auf die Finger* ('on the fingers').

- (341) a. Jemand klopfte ihnen auf die Finger.
 someone-NOM knocked them-DAT on the fingers
 'Someone rapped them on their knuckles.'

- b. daß wir noch nachsitzen mußten und auf die Finger geklopft
 that we-NOM still after.sit had.to and on the fingers knocked
 bekamen.⁷⁸
 got
 ‘that we still had detentions and that we got our knuckles rapped.’

In the previous subsections, I have demonstrated how Heinz and Matiassek’s approach works for the agentive passive, the stative passive, and the dative passive. However, the extension of their approach to modal infinitives turned out to be problematic: Heinz and Matiassek assume that the subject of infinitives with *zu* are represented on the SUBCAT list. This has two disadvantages: First, incoherently constructing verbs select for a verbal projection that is not fully saturated. This makes impossible a uniform characterization of maximal projections as something with an empty SUBCAT list. Furthermore, such a representation is incompatible with Haider’s approach to modal infinitives: According to Haider, the subject (external argument) of infinitives is blocked. It is deblocked by *haben* in the modal infinitive construction and it remains blocked if the *zu*-infinitive is combined with *sein*.

In what follows, I will extend Heinz and Matiassek’s analysis to modal infinitives and modify their analysis of the passive so that Haider’s ideas are formalized properly.

3.2.4 Modal Infinitives

Haider suggests that modal infinitives with *sein* are not entirely parallel to the passive. Instead of blocking the designated argument, the infinitival *zu* blocks the syntactic subject, i. e. the external argument in GB terminology. Our example verbs are represented as in (342):

(342)	DA	SUBCAT	SUBJ
a. anzukommen (erg.):	$\langle \rangle$	$\langle \rangle$	$\langle \text{NP}[\text{str}] \rangle$
b. zu tanzen (unerg.):	$\langle \boxed{} \text{NP}[\text{str}] \rangle$	$\langle \rangle$	$\langle \boxed{} \rangle$
c. aufzufallen (erg.):	$\langle \rangle$	$\langle \text{NP}[\text{ldat}] \rangle$	$\langle \text{NP}[\text{str}] \rangle$
d. zu lieben (unerg.):	$\langle \boxed{} \text{NP}[\text{str}] \rangle$	$\langle \text{NP}[\text{str}] \rangle$	$\langle \boxed{} \rangle$
e. zu schenken (unerg.):	$\langle \boxed{} \text{NP}[\text{str}] \rangle$	$\langle \text{NP}[\text{str}], \text{NP}[\text{ldat}] \rangle$	$\langle \boxed{} \rangle$
f. zu helfen (unerg.):	$\langle \boxed{} \text{NP}[\text{str}] \rangle$	$\langle \text{NP}[\text{ldat}] \rangle$	$\langle \boxed{} \rangle$

The auxiliary *haben* deblocks the blocked element (represented in SUBJ here) and the auxiliary *sein* leaves it blocked. Haider differentiates between bare infinitives and infinitives with *zu*. The subject of *zu*-infinitives is blocked whereas the

⁷⁸Frankfurter Rundschau, 03.06.1998, p. 2.

subject of bare infinitives is not. In the HPSG implementation this would be captured by different locations for the representation of the subject: Bare infinitives would have their subject on the SUBCAT list whereas infinitives with *zu* would have their subject in the SUBJ list. The drawback of such an encoding is that one cannot describe the class of subject raising verbs in a uniform way, as was possible in Chapter 2.2.3. Modal verbs which select bare infinitives would raise the subject of their verbal complements from the SUBCAT list while verbs like *scheinen* ('seem') or *anfangen* ('begin') which select an infinitive with *zu* would raise the subject of the embedded verb from its SUBJ list. In order to be able to capture the generalization about raising verbs, I suggest representing both the subject of bare infinitives and the subject of infinitives with *zu* in the SUBJ list. The only non-finite form that has a different representation of the subject (if there is any) is the participle. I assume that the SUBCAT list of lexical entries, i. e. of stems, contains all arguments. Furthermore, the stem representation includes a list-valued DA feature. The list contains the element that has subject properties. The second participle and the non-finite forms are licensed by lexical rules. The participle lexical rule blocks the element in DA by removing it from the SUBCAT list. The rule is shown in (343):

(343) Argument Blocking Lexical Rule for Participles:

$$\left[\begin{array}{c} \text{SYNSEM|LOC|CAT} \\ \text{stem} \end{array} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{DA } \boxed{1} \\ \text{verb} \end{array} \right] \\ \text{SUBCAT } \boxed{1} \oplus \boxed{2} \end{array} \right] \right] \mapsto \\
 \left[\begin{array}{c} \text{SYNSEM|LOC|CAT} \\ \text{word} \end{array} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{VFORM } \textit{ppp} \\ \text{SUBJ } \boxed{1} \\ \text{verb} \end{array} \right] \\ \text{SUBCAT } \boxed{2} \end{array} \right] \right]$$

The blocked element is represented as the value of the DA feature and as the value of the SUBJ feature in the output of the lexical rule. (Remember that there is a convention that features that are not mentioned in the output of a lexical rule are carried over from the input.) The infinitival forms have the subject blocked and this blocked element is also presented as value of SUBJ. Thus we have a uniform representation of blocked elements and they can be deblocked by the auxiliaries for the perfect and the modal infinitive with *haben* in the same way. The adapted entries for the auxiliaries are shown in (344) and (345):

(344) *hab-* (perfect auxiliary):

$$\left[\begin{array}{c} \text{HEAD|DA } \boxed{1} \\ \text{SUBCAT } \boxed{1} \oplus \boxed{2} \\ \text{XCOMP } \left\langle \text{V[LEX+}, \text{SUBJ } \boxed{1}, \text{SUBCAT } \boxed{2}] \right\rangle \end{array} \right]$$

The auxiliary given in (344) unblocks the SUBJ value of the embedded verb: It takes the concatenation of the SUBJ value and the SUBCAT list of the embedded verb as its own SUBCAT value. Since there are no constraints on the SUBJ value of the embedded participle, both the embedding of expletive predicates (345a) and the embedding of subjectless constructions (345b) are predicted to be possible.

- (345) a. Es hat geregnet.
 it-EXPL has rained
 ‘It rained.’
 b. Dem Student hat vor der Prüfung gegraut.
 the student-DAT has before the exam dreaded
 ‘The student dreaded the exam.’

The lexical entry for *sein* ignores the blocked element. The SUBJ value of the embedded verb is not concatenated with its SUBCAT list. Only the elements on the SUBCAT list, i. e. the elements which are not blocked, are raised.

- (346) *sei-* (perfect auxiliary):

$$\left[\begin{array}{l} \text{HEAD|DA } \langle \rangle \\ \text{SUBCAT } \boxed{} \\ \text{XCOMP } \langle \text{V}[\text{SUBCAT } \boxed{}] \rangle \end{array} \right]$$

Since the participles of unaccusative verbs like *angekommen* (‘arrived’) and *aufgefallen* (‘noticed’) do not have designated arguments, their SUBJ list does not contain an element and hence nothing has to be unblocked in the perfect construction with unaccusatives.

Note that this lexical entry does not cover the examples (273) and (274) that have been discussed in Section 3.1.1. If the subject of *angehen* (‘to tackle’) and *eingehen* (‘to enter’) is taken to be the designated argument, it should be blocked in the perfect construction. If we decide not to designate an argument, the passive should be impossible. The only way to capture such sentences seems to be the stipulation of an additional entry for *sein* that parallels the entry for *haben* in (344) and that can be used with exceptional verbs like *angehen* and *eingehen*.

As was motivated in the previous subsection, the auxiliary for the stative passive is more specific than the perfect auxiliary in that it requires the embedded verb to have a referential subject:

- (347) *sei-* (stative passive auxiliary):

$$\left[\begin{array}{l} \text{HEAD|DA } \langle \rangle \\ \text{SUBCAT } \boxed{\text{I}} \\ \text{XCOMP } \langle \text{V}[\text{DA } \langle \text{NP}_{ref} \rangle, \text{SUBCAT } \boxed{}] \rangle \end{array} \right]$$

The specification of the DA value excludes stative passives of expletive and subjectless predicates.

The following description of a lexical rule is a supertype of the rules that license lexical items for *bse* and *inf* forms. The DA value in the lexical entry for the stem is ignored. Instead, the first argument of the verb that has structural case is represented in the SUBJ value of the output of the rule. *first-np-str* is a relational constraint that splits the list $\boxed{1}$ into two parts $\boxed{2}$ and $\boxed{3}$. $\boxed{2}$ contains the first NP with structural case in $\boxed{1}$ if there is one and $\boxed{3}$ contains the other elements of $\boxed{1}$. If $\boxed{1}$ does not contain an NP with structural case, the list $\boxed{2}$ is the empty list and $\boxed{1}$ and $\boxed{3}$ are identical.

(348) Argument Blocking Lexical Rule for Bare and *zu*-infinitives:

$$\begin{array}{c}
 \left[\begin{array}{l} \text{SYNSEM|LOC|CAT} \\ \text{stem} \end{array} \left[\begin{array}{l} \text{HEAD} \quad \textit{verb} \\ \text{SUBCAT} \quad \boxed{1} \end{array} \right] \right] \mapsto \\
 \left[\begin{array}{l} \text{SYNSEM|LOC|CAT} \\ \text{word} \end{array} \left[\begin{array}{l} \text{HEAD} \quad \left[\begin{array}{l} \text{VFORM} \quad \textit{inf-or-bse} \\ \text{SUBJ} \quad \boxed{2} \\ \textit{verb} \end{array} \right] \\ \text{SUBCAT} \quad \boxed{3} \end{array} \right] \right] \\
 \wedge \textit{first-np-str}(\boxed{1}, \boxed{2}, \boxed{3})
 \end{array}$$

Values of features that are not mentioned in lexical rules are carried over from the input to the output. Therefore the DA value of *zu*- or *bse*-infinitives is identical to the DA value of the stem. This is important for the analysis of the *lassen* passive, which I discuss in Section 3.2.6.

This means that the lexical items for the second participles contain the underlying subject in SUBJ whereas the lexical items for the other non-finite forms contain the surface subject in SUBJ, i. e. the least oblique element that is realized as nominative in the active clause.

The lexical entries for the auxiliaries which are used in modal infinitive constructions are parallel to those shown in (344) and (347): *haben* deblocks the logical subject of the *zu*-infinitive and *sein* leaves the logical subject blocked: The lexical entry for *haben* does not require the embedded verb to have an element in SUBJ. Therefore the embedding of expletive predicates (349a) and subjectless constructions (349b) is allowed.

- (349) a. Es hat zu regnen.
 it-EXPL has to rain
 ‘It has to rain.’
 b. Den Studenten hat vor der Prüfung zu grauen.
 the students has before the exam to dread
 ‘The students have to dread the exam.’

Since the *sein* that is used in modal constructions is analogous to (347) and requires the embedded verb to have something in SUBJ, similar examples with *sein* are excluded:

- (350) a. * Heute ist zu regnen.
 today is to rain
 b. * Den Studenten ist vor der Prüfung zu grauen.
 the students is before the exam to dread

Furthermore, the following contrasts reported by Haider (1990a, p. 137) are correctly predicted:

- (351) a. daß ihm nicht zu helfen ist.
 that him-DAT not to help is
 ‘that it is impossible to help him’
 b. * daß ihm nicht geholfen zu werden ist.
 that him-DAT not helped to be is

zu helfen has a blocked subject that can be accessed by *ist*. The verbal complex *geholfen zu werden* is a subjectless construction which therefore cannot be embedded under *ist*.

3.2.5 Remote Passive

With a lexical entry like (352) for the version of *versuchen* that appears in coherent constructions, the remote passive can be explained without any new mechanisms.⁷⁹

- (352) *versuch-* (‘try’, coherent version):
- $$\left[\begin{array}{l} \text{HEAD|DA} \langle \boxed{1} \rangle \\ \text{SUBCAT} \langle \boxed{1} \text{ NP}[\text{str}]\boxed{2} \rangle \oplus \boxed{3} \\ \text{XCOMP} \langle \text{V}[\text{LEX+}, \text{inf}, \text{SUBJ} \langle \text{NP}[\text{str}]\boxed{2} \rangle, \text{SUBCAT} \boxed{3}] \rangle \end{array} \right]$$

The argument blocking lexical rule in (343) licenses the lexical entry in (353):

- (353) *versucht* (‘tried’, coherent version, participle):
- $$\left[\begin{array}{l} \text{HEAD|DA} \langle \text{NP}[\text{str}]\boxed{2} \rangle \\ \text{SUBCAT} \boxed{3} \\ \text{XCOMP} \langle \text{V}[\text{LEX+}, \text{inf}, \text{SUBJ} \langle \text{NP}[\text{str}]\boxed{2} \rangle, \text{SUBCAT} \boxed{3}] \rangle \end{array} \right]$$

⁷⁹This lexical entry differs from the one given by Heinz and Matiassek (1994, p. 232) in that the subjects of the matrix and the embedded verb are not identified. As was discussed in Chapter 2.1.3.2, control relations are best described with coindexing rather than identity. Furthermore, DA is represented as a head feature. This ensures that the designated argument is also present at the projections of *versuch-*, i. e. in the representation of *zu reparieren versucht* in (355). This is important for accounting for interactions of the passive and partial verb phrase fronting. See the discussion of the examples in Section 3.3.2.

The result of the combination of the participle in (353) with the *zu*-infinitive in (354) is given as (355).

(354) *zu reparieren* ('to repair'):

$$\left[\begin{array}{l} \text{HEAD|SUBJ} \langle \text{NP}[\textit{str}]_{\boxed{1}} \rangle \\ \text{SUBCAT} \langle \text{NP}[\textit{str}]_{\boxed{2}} \rangle \end{array} \right]$$

(355) *zu reparieren versucht* ('tried to repair'):

$$\left[\begin{array}{l} \text{HEAD|DA} \langle \text{NP}[\textit{str}]_{\boxed{1}} \rangle \\ \text{SUBCAT} \langle \text{NP}[\textit{str}]_{\boxed{2}} \rangle \\ \text{XCOMP} \langle \rangle \end{array} \right]$$

The object of *zu reparieren* is contained in the SUBCAT list of *zu reparieren versucht* and the subject of *versucht* which is coindexed with the subject of *zu reparieren* is blocked. Since the passive auxiliary does not deblock arguments, the SUBCAT list of *zu reparieren versucht werden* contains the object of *zu reparieren* as the one and only element.

Figure 12 on the next page shows this in detail. Because of the control relation, the subject of *versucht* is coindexed with the subject of *zu reparieren* ($\boxed{2}$) in (352) and $\boxed{5}$ in Figure 12). Since *versucht* is the result of applying the designated argument reduction lexical rule, its subject is blocked. It is represented in the DA list of *versucht*. The SUBCAT list of the participle *versucht* is identical to a list that contains the object of *zu reparieren* because of the argument raising ($\boxed{3}$) in the lexical entry (353). Since no element from the SUBCAT list gets saturated in verbal complexes, the SUBCAT list of *zu reparieren versucht* is identical to the SUBCAT list of *versucht* ($\boxed{2}$ in Figure 12). The passive auxiliary *werden* does not unblock arguments. It just raises the elements on the SUBCAT list of the embedded verbal complex ($\boxed{2}$ in Figure 12). Since *wurde* is finite, the subject of *wurde* is not represented in SUBJ, but in SUBCAT. The NP that refers to the object of *reparieren* is the first element of the SUBCAT list of *zu reparieren versucht wurde* and is therefore realized as nominative.

Interestingly this also works for the examples with *erlauben* ('to permit'):

(356) *erlaub-* ('permit', coherent version):

$$\left[\begin{array}{l} \text{HEAD|DA} \langle \boxed{1} \rangle \\ \text{SUBCAT} \langle \boxed{1} \text{NP}[\textit{str}], \text{NP}[\textit{ldat}]_{\boxed{2}} \rangle \oplus \boxed{3} \\ \text{XCOMP} \langle \text{V}[\textit{LEX+}, \textit{inf}, \textit{SUBJ} \langle \text{NP}[\textit{str}]_{\boxed{2}} \rangle, \text{SUBCAT} \boxed{3}] \rangle \end{array} \right]$$

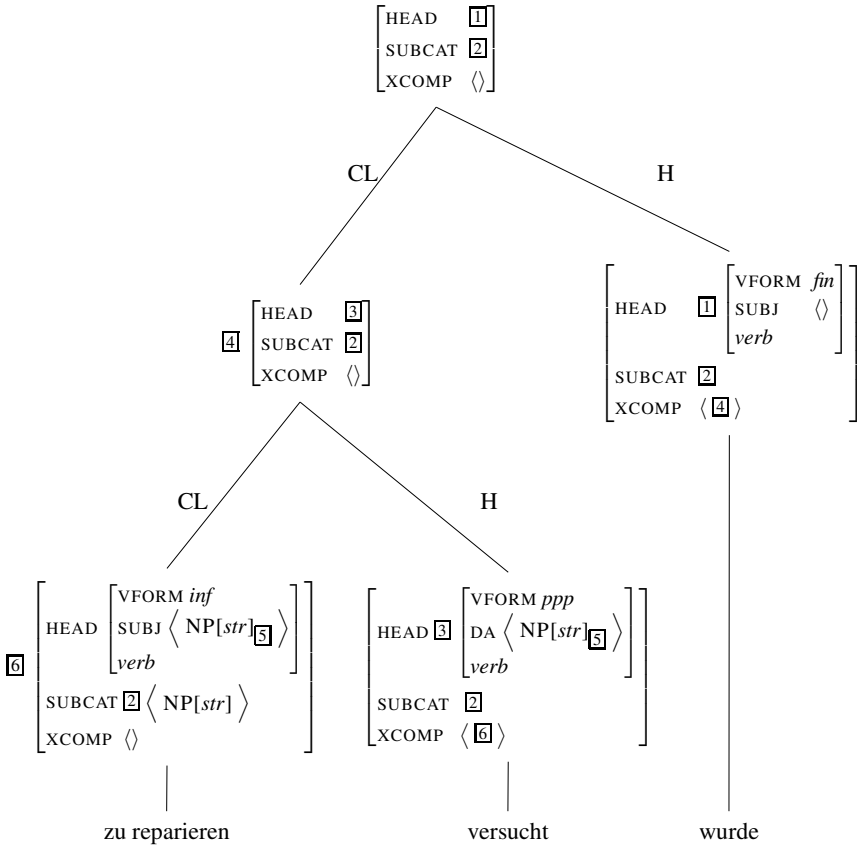


FIGURE 12 Analysis of the Verbal Complex *zu reparieren versucht wurde* in: *daß der Wagen oft zu reparieren versucht wurde*.

The Argument Blocking Lexical Rule licenses the lexical entry in (357):

(357) *erlaubt* ('permit', coherent version):

$$\left[\begin{array}{l} \text{HEAD|DA} \langle \text{NP}[\textit{str}] \rangle \\ \text{SUBCAT} \langle \text{NP}[\textit{ldat}]_{\boxed{2}} \rangle \oplus \boxed{3} \\ \text{XCOMP} \langle \text{V}[\textit{LEX+}, \textit{inf}, \textit{SUBJ} \langle \text{NP}[\textit{str}]_{\boxed{2}} \rangle, \text{SUBCAT} \boxed{3}] \rangle \end{array} \right]$$

If one combines (357) with an entry for *auszukosten* one gets (358).

(358) *auszukosten erlaubt* ('permitted to enjoy', coherent version):

$$\left[\begin{array}{l} \text{HEAD|DA} \langle \text{NP}[\textit{str}] \rangle \\ \text{SUBCAT} \langle \text{NP}[\textit{ldat}], \text{NP}[\textit{str}] \rangle \\ \text{XCOMP} \langle \rangle \end{array} \right]$$

When this verbal complex is combined with *wurde*, the designated argument remains blocked and one gets a verbal complex that has the same SUBCAT list as *auszukosten erlaubt*. Since the object of *auszukosten* is the first element with structural case in the SUBCAT list of *auszukosten erlaubt wurde*, it receives nominative.

Figure 13 on the following page shows this in detail. The control relation is established between the dative object of *erlaubt* and the subject of *auszukosten* by coindexing ($\boxed{5}$ in Figure 13). The complements of *auszukosten* ($\boxed{7}$) are raised by *erlaubt*. The SUBCAT list of *auszukosten erlaubt* therefore contains a dative element and the object of *auszukosten*. Since no element from the SUBCAT list is saturated in verbal complexes, the SUBCAT list of *auszukosten erlaubt* is identical to the SUBCAT list of *erlaubt* ($\boxed{2}$). The subject of *erlaubt* is blocked and the passive auxiliary does not deblock arguments. Therefore the SUBCAT list of *auszukosten erlaubt wurde* is identical to that of *auszukosten erlaubt*. The only NP with structural case on this list is the object of *auszukosten*. Therefore this NP is realized as nominative.

3.2.6 *lassen* Passive

The passive version of the verb *lassen* is completely analogous to what has been shown in Section 3.2.4, for the agentive passive, the stative passive, and the modal passive, respectively. The only difference is that *lassen* has an additional argument ($\boxed{1}$) which is also the designated argument:

(359) *lass-* (passive version):

$$\left[\begin{array}{l} \text{HEAD|DA} \langle \boxed{1} \text{NP}[\textit{str}] \rangle \\ \text{SUBCAT} \langle \boxed{1} \rangle \oplus \boxed{2} \\ \text{XCOMP} \langle \text{V}[\textit{bse}, \textit{LEX+}, \textit{DA} \langle \text{NP}_{\textit{ref}} \rangle, \text{SUBCAT} \boxed{2}, \text{XCOMP} \langle \rangle] \rangle \end{array} \right]$$

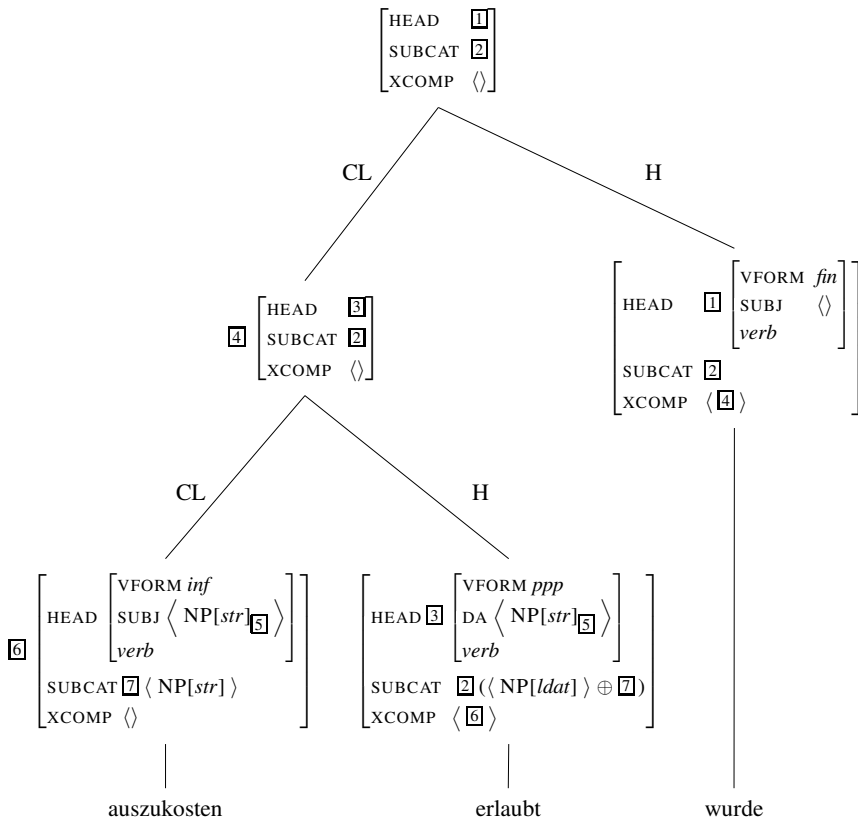


FIGURE 13 Analysis of the Verbal Complex *auszukosten erlaubt wurde in: daß der Erfolg uns nicht auszukosten erlaubt wurde.*

3.2.7 Adjectival Forms

As was discussed in Section 3.1.1, participles have an adjectival form that is used in prenominal position.

- (360) a. der reparierte Wagen
the repaired car
b. der angekommene Zug
the arrived train

The first example shows the adjectival form of an unergative verb and the second the adjectival form of an unaccusative one. If an unergative verb is used as such a prenominal modifier, the direct object requirement of the verb and the noun to be modified are coindexed. In the case of an unaccusative verb, the logical subject of the verb is coreferent with the modified noun. In both the unergative and the unaccusative case, the subject or object that is coreferent with the modified noun is not realized as an argument of the participle.

The prenominal adjectival participles are inflected and if inflection is assumed to be a lexical process, the input to this process has to be lexical too (Dowty, 1978, p. 412; Bresnan, 1982c, p. 21). Since in Müller, 1999a, Chapter 7, I assumed inflection to be analyzed with lexical rules, I suggested deriving the adjectival forms with lexical rules also. The rules that I proposed in Müller, 1999a, Chapter 15.5 license adjectives from past participles. In Müller, 1999a, I suggested deriving the inflected pronominal adjectives directly from the participle. This is not appropriate since adjectival participles can appear as secondary predicates in sentences like (361):

- (361) a. weil er die Äpfel gewaschen ißt.
because he the apples washed eats
'because he eats the apples washed'
b. So lange gilt die 39-Jährige als nicht suspendiert.⁸⁰
so long counts the 39 year old as not suspended
'The 39 year old woman is regarded as not suspended for this period.'

Instead of licensing inflected adjectival forms, I suggest lexical rules that license lexical items for adjectival stems. The uninflected predicative form is derived from this lexical item by another lexical rule that also applies to normal adjectives and so is the inflected attributive prenominal form.

The lexical rule for adjective formation is shown in (362) on the next page. This rule takes a participle as input that has a referential NP with structural case as the first element of the SUBCAT list. Since unaccusative verbs do not have a designated argument and hence no argument is blocked, the first element of their SUBCAT list is the subject (the element that is said to have object properties). For unergative verbs that govern an accusative, the first element on the SUBCAT list with structural

⁸⁰taz, 31.01.2000, p. 17.

(362) Adjective Formation Lexical Rule for Participles:

$$\begin{array}{c}
 \left[\begin{array}{c} \text{SYNSEM|LOC|CAT} \\ \text{word} \end{array} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{VFORM } \textit{ppp} \\ \textit{verb} \end{array} \right] \\ \text{SUBCAT} \langle \boxed{1} \text{ NP}[\textit{str}]_{\textit{ref}} \rangle \oplus \boxed{2} \end{array} \right] \right] \mapsto \\
 \left[\begin{array}{c} \text{SYNSEM|LOC|CAT} \\ \text{stem} \end{array} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{SUBJ} \langle \boxed{1} \rangle \\ \textit{adj} \end{array} \right] \\ \text{SUBCAT} \boxed{2} \end{array} \right] \right]
 \end{array}$$

case is the direct object since the subject is blocked. This element is turned into the subject of the adjective. The subjects of bare infinitives, *zu*-infinitives, adjectives, and predicative prepositions therefore are represented uniformly as elements of SUBJ.

Inflectional lexical rules license the lexical items for adjectives that can be used prenominally. As was discussed in Chapter 1.7, adjuncts select the head they modify via the MODIFIED feature. The lexical rule in (363) maps stem forms that have the feature geometry that is used in copula constructions onto the adjectives that can be used prenominally:

(363) Lexical Rule for Prenominal Adjectives:

$$\begin{array}{c}
 \left[\begin{array}{c} \text{SYNSEM|LOC} \\ \text{stem} \end{array} \left[\begin{array}{c} \text{CAT} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{SUBJ} \langle \text{NP} \boxed{1} \rangle \\ \textit{adj} \end{array} \right] \\ \text{CONT} \boxed{2} \end{array} \right] \end{array} \right] \right] \mapsto \\
 \left[\begin{array}{c} \text{SYNSEM|LOC} \\ \text{word} \end{array} \left[\begin{array}{c} \text{CAT} \left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{PRD} - \\ \text{MOD } \bar{\text{N}}: \left[\begin{array}{c} \text{IND} \boxed{1} \\ \text{RESTR} \boxed{3} \end{array} \right] \\ \textit{adj} \end{array} \right] \\ \text{CONT} \left[\begin{array}{c} \text{IND} \boxed{1} \\ \text{RESTR} \{ \boxed{2} \} \cup \boxed{3} \end{array} \right] \end{array} \right] \end{array} \right]
 \end{array}$$

The subject of the adjective is coindexed with the noun that will be modified by the adjective ($\boxed{1}$). The semantic contribution of the adjective ($\boxed{2}$) is set-unioned with the semantic contribution of the modified noun ($\boxed{3}$). The semantic contribution of head-adjunct structures is projected from the adjunct daughter. In our case, the adjunct is the adjective or adjectival phrase and the semantic contribution of this word or phrase consists of an index which is restricted by the contribution of the

adjective ([2]) and the set of restrictions contributed by the modified noun ([3]).

The rule in (363) contains neither the specification of the phonology value of the output sign nor the specification of agreement information. For details of inflection see Chapter 6.2.5.

In what follows, I want to demonstrate how this works in detail. The lexical item for the participle of *repariert* ('repaired') is given in (364). This item is the result of the application of the participle lexical rule in (343).

(364) *repariert* ('repaired', participle):

CAT	HEAD	DA $\langle \text{NP}[\text{str}]_{[1]} \rangle$ [verb]
	SUBCAT	$\langle \text{NP}[\text{str}]_{[2]} \rangle$
CONT	AGENT	[1]
	THEME	[2]
		<i>reparieren</i>

The adjective formation lexical rule in (362) licenses the following stem:

(365) *repariert-* ('repaired', adjectival stem):

CAT	HEAD	SUBJ $\langle \text{NP}[\text{str}]_{[2]} \rangle$ [adj]
	SUBCAT	$\langle \rangle$
CONT	AGENT	[]
	THEME	[2]
		<i>reparieren</i>

The prenominal adjectival form (366) is licensed by the lexical rule in (363).

(366) *reparierte* ('repaired', attributive adjective):

CAT	HEAD	MOD \bar{N} : $\left[\begin{array}{l} \text{IND} \quad [1] \\ \text{RESTR} \quad [2] \end{array} \right]$ [adj]
	SUBCAT	$\langle \rangle$
CONT	IND	[1]
	RESTR	$\left\{ \left[\begin{array}{l} \text{AGENT} \quad [] \\ \text{THEME} \quad [1] \end{array} \right] \right\} \cup [2]$ [<i>reparieren</i>]

Since the subject of the adjectival participle is the object of the verb and since the subject of the adjectival participle is coindexed with the modified noun because of the rule (363), it is explained why the noun *Wagen* fills the theme role of *reparierte* in (360a).

In the case of the adjectival participle *angekommene*, the participle lexical rule in (343) licenses the following lexical item:

(367) *angekommen* ('arrived', participle):

CAT	HEAD	$\left[\begin{array}{c} \text{DA } \langle \rangle \\ \text{verb} \end{array} \right]$
	SUBCAT	$\langle \text{NP}_{[\text{str}]} \boxed{1} \rangle$
CONT	THEME $\boxed{1}$	<i>ankommen</i>

Since *ankommen* does not have a designated argument, nothing is blocked and therefore the subject of the verb is represented in the SUBCAT list of the participle.

Since the first element of the SUBCAT list of *angekommen* is an NP with structural case, the adjective formation lexical rule in (362) can apply and licenses the following stem:

(368) *angekommen-* ('arrived', adjectival stem):

CAT	HEAD	$\left[\begin{array}{c} \text{SUBJ } \langle \text{NP}_{[\text{str}]} \boxed{1} \rangle \\ \text{adj} \end{array} \right]$
	SUBCAT	$\langle \rangle$
CONT	THEME $\boxed{1}$	<i>ankommen</i>

This stem is the input to the lexical rule in (363) which licenses the prenominal adjectival form in (369):

(369) *angekommene* ('arrived', attributive adjective):

CAT	HEAD	$\left[\begin{array}{c} \text{MOD } \bar{N}: \left[\begin{array}{c} \text{IND } \boxed{1} \\ \text{RESTR } \boxed{2} \end{array} \right] \\ \text{adj} \end{array} \right]$
	SUBCAT	$\langle \rangle$
CONT	IND $\boxed{1}$	$\left\{ \left[\begin{array}{c} \text{THEME } \boxed{1} \\ \text{ankommen} \end{array} \right] \right\} \cup \boxed{2}$
	RESTR	

The same explanation carries over to bivalent unaccusative verbs:

- (370) die ihnen zugestoßenen Ereignisse⁸¹
 the them happened events
 'the events that happened to them'

⁸¹Die Zeit, 11.04.1986, p. 57.

The subject of *zustoßen* is not blocked. It is the first element of the SUBCAT list. As such it is represented under SUBJ in the lexical item for the adjective which is licensed by the lexical rule in (362). The dative argument of *zugestoßene* is realized inside the prenominal AP. This AP is an example of an instantiation of the lexical rule in (362) where $\boxed{}$ is a list that contains one element.

Having shown how adjectival participles of unergative and unaccusative verbs are licensed, I now explain how sentences like (371) are excluded: Since the input to the lexical rule in (362) requires the SUBCAT list of the participle to contain an NP with structural case, the rule cannot apply to subjectless verbs or unergative verbs that do not govern an accusative object.

- (371) a. * der (vor der Prüfung) gegraute Student
 the before the exam dreaded student
 b. * der eben erst getanzte Mann
 the just danced man
 Intended: ‘the man who was only just dancing’
 c. * der (ihm) geholfene Mann
 the him helped man

Since the lexical item of the participle of the unergative intransitive verb *tanzen* has an empty SUBCAT list, the rule in (362) does not apply. Therefore the unacceptability of (371b), which contrasts with the grammatical example (360b) with the unaccusative intransitive verb *ankommen*, is explained. Similarly the adjectival participle * *gehoffene* is excluded since the participle *gehoffen* has a SUBCAT list that starts with an NP that has dative, i. e. lexical case.

In Chapter 2.1.3.2, I discussed Höhle’s test (1983, Chapter 6) for determining the case of unexpressed subjects. In Höhle’s examples, the test was applied to infinitives, but of course completely analogous examples with adjectival participle heads can be constructed.

- (372) a. die [eines nach dem anderen]_i eingeschlafenen
 the one-NOM-NEU after the-DAT-NEU other nodding.off
 Kinder_i
 children-NOM ∨ ACC
 ‘the children who nodded off one after the other’
 b. die [einer nach dem anderen]_i durchgestarteten
 the one-NOM-MAS after the-DAT-MAS other revving
 Halbstarken_i
 hooligans-NOM ∨ ACC
 ‘the hooligans who revved up one after the other’

In (372a), the *ein- nach d- ander-* phrase is ambiguous in case. The case form is *nom ∨ acc*. But (372b) suggests that the subject of the adjectival participle is nominative. Note that the NPs in (372) can function as subject and as object in

a higher clause since the case of the modified noun is independent of the case of the subject of the adjectival participle. This is accounted for by the lexical rule in (363). The rule establishes a coindexing between the modified noun and the subject of the participle. The SYNSEM values of the modified noun and the subject of the participle are not identical, however. The relation between these two elements is a control relation rather than a raising relation. It is therefore not legitimate to call the modified NP the subject (or the external argument) of the participle as, for instance, Levin and Rappaport (1986, p. 646) and Jacobs (1992, p. 98) do. Jacobs, developing a theory that is influenced by ideas from Categorical Grammar, assumes that the modified noun is a complement of adjectival participles. He does not restrict the grade of saturation of arguments in valence specifications and therefore an (unsaturated) \bar{N} that is modified may simultaneously be a complement of the participle. To account for the fact that the case of the modified noun, which is also reflected by the case inflection of the adjectival participle, is independent of the nominative, which the subject normally gets, he assumes that the case requirements for the subject are overwritten by the value that corresponds to the inflectional case of the adjective. This means that subjects of participles may bear all four cases. In particular, dative subjects are predicted, an option that is excluded by the theory developed here: In German there are no dative subjects. (See the discussion of (266) on page 119.) NP subjects are specified to have structural case and dative is lexical.

3.3 Alternatives

In the following section, I discuss alternative proposals. The first two subsections deal with alternative object-to-subject-raising analyses and Sections 3.3.3 and 3.3.4 with control analyses.

3.3.1 Kathol

Kathol (1994, Chapter 7.3.3) suggests the representation in (373) for participles and the lexical entries in (374) for the auxiliaries.⁸²

(373)	EXT	SUBJ	SUBCAT
a. angekommen (unaccusative):	$\langle \boxed{1} \text{ NP}[\text{nom}] \rangle$	$\langle \boxed{1} \rangle$	$\langle \rangle$
b. geschlafen (unergative):	$\langle \text{NP}[\text{nom}] \rangle$	$\langle \rangle$	$\langle \rangle$
c. geliebt (unergative):	$\langle \text{NP}[\text{nom}] \rangle$	$\langle \text{NP}[\text{acc}] \rangle$	$\langle \rangle$

(374)	a. <i>haben</i> (Perfect Auxiliary)
	$\left[\begin{array}{c} \text{SUBJ } \boxed{3} \\ \text{SUBCAT } \boxed{2} \oplus \boxed{1} \oplus \left\langle \text{V}[\text{SUBJ } \boxed{2}, \text{EXT } \boxed{3}, \text{SUBCAT } \boxed{1}] \right\rangle \end{array} \right] \wedge \boxed{2} \neq \boxed{3}$

⁸²The entries were adapted to the feature geometry used in this book.

b. *sein* (Perfect Auxiliary)

$$\left[\begin{array}{l} \text{SUBJ} \quad [2] \\ \text{SUBCAT} \quad [1] \oplus \left\langle \text{V}[\text{SUBJ} [2], \text{EXT} [2], \text{SUBCAT} [1]] \right\rangle \end{array} \right]$$

c. *werden* (Passive Auxiliary)

$$\left[\begin{array}{l} \text{SUBJ} \quad \left\langle \text{NP}[\text{nom}] [2] \right\rangle \\ \text{SUBCAT} \quad [1] \oplus \left\langle \text{V}[\text{SUBJ} \left\langle \text{NP}[\text{acc}] [2] \right\rangle, \text{SUBCAT} [1]] \right\rangle \end{array} \right]$$

Kathol follows Pollard (1996) in not treating SUBJ as a valence feature (Kathol, 1994, p. 243). So, both the elements in EXT and those in SUBJ are blocked. The perfect auxiliary *haben* in (374a) deblocks the EXT and the SUBJ element. In the case of embedded unaccusative verbs, the auxiliary *sein* in (374b) is used in perfect constructions and the external argument is deblocked.

The advantage of Kathol's approach is that the logical subject of all participles is represented uniformly as element of EXT, but note that *geliebt* does not have any elements in the SUBCAT list. This falsely predicts that the participle cannot be combined with any complements. Since in Kathol's approach the auxiliary *hat* deblocks both the external argument and the SUBJ element, *seine Frau* in (375) depends on the auxiliary and it is unclear what licenses this NP together with the participle in the *Vorfeld*.

- (375) Seine Frau geliebt hat er nie.
 his wife loved has he never
 'He never loved his wife.'

Apart from this problem, this approach cannot account for modal infinitives and incoherent infinitival constructions with one lexical entry: Since the accusative object is represented as an element of the SUBJ list, no VP can be formed. The only solution to this problem is to stipulate a separate lexical entry for *zu*-infinitives that can form a VP. As was discussed at the beginning of Section 3.2, the avoidance of the stipulation of two separate entries for non-finite verbs is the goal of the object-to-subject-raising analyses.

Finally, note that the restrictions that participles embedded under *haben* have to have different SUBJ and EXT values is too restrictive since this excludes the *haben* perfect with subjectless verbs like *grauen*.

3.3.2 Kathol and Pollard

Pollard (1994) singles out the argument that has the properties of an accusative object.⁸³ Pollard assumes that the subject of non-finite verbs is not represented on the SUBCAT list, but as the value of a special feature SUBJ. The motivation for this was provided in Section 1.6. For unergative verbs that take an accusative

⁸³Pollard's proposal is an elaboration of Kathol's ideas (1991). Kathol introduced a feature named ERG to single out the complement that has accusative properties. Pollard unifies the analyses for the personal and impersonal passive and also discusses the remote passive.

object, the designated argument is the direct object, for unaccusative verbs it is the subject. Intransitive unergative verbs and bivalent verbs that take a dative have no designated element. The designated element is represented in a list that is the value of a newly introduced feature called ERG. If no element is designated, the value of ERG is the empty list. (376) shows the SUBJ, ERG, and SUBCAT values for the verbs *ankommen* ('to arrive'), *tanzen* ('to dance'), *auffallen* ('to notice'), *lieben* ('to love'), and *helfen* ('to help'). For unaccusative verbs like *ankommen* and *auf-*

(376)	SUBJ	ERG	SUBCAT
a. <i>ankommen</i> (unaccusative):	$\langle \boxed{1} \text{ NP}[\textit{str}] \rangle$	$\langle \boxed{1} \rangle$	$\langle \rangle$
b. <i>tanzen</i> (unergative):	$\langle \text{NP}[\textit{str}] \rangle$	$\langle \rangle$	$\langle \rangle$
c. <i>auffallen</i> (unaccusative):	$\langle \boxed{1} \text{ NP}[\textit{str}] \rangle$	$\langle \boxed{1} \rangle$	$\langle \text{NP}[\textit{ldat}] \rangle$
d. <i>lieben</i> (unergative):	$\langle \text{NP}[\textit{str}] \rangle$	$\langle \boxed{1} \rangle$	$\langle \boxed{1} \text{ NP}[\textit{str}] \rangle$
e. <i>helfen</i> (unergative):	$\langle \text{NP}[\textit{str}] \rangle$	$\langle \rangle$	$\langle \text{NP}[\textit{ldat}] \rangle$

fallen, the element in ERG is identical with the element in SUBJ. For unergative verbs, the element in ERG is identical to the direct object if there is one (*lieben*), or the ERG value is the empty list if there is no accusative object, as for instance in the case of *tanzen* and *helfen*.

At the heart of the passivization analysis of Pollard is the object-to-subject raising lexical entry for the passive auxiliary in (377).⁸⁴ The passive auxiliary embeds a verb with the VFORM *ppp*, i. e. a participle. The auxiliary subtracts the value of ERG ($\boxed{1}$) from the SUBCAT list of the embedded verb.

(377) *werden* (passive auxiliary non-finite form):

HEAD	$\begin{bmatrix} \text{SUBJ } \boxed{1} \\ \text{ERG } \boxed{1} \\ \textit{verb} \end{bmatrix}$
SUBCAT	$\boxed{2}$
XCOMP	$\left\langle \begin{array}{l} \text{V}[\textit{ppp}, \text{LEX}+, \text{SUBJ } \langle \text{NP}[\textit{str}]_{\textit{ref}} \rangle, \text{ERG } \boxed{1}] \\ \text{SUBCAT } \boxed{1} \oplus \boxed{2}, \text{XCOMP } \langle \rangle \end{array} \right\rangle$

The remaining elements ($\boxed{2}$) are raised to the SUBCAT list of the auxiliary.

The lexical entry in (377) accounts for both the personal and impersonal passive and excludes the passive with unaccusative verbs: The passive with unaccusative verbs is blocked since the ERG element of unaccusative verbs is identical to their SUBJ element and not to an object on the SUBCAT list. Therefore ERG is not a prefix of the SUBCAT list of the participle and unaccusative verbs are excluded as complements of the passive auxiliary.

⁸⁴The entry was adapted to the feature geometry used in this book. Pollard does not use a XCOMP feature. He does not represent the ERG feature as a head feature.

In the case of *tanzen* ('to dance'), the ERG value of the verb embedded under the auxiliary is the empty list. The result of subtracting the empty list from another list is the list itself. In the case of *tanzen*, $\boxed{2}$ is the empty list. Since the ERG value of *tanzen* is the empty list, the SUBJ value of *getanzt werden* is also the empty list.

The situation is similar with *helfen* ('to help'). Here $\boxed{2}$ gets instantiated as $\langle \text{NP}[\textit{ldat}] \rangle$. The SUBJ value of *geholfen werden* is identical to the ERG value of *geholfen*, i. e. the empty list. Figure 14 shows this in detail. The ERG value of

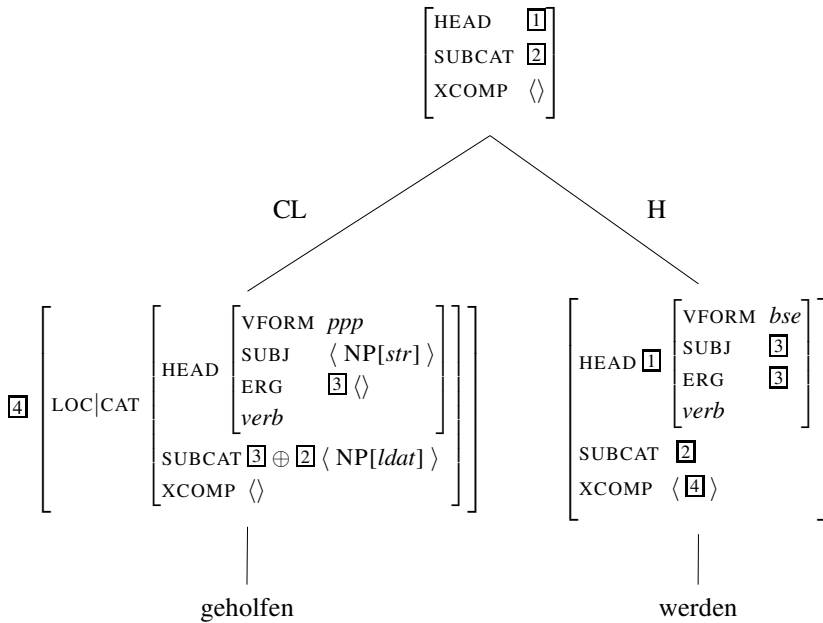


FIGURE 14 Analysis of the Verbal Complex *geholfen werden* in: *daß dem Mann geholfen werden wird*.

helfen is the empty list. It is subtracted from the valence list of *helfen*. The result is $\boxed{2}$, a list that contains the dative object. This list is identified with the SUBCAT list of *werden* ('was') in the lexical entry of the passive auxiliary. The ERG value of *helfen* is identical to the SUBJ value of *werden*. Since this SUBJ value belongs to the head features of *werden* ($\boxed{1}$), it is projected by the Head Feature Principle. Therefore the verbal complex *geholfen werden* has the empty list as its SUBJ value. Since in verbal complex structures no element from the SUBCAT list gets saturated, all elements in the SUBCAT list of the head are also present in the SUBCAT list of the mother, i. e., the SUBCAT values of head and mother are identical ($\boxed{2}$). Therefore the verbal complex *geholfen werden* has a list that contains the dative object as its SUBCAT value.

Figure 15 on the following page shows an example analysis of the personal

passive with the transitive verb *lieben* ('to love'). The ERG value of verbs like

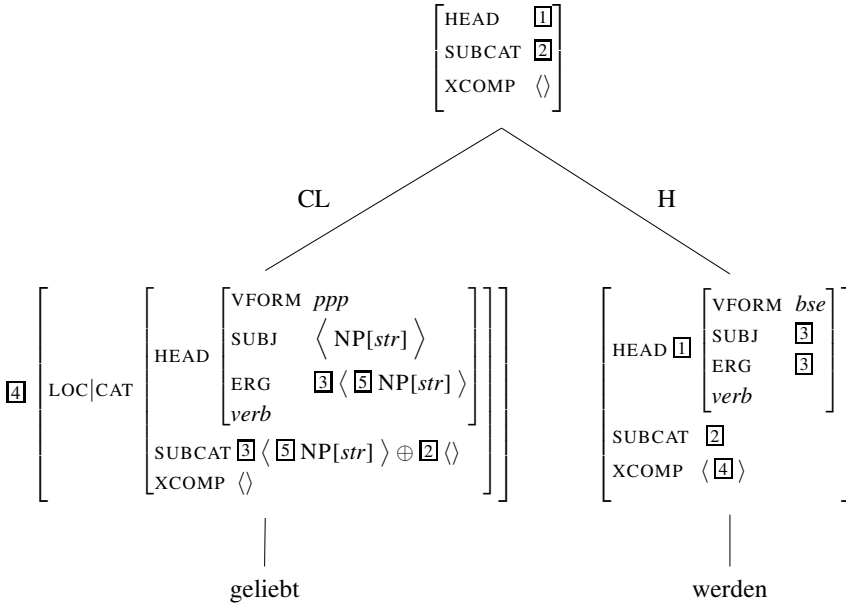


FIGURE 15 Analysis of the Verbal Complex *geliebt werden* in: *daß der Mann geliebt werden wird*.

lieben is a list with one element ([3]). This list is subtracted from the SUBCAT list of the participle *geliebt* resulting in the empty list ([2]). This remaining list is identical to the SUBCAT list of *werden*, i. e., in the case of the transitive verb *lieben*, the SUBCAT value of *werden* is the empty list. The ERG value of the participle *geliebt* is identical to the SUBJ value of the auxiliary *werden*. The Head Feature Principle takes care of the projection of the head features of *werden* and, since the SUBJ feature belongs to the head features, the verbal complex *geliebt werden* has a SUBJ value that is a list that contains an element that is identical to the accusative object of *geliebt*. When finite verbal complexes like *geliebt wird* are built, the underlying accusative object is raised to subject of this verbal complex in the same way and, since the verb is finite, the underlying accusative object gets nominative case by Pollard's case principle.

Having explained Pollard's analysis, I now turn to its problematic aspects: As I showed in Müller, 1999a, p. 374, passive examples like those in (378) where the subject is fronted together with the participle are problematic for Pollard's approach.

- (378) a. Zwei Männer erschossen wurden während des Wochenendes.⁸⁵
 two men-NOM shot were-PL during the weekend
 'Two men were shot during the weekend.'
- b. Ein verkanntes Meisterwerk dem Musiktheater
 a misjudged masterpiece-NOM the music.theater-DAT
 zurückgewonnen ist da nicht.⁸⁶
 back.won is there not
 'The music theater has not exactly recovered a neglected masterpiece there.'

The object of *erschießen* in (378a) can be combined with the participle to form the phrase *zwei Männer erschossen*, but then it is not contained in the SUBCAT list any longer. The passive auxiliary *wurden* requires that the ERG value of the embedded participle is a prefix of its SUBCAT list which is not the case for the projection *zwei Männer erschossen*. Note that this problem is avoided in Haider's approach: The argument blocking takes place when the participle is formed, it is not the passive auxiliary that blocks elements. Since the accusative object is contained in the SUBCAT list of the second participle in the formalization of Haider's approach, sentences like (378) can be explained.

3.3.3 Kathol

Kathol (1994, p. 250) suggests a lexical entry for the passive auxiliary *werden* that is similar to the following:

- (379) *werden* (passive auxiliary):

$$\left[\begin{array}{l} \text{SUBJ} \quad [3] \\ \text{SUBCAT} \quad [1] \oplus \left\langle \text{V} \left[\begin{array}{l} \text{VFORM} \quad \textit{part ii} \\ \text{SUBJ} \quad \langle \text{NP} \rangle \\ \text{SUBCAT} \quad [2] \oplus [1] \end{array} \right] \right\rangle \end{array} \right]$$

constraint: ($[2] = \langle \text{NP}[\textit{acc}]_{[4]} \rangle \wedge [3] = \langle \text{NP}[\textit{nom}]_{[4]} \rangle$)
 otherwise: ($[2] = [3] = \langle \rangle$)

If the embedded participle has an accusative object ($[2] = \langle \text{NP}[\textit{acc}]_{[4]} \rangle$), this object is realized as subject of the auxiliary ($[3] = \langle \text{NP}[\textit{nom}]_{[4]} \rangle$). The result is a personal passive. If the embedded participle does not have an accusative object all complements of the embedded participle ($[1]$) are raised, the resulting verbal complex does not have an element in SUBJ and hence, we get a subjectless construction.

⁸⁵Webelhuth, 1985, p. 210.

⁸⁶ECI Multilingual Corpus CD I, Frankfurter Rundschau Korpus, File ger03a01.eci (FR week, ending 5th of July 1992). Thanks to Wojciech Skut for searching this example in the NEGRA corpus and to Thorsten Brants for finding the exact reference.

Like Pollard's approach, this approach fails on sentences like (378a): The projection *zwei Männer erschossen* is a complete VP that does not contain anything in SUBCAT. The lexical entry in (379) is compatible with a participle that does not have anything in SUBCAT, but the result of the combination is a subjectless verbal complex. Subjectless verbal complexes are always third person singular, i. e., we would expect *wurde* instead of *wurden*.

3.3.4 Ryu

Ryu (1997) suggests two new features for distinguishing the external (EXTARG) and the internal argument (INTARG). These features are represented as parts of the argument structure of a verb. The argument structure is described by a feature description that consists of a list of referential indices and the two features pointing to the external and the internal argument if there are any. (380) shows an example for the transitive verb *schlagen* ('to beat').

(380) Argument Structure of *schlagen* ('to beat') according to Ryu, 1997, p. 376:

$$\left[\begin{array}{l} \text{EXTARG} \langle [1] \rangle \\ \text{INTARG} \langle [2] \rangle \\ \text{ARGS} \langle [1] \rangle \oplus \langle [1] \rangle \end{array} \right]$$

He suggests the following lexical entries for the passive auxiliary *werden* (p. 377, p. 379):⁸⁷

(381) *werden* (auxiliary for the personal passive):

$$\left[\begin{array}{l} \text{HEAD|SUBJ} \langle \text{NP}[\text{nom}] [2] \rangle \\ \text{SUBCAT} \langle \text{PP}[\text{von}] [1] \rangle \oplus [4] \oplus \left\langle \begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{VFORM } \textit{psp} \\ \textit{verb} \end{array} \right] \\ \text{SUBCAT} \langle \text{NP}[\text{acc}] [2] \rangle \oplus [4] \\ \text{ARGSTR} \left[\begin{array}{l} \text{EXTARG} \langle [1] \rangle \\ \text{INTARG} \langle [2] \rangle \\ \text{ARGS} \langle [1] \rangle \oplus \langle [2] \rangle \oplus [3] \end{array} \right] \end{array} \right\rangle \end{array} \right]$$

(382) *werden* (auxiliary for the impersonal passive):

$$\left[\begin{array}{l} \text{HEAD|SUBJ} \langle \rangle \\ \text{SUBCAT} \langle \text{PP}[\text{von}] [1] \rangle \oplus [4] \oplus \left\langle \begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{VFORM } \textit{psp} \\ \textit{verb} \end{array} \right] \\ \text{SUBCAT} [4] \\ \text{ARGSTR} \left[\begin{array}{l} \text{EXTARG} \langle [1] \rangle \\ \text{INTARG} \langle \rangle \\ \text{ARGS} \langle [1] \rangle \oplus [3] \end{array} \right] \end{array} \right\rangle \end{array} \right]$$

⁸⁷I adapted his lexical entries to the feature geometry used in this book.

Examples like (378a) and (383) are problematic for Ryu's account since he assumes the argument structure to be represented at lexical items only.⁸⁸

- (383) Einem Jungen geschenkt wurde das Buch dann doch nicht.
 a boy-DAT given was the book-NOM then after.all not
 'After all, the book was not given to a boy.'

In (378a) and (383), the *Vorfeld* is occupied by a complex constituent. This complex constituent is a filler of a nonlocal dependency. *wurde* is combined with a trace and the selectional requirements of the passive auxiliary are identified with the properties of that trace. Since the argument structure is not projected, the constituent *einem Jungen geschenkt* is either incompatible with the trace or the grammar overgenerates: If the value of ARGSTR of phrases is *none* or something similar, the analysis fails since the restrictions on the trace are incompatible with the filler. If the value of ARGSTR of phrases is not constrained, the grammar wrongly admits sentences like (384) in which the participle of an unaccusative verb is fronted together with an argument.

- (384) * Dem Mann aufgefallen wurde nicht.
 the man noticed was not
 Intended: 'The man did not notice somebody.'

(384) can be analyzed as an impersonal passive since the requirement that the embedded participle has to have an element in EXTARG cannot be enforced since this information is not present at the projection *dem Mann aufgefallen*.

3.4 Summary

In this chapter, I showed how the passive can be analyzed as object-to-subject-raising. I showed how Heinz and Matiassek's formalization of Haider's ideas has to be extended and modified to capture modal infinitive constructions. The passive/perfect participle is licensed by a lexical rule that blocks the designated argument. In passive constructions this argument remains blocked whereas it is deblocked by the perfect auxiliary *haben*. The other non-finite verb forms differ from the passive/perfect participle in that the blocked element is not the designated argument, but the first element on the SUBCAT list with structural case (the logical subject or the external argument in GB terminology). All blocked elements are represented under SUBJ. This makes a uniform representation of the deblocking auxiliaries possible (the perfect auxiliary *haben* and the *haben* which appears in modal infinitive constructions). In addition to analyses of perfect and passive constructions, I provided lexical rules that license adjectival participles.

The analyses developed in this chapter are an important basis for Chapters 5 and 6 where the passivization of resultative constructions and particle verbs and

⁸⁸For a discussion of problems that arise if one projects the argument structure see Chapter 4.2, page 201.

the adjective formation of resultative constructions and particle verbs are discussed.

Depictive Secondary Predicates

The next two chapters deal with secondary predication. I will show that depictive predicates have to be analyzed as adjuncts while resultative predicates are part of the predicate complex and form a complex predicate with their matrix verb. The subject of the depictive predicate is coindexed with its antecedent element whereas the subject of the resultative predicate is identical to the object or subject of the resultative construction, depending on the type of the matrix verb.

4.1 The Phenomena

In the examples in (385) we have adjectives that are secondary predicates.

- (385) a. Er ißt das Fleisch roh.
 he eats the meat raw
 b. Er ißt das Fleisch nackt.
 he eats the meat naked
 c. Er schneidet das Fleisch klein.
 he cuts the meat small
 d. Er ißt den Teller leer.
 he eats the plate empty

In (385a,b) the secondary predicate provides information about the state of the entity it refers to. This state holds at the time of the event described by the verb. In (385c,d) the result of an event is specified by the adjective. In this chapter, I will examine the properties of the predicates in (385a,b), so-called depictive predicates (Halliday, 1967, p. 63). I will return to the resultative constructions in Chapter 5.

In German, uninflected adjectives and prepositional phrases may appear as depictive predicates, as the examples in (386) and (387) show.

- (386) a. Er liest das Buch nackt.
 he reads the book naked
 b. Er ißt die Äpfel ungewaschen.
 he eats the apples unwashed

- (387) Ich habe ihn (gestern) im dunklen Anzug getroffen.
 I have him yesterday in.the dark suit met
 'I met him in a dark suit yesterday.'

Helbig and Buscha (1970, p. 556) give an example that is similar to (387). I added the adverb *gestern* ('yesterday') to their example and put the sentence into the perfect to exclude the possibility of the PP modifying *ihn* ('him') directly.

Schultze-Berndt and Himmelmann (To Appear, p. 52) discuss the following English example in which an underived common noun is used as a depictive:

- (388) Alex arrived at the station a complete wreck.

They note that using bare noun phrases as depictive predicates was possible in Old High German (389), but that the predicative marker *als* has to be used in Modern German (390):

- (389) kind warth hër faterlôs¹
 child became he fatherless
 'As a child he became fatherless.'

- (390) Als Kind wurde er vaterlos.
 as child became he fatherless

The examples in (385a) and (385b) show that depictive predicates can refer to direct objects and subjects. In the following section, I examine whether other grammatical functions are also possible as antecedents. In Sections 4.1.2 and 4.1.3, I deal with coordinations of depictive predicates and the case of the subject of the depictive predicate, in Section 4.1.4 with their linearization, and in Section 4.1.5 with the possibility to iterate depictives. Section 4.1.6 briefly discusses focus projections and stress patterns in connection to depictive predicates.

4.1.1 Antecedent Elements

As the examples in (385a) and (385b) show, depictive predicates may refer to subjects and to direct objects.² Sometimes certain readings are not available because of selectional restrictions of the depictive predicate. So, *nackt* can refer to the book in (386a) only in very artificial contexts. (386a) is not ambiguous because of the selectional restrictions of the adjective. (386b), on the other hand, has two readings. Reference to the subject and to the object is possible.

The possibility to refer to non-adjacent NPs makes depictives different from simple uninflected adjectives or adjectival participles that follow their noun like those in (391).

- (391) a. Röslein, Röslein, Röslein rot, Röslein auf der Heiden.
 little.rose, little.rose, little.rose red, little.rose on the heath
 'Little rose, little rose, little red rose, little rose on the heath'

¹Paul, 1919, p. 52.

²See also Paul, 1919, p. 49 for examples of predicates referring to nominative and accusative NPs.

- b. Und begonnen hat diese Reihe US-Präsident Clinton, indem er sich
and begun had this series US.president Clinton in.that he self
wegen seiner Lügen [betreffend Monica Lewinsky]
because.of his lies regarding Monica Lewinsky
entschuldigte.³
excused
'And US president Clinton started this fad by excusing himself for his
lies about the Monica Lewinsky matter.'
- c. Der dynamische Kapitalismus, [nicht *bereit*, sich ein gewinnträchtiges
Geschäft zu irgendeiner Zeit entgehen zu lassen], und die Leis-
tungsgesellschaft, die Muße verabscheut, Konsum aber für das große
Glück hält, haben den 24-Stunden-Tag so parzelliert, dass selbst
in ländlichen Gegenden Mittagsruhe und Mittagsschlaf weitgehend
perdu sind.⁴
'Dynamic capitalism, not ready to let a lucrative business opportu-
nity escape its grasp at any one time, and the meritocracy that ab-
hors leisure while considering consumerism to be ultimate bliss, have
parceled the 24-hour day to such a degree, that midday rest and siestas
are largely a thing of the past, even in rural areas.'

In (391) the adjective is inside the nominal projection. In (391c) the adjective is used postnominally since if the adjective were used inflected in prenominal position, the sentence would hardly be processable. For other examples of postnominal adjectives and an analysis see Dürscheid, 2002.

4.1.1.1 Non-Overt Antecedents

In what follows, I want to show that depictive secondary predicates can refer to non-overt antecedents. Passive examples and examples involving infinitives will be discussed. Before I start discussing the relevant data, I have to refute Wunderlich's claim (1995, p. 464–465) that the reference of depictives to subjects is restricted and that a reordering of (392a) of the kind in (392b) is necessary to allow subject reference.

- (392) a. weil sie den Fisch angezogen essen wollte.
because she the fish dressed eat wanted.to
'because she wanted to eat the fish dressed.'
- b. weil sie angezogen den Fisch essen wollte.
because she dressed the fish eat wanted.to

I do not share Wunderlich's opinion on possible antecedents of *angezogen* in (392a). However, an observation that is implicit in the examples given by Wunderlich is that there is a strong preference for serializations in which the depictive

³taz, 03.05.2000, p. 12.

⁴Spiegel, 48/1999, p. 307.

predicate follows its antecedent.⁵ This is shown more clearly by the examples given in (393):

- (393) a. weil er die Äpfel ungewaschen ißt.
 because he the apples unwashed eats
 ‘because he eats the apples unwashed.’
 (He is unwashed or the apples are unwashed.)
- b. weil er ungewaschen die Äpfel ißt.
 because he unwashed the apples eats
 ‘because he eats the apples unwashed.’
 (He is unwashed.)
- c. * weil ungewaschen er / der Mann die Äpfel ißt.
 because unwashed he the man the apples eats

(393a) has two readings, (393b) just one. Since the object follows the depictive in (393b), it is highly dispreferred as an antecedent. So Wunderlich may prefer (392b) over (392a) because *den Fisch* does not precede *angezogen* and therefore this NP has not to be considered as a possible antecedent. However, the example in (394) which is parallel to (392a) clearly shows that the reference to the subject is possible without reordering.

- (394) weil sie das Buch angezogen lesen wollte.
 because she the book dressed read wanted.to
 ‘because she wanted to read the book dressed.’

The difference between (392a) and (394) is that the selectional restrictions of *angezogen* do not allow reference to *Buch* while dressed fish may be imagined in bizarre contexts. However, the example in (394) shows that an analysis that is empirically adequate has to cover both reference to the subject and to the object.

Having established that subject reference is possible, I now turn to reference to non-overt antecedents. Examples with non-overt antecedents have already been discussed by Paul (1919, p. 51)⁶, but it is still sometimes claimed that such constructions are impossible. For example, Zifonun (1997, p. 1803) gives the following example and claims that the depictive predicate cannot refer to the logical subject of the passivized verb.⁷

- (395) Die Äpfel wurden ungewaschen in den Keller getragen.
 the apples were unwashed in the basement carried
 ‘The apples were carried to the basement unwashed.’

⁵Lötscher (1985, p. 208) makes this observation explicit with regard to objects. See also Neeleman, 1994, p. 157 for examples from Dutch. For more discussion and exceptions to this ordering rule see Section 4.1.4.1.

⁶See also Jacobs, 1994, p. 297 and Müller, 1999a, p. 320.

⁷Jaeggli (1986, p. 614)—following Chomsky (1986, p. 121)—makes a similar claim for English. As the translations of the examples in (396) show, this claim is as wrong for English as it is for German.

That the reading in which the depictive refers to the agent of the carrying is hardly available is due to another preference rule that makes readings where a depictive refers to an non-overt antecedent dispreferred. If the reading in which the depictive refers to the logical object of the main verb is semantically implausible, the reference to the logical subject of the main verb is fine:

- (396) a. Das Buch wurde nackt gelesen.
 the book was naked read
 ‘The book was read naked.’
 b. Das Buch ist nackt zu lesen.
 the book is naked to read
 ‘The book is to be read naked.’

Example (396a) is a passive construction and in (396b) we have a modal infinitive.

Paul (1919, p. 51) gives the example in (397).⁸

- (397) erschöpft, ermüdet wird der Rückzug angetreten.⁹
 exhausted tired gets the retreat begun
 ‘Exhausted, tired, the retreat is begun.’

Such reference to non-overt logical subjects is also possible with intransitive verbs:¹⁰

- (398) a. Auf dem Land fahren alle betrunken.
 on the country drive all drunk
 ‘Everyone drives drunk in the country.’
 b. Auf dem Land wird auch betrunken gefahren.
 on the country is also drunk driven
 ‘There is also driving drunk in the country.’

Depictive predicates can also refer to the non-expressed subject of an adjectival participle:

- (399) a. die [_{N'} [_{AP} nackt schlafende] Frau]
 the naked sleeping woman
 ‘the woman who is sleeping naked’

⁸See Plank, 1985, p. 175 for further examples.

⁹Holtei.

¹⁰According to Bresnan (1982a, p. 416–417) similar examples in Icelandic and Norwegian are ungrammatical. She derives this from a theory that predicts that the passivization of intransitive verbs whose subject functionally controls a predicate complement is impossible. The HPSG equivalent of functional control is sharing of SYNSEM values. To account for (398) Bresnan had to assume that the relation between German state predicates and their antecedents is anaphoric control rather than functional control as in Icelandic and Norwegian. The HPSG equivalent of anaphoric control is sharing of indices. Alternatively, she could assume that state predicates are not complements in German. In Section 4.2, I will develop a coindexing-analysis that assumes depictives to be adjuncts.

- b. Es enthält laut Hersteller Alfredo Dupetit „87 Prozent [N_r it contains according.to producer Alfredo Dupetit 87 percent [AP kaltgepreßtes] Hanfsaatöl] und als Duftkomponente 13 cold.pressed hemp.seed.oil and as scent.component 13 Prozent ätherische Öle“. ¹¹
 percent essential oils
 ‘According to the producer Alfredo Dupetit it contains 87 percent cold pressed hemp seed oil, and 13 percent essential oils provide the scent component.’

In (399) *Frau* is coreferent with the syntactic and the logical subject of *schlafende* and *Hanfsaatöl* is coreferent with the syntactic subject of *(kalt)gepreßte*, which is the logical object of *pressen*. Neither *Frau* nor *Hanfsaatöl* is syntactically realized in a projection of the deverbal adjective.

In the same vein, depictives may refer to non-expressed subjects in coherent and incoherent infinitival constructions. In the coherent construction in (400a), we have readings with reference to the non-expressed subject of the embedded verb (*schlafen*, ‘to sleep’) and to the subject and to the object of the matrix verb (*raten*, ‘to advise’). In the incoherent constructions in (400b,c), only reference to elements that depend on heads in the respective coherence field is possible. Since *nackt zu schlafen* is a separate coherence field in (400b,c), *nackt* can only refer to the subject of *schlafen*. Since the subject of the controlled verb *schlafen* is coreferent with the dative object of the controlling verb (*ihr*), the element the depictive predicate refers to is visible at the surface. ¹²

- (400) a. Er hat ihr nackt zu schlafen geraten.
 he has her naked to sleep advised
 ‘Naked, he advised her to sleep.’
 ‘He advised her to sleep naked.’

¹¹ taz berlin, 19.11.1994, p. 43.

¹² An interesting fact about scope in coherent constructions is that the depictive cannot scope over verbs that do not assign a semantic role to the NP that would be coreferent with the subject of the depictive if such scopings were permitted.

- (i) a. Er ließ den Mann nackt die Frau küssen.
 he let the man naked the woman kiss
 ‘He had/let the man kiss the woman naked.’
 b. lassen(er, küssen(Mann, Frau)) & nackt(er)
 c. lassen(er, küssen(Mann, Frau)) & nackt(Mann))
 d. *lassen(er, küssen(Mann, Frau)) & nackt(Mann)

So the reading where *nackt* refers to the man and scopes over *lassen* is not available. This is another difference between control constructions (400) and raising constructions (i).

- b. Er hat ihr geraten, nackt zu schlafen.
he has her advised naked to sleep
'He advised her to sleep naked.'
- c. Nackt zu schlafen hat er ihr geraten.
naked to sleep has he her advised
'He advised her to sleep naked.'

However, the dative object of *raten* is optional. If we omit this object we get another example without an overt antecedent for the depictive predicate:

- (401) Er hat geraten, nackt zu schlafen.
he has suggested naked to sleep.
'He suggested sleeping naked.'

Grewendorf (1989, p. 129; 1993, p. 1313) and Haider (1997a, p. 6) discuss the examples in (402a) and (402b), respectively.

- (402) a. Der Doktor untersucht _ nur nüchtern.
the doctor examines only sober
b. Dieser Arzt_i untersucht (Patienten_j) nur unbekleidet_{i/j}.
this doctor examines patients only undressed

Grewendorf assumes the non-overt subject of *nüchtern* to be the empty pronominal element *pro*. Haider (1997a, p. 28) assumes that depictive predicates are generated adjacent to the DP they predicate over. Therefore he is forced to assume some empty referential element in cases like (402b) and also in passive examples like (396). However, in GB-theory it is usually assumed that the passive participle does not assign a theta role to its logical subject (Chomsky, 1993, p. 124). Hence, there is no element, overt or non-overt, that bears the theta role of the logical subject and that could function as an antecedent of a depictive.

There are analyses of the passive like Haider's (1986a) (see also Chapter 3.2) where it is assumed that the lexical entry for the participle is identical in both perfect and passive constructions. In perfect constructions like (403), the subject of the participle (*gelesen*) is realized at the surface, while it is suppressed in the passive sentence in (403b).

- (403) a. Er hat den Aufsatz gelesen.
he has the article read
'He read the article.'
b. Der Aufsatz wurde gelesen.
the article was read

Whether the subject is realized or not depends on the auxiliary. One could claim that depictives can refer to both overt and non-overt subjects of participles since

subjects are represented in the lexical entry of participles in a way that makes it possible to realize them at the surface.

However, examples like (404) show that depictive predicates may refer to arguments of a verb even if there is no syntactic context in which the antecedent of the depictive could be realized.

- (404) a. Jedes nackt geputzte Fenster muß extra bezahlt werden.
 every naked cleaned window must separately paid get
 ‘Every window that has been/is cleaned naked has to be paid separately.’
 b. das nackt zu lesende Buch
 the naked to read book
 ‘the book that is to be read naked’

The syntactic subject of *geputzte*, i. e. the element that corresponds to the object of *putzen*, is coreferent with *Fenster* and the syntactic subject of *zu lesende* is coreferent with *Buch*. The depictive predicate refers to the subject of the verb stem that underlies the deverbal adjectives in (404). There is no syntactic environment in which the logical subject of *geputzte* could be realized as an NP.

Concluding this subsection about non-overt antecedents of depictive secondary predicates, we can say that reference to non-overt elements is possible in a variety of cases. It follows that the explanation that was suggested by Williams (1980, p. 207) for examples like (405b) cannot be valid.

- (405) a. Bill strikes John as sick.
 b. * John was struck as sick.

Williams states the constraint that every predicate must have an antecedent. What he means is that every predicate must have an overt antecedent and this claim cannot be upheld as a constraint on predication for all languages in the light of the data presented above.

In the next section, I want to explore whether there are restrictions on the grammatical function, case, or thematic role of the antecedent element.

4.1.1.2 Reference to Oblique Antecedents

Haider (1985a, p. 94) claims that depictive predicates can refer to NPs with structural case only. According to Haider, only nominative and accusative are structurally assigned cases in verbal environments while dative is not (See also Section 1.4 for Haider’s arguments supporting this view.). In (406a) both reference to the subject and to the accusative object is possible, while the reading with reference to the object is hardly available in (406b).

- (406) a. Er_i sah sie_j nackt_{i/j}.
 he-NOM saw her-ACC naked

- b. Er_i half ihr_j nackt_{i/??j}.
 he-NOM helped her-DAT naked

As Haider notes, this could be explained easily by the assumption that the subject of the predicate and the NP it refers to are identical. The fact that in German, NP subjects always have structural case explains why a depictive element cannot refer to a dative NP, because dative is taken to be a lexical case.

Wunderlich (1997a, p. 131) develops an analysis for depictives that posits two different subanalyses: Depictives that refer to the subject (VP-adjuncts), and depictives that refer to the direct object (V-adjuncts). Datives (including dative objects of verbs like *helfen*) are assumed to be indirect objects.¹³ Therefore he predicts that reference to dative NPs is not possible. Kaufmann and Wunderlich (1998, p. 9) claim that the predication of depictive and resultative predicates over indirect objects is excluded in all languages.

Rothstein (1985, p. 85) gives the English example in (407) that is equivalent to the German sentences in (408).

- (407) The nurse_i gave John_j the medicine sick_{i/*j}.
- (408) a. Die Krankenschwester_i gab John_j krank_{i/*j} die Medizin.
 the nurse gave John-DAT ill the medicine-ACC
 'The nurse gave John the medicine ill.'
- b. Die Krankenschwester_i gab John_j die Medizin krank_{i/*j}.
 the nurse gave John-DAT the medicine-ACC ill

Rothstein explains the impossibility of *krank* referring to *John* by a restriction that allows depictives to refer to agents and patients, but not to goals. A similar claim is made by Koch and Rosengren (1995, p. 80), who claim that only reference to agent or theme is allowed.¹⁴ That the reference to thematic roles is not suited for the explanation of the possible antecedents was noted by Koizumi (1994, p. 46–48). His examples are given in (409a, b). Simpson (In Preparation) provides the additional example in (409c):

- (409) a. They gave the patients_j the drugs drunk_{*j}.
 b. The patients_j were given the drugs drunk_j.
 c. After being given the drugs drunk_j, the patients_j complained.

Postponing the discussion of the dative of ditransitives for a moment and returning to the structural/lexical case distinction, we can reject Haider's explanation on the basis of (410) which clearly shows that the reference to dative NPs is possible:

¹³Wunderlich (1997a, p. 103) defines indirect object as [+hr, +lr]. hr stands for *higher role* and lr for *lower role*. [+hr, +lr] means that there is both a higher and a lower role. Wunderlich (1997b, p. 51) states that the dative object of *helfen* is exceptionally marked [+hr, +lr].

¹⁴On page 4 they make this claim with reference to grammatical functions, i. e. subject and direct object.

- (410) Nackt_i wurde ihm_i klar, daß sein Anzug wohl für immer
 naked became him-DAT clear that his suit possibly for ever
 verloren war.
 lost was
 'Naked it became clear to him that his suit was possibly gone for ever.'

The sentence contains a subject sentence that is not a possible antecedent. The only possible antecedent is the dative object of *klar* ('clear').

I suggest that the contrast in (406) is not due to a strict constraint that rules out dative objects as antecedents, but that it is due to the different positions of the dative and the accusative in the accessibility hierarchy whose influence was observed in connection with a broad variety of phenomena like passive and relativization (Keenan and Comrie, 1977), constituent order (Pullum, 1977), reductions in coordinated structures (Klein, 1985, p. 15), topic drop (Fries, 1988), non-matching free relative clauses (Bausewein, 1990; Pittner, 1995; Müller, 1999b), and Binding Theory (Grewendorf, 1985, p. 160; Pollard and Sag, 1992; Pollard and Sag, 1994, Chapter 6). This hierarchy was originally proposed by Keenan and Comrie (1977) and has the following form:^{15,16}

SUBJECT > DIRECT OBJECT > INDIRECT OBJECT > OBLIQUES > GENITIVES > OBJECTS OF COMPARISON

This accessibility hypothesis is further supported by passive examples like those in (411). In both sentences the reference to the dative NP is considerably better than in (406b) and (408), where another candidate for coreference appears at the surface.

- (411) a. Ihr_j wurde nackt_{i/j} geholfen.
her-DAT was naked helped
'She was helped naked.'
- b. John_j wurde die Medizin nackt_{i/j} verabreicht.
John-DAT was the medicine-NOM naked given
'John was given the medicine naked.'

¹⁵Some authors use case hierarchies instead of this hierarchy of grammatical functions.

¹⁶Nichols (1978, p. 120) also mentions the obliqueness hierarchy. She remarks that crosslinguistically secondary predicates usually refer to the subject or the direct object. She examined Lithuanian, Latvian, the Slavic languages, and minor West Finnic languages. She discusses Finnish data like (i) that show reference to oblique objects.

(i) Hänelle maksettiin hyvin opettajana.
to.him was.paid well teacher
'He was well paid as a teacher.' (= impersonal passive lit. him was well paid as a teacher)

Her examples correspond to German (and English) sentences with an *als* phrase which are not treated here.

Of course, both sentences in (411) have a reading where the helper or the giver is naked, respectively. This reading is indicated by the *i*-index at *nackt* which does not appear anywhere else in the sentence.

In general, it can be said that the reference to dative NPs improves considerably if the reference to the nominative is excluded by world knowledge (Plank, 1985, p. 175):

- (412) Man_i half ihm_j erst halbtot_{i/j}.¹⁷
 one-NOM helped him-DAT only half.dead
 'One helped him only half dead.'

Since it is implausible that half dead people help others, the subject is not a plausible antecedent candidate in (412).

Finally, one can even find examples that have overt accusative objects and a depictive predicate that refers to a dative NP:

- (413) Mangos werden manchmal als 'Badewannenfrüchte' bezeichnet, weil das saftige Fruchtfleisch Flecken hinterlassen kann, die schwer oder gar nicht zu entfernen sind. In den Tropen gibt man sie den Kindern meistens nackt zu essen.¹⁸

'Mangos are sometimes described as "bathtub fruits" because their juicy flesh can leave stains that are difficult to remove or are even permanent. In tropical countries one usually gives them to the children when they are naked.'

The example in (413) was quoted from the 'Hohlspiegel' which is part of the magazine *Der Spiegel*. The 'Hohlspiegel' contains quotations from other publications that are either semantic nonsense, like *a dead man was killed*, or ambiguous with a preference for a strange reading. (414) is an example for the latter kind.

- (414) Der Senat plant offenbar noch in der kommenden Woche eine
 the senate plans clearly still in the coming week a
 Gesetzesinitiative gegen Kampfhunde im Abgeordnetenhaus.¹⁹
 law.initiative against fighting.dogs in.the.house.of.representatives
 'The senate clearly plans a legal initiative against dangerous dogs in the House of Representatives as early as the coming week.'

The ambiguities arise because of several possibilities for PP attachment. The sentence in (413) made it to the 'Hohlspiegel' because the relation of reference in which *man* ('one') is the subject of *nackt* is the more common one syntactically. However, from the context of the sentence it is clear that the children are naked, i. e. the discourse referent that is referred to by the dative object.

¹⁷Plank, 1985, p. 175.

¹⁸From the magazine 'Natur und Heilen', quoted from Hohlspiegel, Spiegel, 9/2000, p. 262.

¹⁹Tagesspiegel, quoted from Hohlspiegel, Spiegel, 30/2000, p. 194.

Wunderlich discusses the following sentences, which are other examples of depictives referring to dative NPs. I quote his examples here as (415) with his judgments.

- (415) a. ?? weil er dem Hemd ungebügelt einen Knopf
 because he-NOM the shirt-DAT unironed a button-ACC
 annähen wollte.
 on.sew wanted.to
 'because he wanted to sew a button onto the shirt while it was unironed.'
- b. * weil er dem Hemd einen Knopf ungebügelt
 because he-NOM the shirt-DAT a button-ACC unironed
 annähen wollte.
 on.sew wanted.to

He argues that *ungebügelt* in (415a) is a postnominal adjective (see (391) for examples) since it cannot be an instance of scrambling, as (415b), which he assumes to be the base order from which (415a) is derived, is ungrammatical. The only thing that his pair of sentences shows is that it does not make sense to assume a base order from which other configurations are derived. In a grammar that has just one representation for every utterance where linearization rules rule out ungrammatical serializations, one does not have to assume ungrammatical base orders.²⁰ (416) proves that the adjective in (415) is not necessarily a postnominal one.

- (416) ?? weil er dem Hemd gestern ungebügelt einen
 because he-NOM the shirt-DAT yesterday unironed a
 Knopf annähen wollte.
 button-ACC sew wanted.to
 'because he wanted to sew a button onto the shirt while it was unironed yesterday.'

In (416) the noun phrase is separated from the adjective by the adverb *gestern* ('yesterday'). Nevertheless, (416) is of the same quality as (415a). In Wunderlich's theory, (416) has the same base order as (415a), namely (415b), i. e., (416) must be derived from an ungrammatical base order. Since such a derivation is possible for (416), it should be possible for (415a) as well. This shows that Wunderlich's argumentation for the postnominal status of the adjective is not sound.

Having rejected Wunderlich's argumentation, let me try to explain the reason for the unacceptability of (415b): (415b) is bad since the depictive predicate follows three NPs that are syntactic antecedent candidates.²¹ The two preferred candidates, i. e. the subject and the accusative object are semantically implausible. In

²⁰See also the discussion of reconstruction of partial verb phrase frontings on page 95.

²¹The influence of the order of the antecedent and the depictive predicate will be examined in detail in Section 4.1.4. It will be shown that there is a strong preference for antecedents to precede the depictive predicate. See also the discussion of (393) on page 176.

(415a) there are just two candidates and only one is inanimate. Therefore (415a) is easier to process than (415b). The reference to datives is already marked and the serialization in (415b) further increases the processing load so that the sentence becomes unacceptable.

Simpson (In Preparation) notes that changing the polarity and modality to force a generic conditional interpretation improves reference to recipient/goal arguments. Her English example can be translated to German:

- (417) Du kannst ihnen bewußtlos keine Spritzen geben.
 you-NOM can them-DAT unconscious no injections-ACC give
 'You can't give them injections unconscious.'

From the data presented above it must be concluded that both the restriction on the case of possible antecedent phrases and the restriction on the grammatical role of the antecedent phrase are not adequate. In what follows, I will therefore assume that the subject of the depictive predicate is coindexed, i. e. coreferent with, the antecedent phrase. I do not assume that the subject of the depictive and the antecedent are identical, as was suggested by Haider.

Having shown that the reference to dative NPs is possible, I now turn to more oblique arguments. The reference to NPs inside PPs that are complements of a verb is hardly possible.

- (418) daß Jan [mit Maria_i] nackt_{*i} sprach.
 that Jan with Maria naked talked
 'that Jan talked to Maria naked.'

Kayne (1985, p. 123) gives an example for English, that is not transferable to German with a similar depictive construction.

- (419) a. (?) Why, he's so enamoured of that chair, he'd even sit in it unpainted.
 b. * Er ist ja so verliebt in diesen Stuhl, daß er sogar auf ihm / darauf ungestrichen sitzen würde.
 c. * Er ist ja so verliebt in diesen Stuhl, daß er sogar ungestrichen auf ihm / darauf sitzen würde.

Depictive predicates in passive constructions can refer to the agent-PP:

- (420) Das Buch wurde von den meisten Lesern nackt gelesen.
 the book was by the most readers naked read
 'The book was read naked by most of the readers.'

Bresnan (1982a, p. 378) argues on the basis of (421) that state predicates can refer to elements in PPs, but this reference could be established indirectly via the subject of the passivized verb that does not surface, but is nevertheless accessible (see Section 4.1.1.1).

- (421) John said he was passed by Mary in the hall yesterday drunk as usual.

Since the non-expressed subject of the main verb is coindexed with the PP, the subject of the depictive predicate can be coindexed with the logical subject of the main verb and therefore all three phrases are coindexed via transitivity. So, in order to prove that reference to NPs inside of PPs is possible, one needs examples in which the PP has object status in both active and passive sentences. The only corpus example with reference to an NP in a PP I could find so far is (422).

- (422) Beim Betreten des Gehwegs sei er mit großer Wucht zu Boden geschleudert worden, wo er kurzzeitig das Bewußtsein verlor.
 Noch am Boden liegend, sei auf ihn eingetreten worden.²²
 still on.the floor lying be on him PART.kicked got
 ‘When he stepped onto the path he was violently thrown to the ground where he lost consciousness for a short period. While he was still on the floor he was kicked.’

As in the examples in (411) where we have reference to a dative object, the sentence in (422) is a passive sentence. The subject of *eintreten* (‘to kick’) was a police officer and therefore the reference of *liegend* (‘lying’) to the logical subject of *eintreten* is excluded as antecedent by world knowledge. The only remaining antecedent candidate is the NP in the PP.

4.1.1.3 Reference to Objects of Nominalized Verbs

Rothstein (1985, p. 85) notes that *dog* can be understood as the subject of *sick* in the example (423).

- (423) John’s gift of the dog_i to Mary_j sick_{i/*j}

Wilder (1994, p. 224) provides an example for a depictive referring to a prenominal genitive:

- (424) On learning of her arrival dead at the hospital, he wept.

Such constructions are also possible in German. The depictive predicate is always serialized immediately to the left of the noun. The noun *Kaltpressung* as used in (425b) is also imaginable in contexts like (426a).

- (425) a. Sie sind ein Hinweis darauf, daß das Öl erhitzt und nicht kalt
 they are an indication that.on that the oil heated and not cold
 gepreßt wurde.²³
 pressed got
 ‘They indicate that the oil was heated and not cold-pressed.’

²²taz, 10.06.2000, p. 21.

²³taz berlin, 19.11.1994, p. 43.

- b. Denn die schonende Kaltpressung ist nur für Speiseöle von
 for the gentle cold.pressing is only for edible.oils of
 Bedeutung.²⁴
 meaning
 'For the gentle cold-pressing method is only of significance for edible
 oils.'
- (426) a. die Kaltpressung von Öl / des Öls
 the cold.pressing of oil the oil-GEN
- b. das Kalttrinken von Milch / der Milch (ist nicht zu empfehlen)
 the cold.drinking of milk the milk-GEN is not to suggest
 'It is not good to drink milk cold.'
- c. das Nacktbaden von John / Johns Nacktbaden
 the naked.bathing of John John's naked.bathing
 'John's bathing naked'

On nominalization see also Chapter 6.1.10.2.

The data discussed so far show that the reference to non-overt elements is possible and that subjects, accusative objects, and more oblique arguments are possible as antecedents. This could be captured by an analysis that coindexes an element of the the argument structure of the verb (or deverbal element) with the subject of the depictive predicate. Such an approach predicts that the reference to NPs that are not arguments of the verb is excluded. In the next two subsections, I examine the possibility of referring to non-arguments and the possibility of the reference to NPs that are contained in argument NPs.

4.1.1.4 Reference to Non-Arguments

NPs in adjuncts are excluded from the list of possible referents of depictives as (427) shows.

- (427) weil Karl_i [neben Maria_j] nackt_{i/*j} schlief.
 because Karl next Maria naked slept
 'because Karl slept next to Maria naked.'

Simpson (In Preparation) cites an English reference grammar with the following example:

- (428) ? For Mary he'd do anything, pregnant or not.

The German translation is (429).

- (429) Für Mary würde er alles tun, schwanger oder nicht.
 for Mary would he everything do pregnant or not

²⁴taz berlin, 19.11.1994, p. 43.

The example in (429) differs from the examples discussed so far in that the predicate *schwanger* is serialized to the right of the verbal complex. As (430) shows, depictive predicates are usually serialized in the *Mittelfeld*:

- (430) a. Er hat Maria schwanger gesehen.
 he has Maria pregnant seen
 ‘He saw Maria pregnant.’
 b. * Er hat Maria gesehen schwanger.
 he has Maria seen pregnant

I therefore suggest that (429) is an instance of a different construction. It is a reduced clause. The phrase *schwanger oder nicht* may also be used in the *Mittelfeld*, but this is possible only with strong intonational breaks:

- (431) a. Für Mary würde er – schwanger oder nicht – alles tun.
 for Mary would he pregnant or not everything do
 b. Er würde für Mary – schwanger oder nicht – alles tun.
 he would for Mary pregnant or not everything do

I suggest that *schwanger oder nicht* has to be analyzed as a parenthetical reduced clause in (431). The reduced clause corresponds to a clause like the one in (432) that contains the pronoun *sie* (‘she’) and hence the coreference in (429) is a sort of pronominal coreference.

- (432) Für Maria würde er alles tun, egal ob sie schwanger ist,
 for Maria would he everything do equal whether she pregnant is
 oder nicht.
 or not
 ‘He would do everything for Maria, irrespective of whether she is pregnant, or not.’

4.1.1.5 Reference to Elements inside of Arguments

The reference to NPs that are internal to other NPs is also excluded, as is demonstrated by (433):²⁵

- (433) a. daß Jan [den Freund von Maria_i] nackt_{*i} traf.
 that Jan the friend of Maria naked met
 ‘that Jan met the (male) friend of Maria naked.’
 b. daß Jan [Marias_i Vater] nackt_{*i} traf.
 that Jan Maria’s father naked met
 ‘that Jan met Maria’s father naked.’
 c. * daß Jan [Maria nackt und ihren Freund] traf.
 that Jan Maria naked and her friend met
 Intended: ‘that Jan met Maria naked together with her friend.’

²⁵Neeleman (1994, p. 157) gives Dutch examples that are equivalent to those in (433a,b).

Here we have a clear difference between the depictive secondary predicate (433c) and the postnominal adjective in (391c). In (391c), we have a coordinated structure of the same type as in (433c), but the adjective (391c) is a normal attributive adjective that is in the domain of the noun that it modifies.

Having confirmed the predictions made by a coindexation analysis that refers to the argument structure, I turn now to Plank's coordination data (1985, p. 163).

4.1.2 Coordination of Depictive Predicates

As Plank (1985, p. 163) has noted, it is not possible to coordinate two depictive predicates that predicate over different antecedent elements:

- (434) a. Der Gast trank das Bier stehend lauwarm.
 the guest drank the beer standing lukewarm
 'The guest drank the beer lukewarm standing up.'
- b. * Der Gast trank das Bier stehend und lauwarm.

This is explained by a theory that assumes that the secondary predicates in (434a) can predicate independently, while two coordinated predicates have to predicate over the same subject. (434b) is ungrammatical since if *stehend und lauwarm* refers to *Gast* the selectional restrictions of *lauwarm* are violated and if *stehend und lauwarm* refers to *Bier*, *Bier* and *stehend* conflict.

4.1.3 The Case of the Subject of the Depictive Predicate

The example in (435) shows that the case of the subject of the secondary predicate is nominative while the case of the antecedent is accusative.

- (435) Er sah [den Wirt und den Fahrer] am Haus, einer /
 he saw the landlord and the driver-ACC at.the house one-NOM
 * einen neben dem anderen stehend.
 one-ACC next the other standing
 'He saw the landlord and the driver standing next to each other by the house.'

As was discussed in Chapter 2.1.3.2, this is evidence for an analysis, in which the subject of the depictive and the antecedent noun are coindexed rather than identical. The example further supports the assumption that depictives pattern with control constructions rather than with raising constructions.

4.1.4 Linearization

In the following subsection, I want to discuss linearization properties of depictive predicates. I show that depictive predicates can be serialized rather freely and that they pattern in this respect with adjuncts (in particular adverbs) which can also be serialized in various ways. From the discussion of the data, it will become clear that predicate and antecedent have to be treated as two independent constituents.

4.1.4.1 Linearization with Respect to the Antecedent

As was already mentioned during the discussion of the sentences in (393)—repeated here as (436)—there is a strong preference to let the depictive predicate follow its antecedent.

- (436) a. weil er die Äpfel ungewaschen ißt.
 because he the apples unwashed eats
 ‘because he eats the apples unwashed.’
 (He is unwashed or the apples are unwashed.)
- b. weil er ungewaschen die Äpfel ißt.
 because he unwashed the apples eats
 ‘because he eats the apples unwashed.’
 (He is unwashed.)
- c. * weil ungewaschen er / der Mann die Äpfel ißt.
 because unwashed he the man the apples eats

Appropriate ordering of the depictive predicate may help to disambiguate sentences. In (436b), the reading where the apples are unwashed is not available. However, with appropriate focusing even (436b) has two readings:

- (437) weil er ungewaschen nur Äpfel ißt.
 because he unwashed only apples eats

The following example by Paul (1919, p. 51) also shows that the rule is not strict:

- (438) die Bosheiten, die Ihr unschuldig_i (ohne meine Schuld) [an
 the malicious.things that you innocently without my fault at
 mir_i] ausübt
 me practice
 ‘the unmerited malicious things that you (Sir) do to me’

As Paul remarks, such examples occur quite infrequently. The sentence is remarkable in another way: The depictive refers to an element in a PP, which is generally rather marked. See the discussion of (419). While I find the sentence in (438) not really acceptable, the following example is fine:

- (439) weil betrunken_i niemand_i hereinkommt.²⁶
 because drunk nobody-NOM in.comes
 ‘because nobody gets in drunk.’

So the ordering constraint for depictives and their antecedents has to be treated as a rule that has a strong preference, but may be violated. Note that no other possible antecedent candidate for the depictive is present in (439). There are no ambiguities that have to be avoided by ordering the elements in an appropriate way.

²⁶ von Stechow and Sternefeld, 1988, p. 466.

4.1.4.2 Fronting

Hoberg (1981, p. 218) observed that depictive predicates can be fronted independently of the element they refer to.

- (440) a. Sie hatte die Kraft gehabt zu klingeln, aber *ohnmächtig* fanden die Herbeieilenden, Tochter und Magd, *sie* in ihrem Blut.²⁷
 ‘She had had the strength to ring, but the daughter and maid who rushed to the scene found them lying unconscious in their blood.’
 b. [...] *von Staubschwaden umtanzt*, stehen Journalisten in
 by dust.clouds around.danced stand journalists in
 kurzärmeligen Hosen vor Fassaden grandioser Karstigkeit.²⁸
 short-sleeved trousers before façades grandiose karsticness
 ‘With clouds of dust dancing around them, the journalists stand in front of grandiose karstic façades in short-sleeved trousers.’

But they can also stay in the *Mittelfeld* while their antecedent is fronted:

- (441) Peter hat nackt geschlafen.
 Peter has naked slept
 ‘Peter slept naked.’

As Reis (1985, p. 143) has shown, the simultaneous fronting of the depictive and its antecedent is in general not possible.

- (442) a. * Den Rotwein temperiert habe ich getrunken, nicht deine
 the red.wine warm have I drunk not your
 Freunde.²⁹
 friends
 Intended: ‘I drunk the red wine at room temperature not your friends.’
 b. * Das Fleisch roh schneiden Sie am besten in kleine Streifen.³⁰
 the meat raw cut you at.the best in small strips
 Intended: ‘You best cut the meat into small strips raw.’

The appearance of two constituents in the *Vorfeld* is restricted by thematic conditions as is discussed in Müller, 2002b. Within an appropriate context, frontings like the one in (442) may be found, but the fact that without such special conditions frontings like (442) are excluded suggests that *den Rotwein* and *temperiert* are independent constituents.

²⁷Thomas Mann, *Die Betrogene*, Frankfurt/Main, 1954, quoted from Hoberg, 1981, p. 218.

²⁸Max Goldt 1998. ‘Mind-boggling’ — *Evening Post*. Zürich: Haffmans Verlag, p. 143.

²⁹Reis, 1985, p. 143.

³⁰Oppenrieder, 1991, p. 130.

4.1.4.3 Linearization in the *Mittelfeld*

Depictive predicates can be serialized in the *Mittelfeld* rather freely. Lüdeling (2001, p. 51–52, fn. 45) claims that the position immediately before the verb in a verb-final clause is the preferred position and tries to show this with the following examples:

- (443) a. daß Dornröschen ihre Milch gern heiß trinkt.
 that Sleeping Beauty her milk with.pleasure hot drinks
 ‘that Sleeping Beauty likes to drink her milk hot.’
 b. daß Dornröschen ihre Milch heiß gern trinkt.
 that Sleeping Beauty her milk hot with.pleasure drinks

According to her, (443a) is much better than (443b). The only thing that her examples show is that the sentence where *gern* scopes over *heiß* is preferred. As (444a) shows, subject reference is also possible and (444b,c) are deviant in the same way, despite of the fact that both *nackt* and *gern* are not adjacent to the verb in (444b).

- (444) a. daß Dornröschen gern nackt ihre Milch trinkt.
 that Sleeping Beauty with.pleasure naked her milk drinks
 b. daß Dornröschen nackt gern ihre Milch trinkt.
 that Sleeping Beauty naked with.pleasure her milk drinks
 c. daß Dornröschen nackt ihre Milch gern trinkt.
 that Sleeping Beauty naked her milk with.pleasure drinks

Steube (1994, p. 249) discusses the similar example in (445):

- (445) * weil ich die Äpfel unreif oft esse.
 because I the apples unripe often eat
 Intended: ‘because I eat apples often when they are unripe.’

Again, this example is bad for semantic reasons, but the serialization pattern is possible with other adverbials.³¹

- (446) weil ich die Äpfel unreif nicht esse.
 because I the apples unripe not eat
 ‘because I do not eat apples unripe.’

With regard to their serialization, the (adjectival) depictive predicates behave like adverbs. However, that these predicates should not be treated as adverbs becomes obvious when one considers languages like English where adverbs are inflected differently. Rosengren’s English sentences (1995, p. 92) in (447) show an example for a depictive and one for an adverb:

- (447) a. He ate the meat raw / * rawly. (depictive)

³¹Rosengren (1995, p. 101) gives an example that is similar to (446).

- b. He ate the meat slowly / * slow. (adverb)

There are also adjectives in German that are used adverbially, so that a reference of an adjective to an event cannot be excluded in general. Rosengren (1995, p. 92) demonstrates this by the following examples:³²

- (448) a. The father opened the letter rather nervous.
 b. The father opened the letter nervously.
 c. Der Vater öffnete nervös den Brief.

The sentence in (448c) corresponds to the two examples in (448a,b). In one reading *nervös* is used adverbially and in the other reading it is a depictive predicate that refers to *Vater*.

Having discussed the linearization properties of depictive secondary predicates, I now turn to the question of whether more than one depictive predicate is allowed per clause.

4.1.5 Iteration

It is possible to have more than one depictive predicate per verb:³³

- (449) a. daß er nackt die Äpfel ungewaschen aß.
 that he naked the apples unwashed ate
 ‘that he ate the apples unwashed naked.’
 b. daß er die Äpfel nackt ungewaschen aß.
 that he the apples naked unwashed ate
 c. daß er die Äpfel ungewaschen nackt aß.
 that he the apples unwashed naked ate
 d. daß er gestern im Anzug fröhlich die Äpfel aß.
 that he yesterday in.the suit happy the apples ate
 ‘that he ate the apples yesterday in the suit happy.’

Reference to both the subject and to the object is possible with iterated depictives.³⁴ Multiple reference to the subject or object is also not excluded. The following example by Rosengren (1995, p. 108) is a translation of a similar sentence

³²Rosengren’s data are taken from an English reference grammar.

³³See also Plank’s example (434) on page 189.

³⁴Rapp (1997, p. 184) makes the interesting observation that depictive secondary predicates are impossible in state passive constructions:

- (i) a. Das Fleisch ist (*roh) serviert.
 the meat is raw served
 b. Die Äpfel sind (*poliert) überreicht.
 the apples are polished over.handed
 ‘The apples are handed over polished.’

She assumes that *serviert* and *überreicht* are adjectives and claims that the depictive and these adjectives have the same syntactic and semantic function and that such functions may not be filled by two

provided by Winkler (1997, p. 79) and shows two depictive predicates, one with reference to the subject and one with reference to the object, together with a resultative predicate (*in Stücke*, 'into pieces').

- (450) Die Holzfäller_i haben, ungerührt_i von den Bitten der jungen
 the lumberjacks-NOM have untouched by the pleas of the young
 Leute, einen alten Baum_j noch grün_j in Stücke gesägt.
 people an old tree-ACC still green in pieces sawn
 'Unmoved by the young people's pleas, the lumberjacks sawed an old tree
 into pieces while it was still green.'

Such data show that it is inappropriate to assign one single grammatical function to depictives and resultatives, as it is suggested by Bresnan (1982a, p. 377). For the same reason a single structure like (451) for both depictives and resultatives is inappropriate.

- (451) [_{VP} V NP AP]

Such a structure is argued for by Rapoport (1990, p. 38), who explicitly excludes co-occurrence of depictives and resultatives in English. See also Simpson, In Preparation for such a claim. Simpson discusses examples with both depictives and resultatives. She judges them marginal and claims that such examples are better when the event is interpreted as habitual or generic. The following German

constituents. She tries to prove this by (ii).

- (ii) *Der Rasen ist grün schön.
 the lawn is green beautiful

However, the discussion above showed that depictive predicates differ from adjectives in copula constructions in various ways. If adjectives in copula constructions had the same status as depictive predicates, one would predict that both can be iterated and can be combined since the iteration of depictives is possible, as (449) shows. Furthermore, additional adjectives in copula constructions are possible:

- (iii) a. Sie ist nur geschminkt schön.
 she is only with.make-up beautiful
 'She is beautiful only with make-up.'
 b. Der Rasen ist nur grün schön.
 the lawn is only green beautiful
 'The lawn is only beautiful when it is green.'

With proper intonation, even (ii) is acceptable.

Nichols (1978, p. 115) discusses an English example for such conditional constructions that is parallel to (iv):

- (iv) Dieser Tee ist kalt nicht gut.
 this tea is cold not good
 'This tea isn't good cold.'

The exact reasons for the ungrammaticality of (i) are unclear to me.

sentence is neither habitual nor generic, but contains a depictive and a resultative predicate:

- (452) Gustav hat das Fleisch roh klein / in Stücke geschnitten.
 Gustav has the meat raw small into pieces cut
 'Gustav chopped the raw meat into little pieces.'

As the examples in (449a–c) show, there are no specific ordering constraints on depictives. They can be permuted as other adjuncts can in the German *Mittelfeld* provided the antecedent precedes the respective depictive predicate. In particular, there is no nesting requirement: In (449c), the depictive predicate that refers to the subject follows the depictive predicate that refers to the object. Wunderlich's claim (1997a, p. 129) that such orders are not possible cannot be confirmed. Informants rather had processing problems with both serializations in (449b,c) since the references are more difficult to resolve for (449b,c) than for (449a). As far as the examples in (449b,c) are concerned, the informants preferred the linearization in (449c), which should be ungrammatical according to Wunderlich. Berthold Crysmann observed that the length of the constituents and the possibility to have phrasal breaks plays a role in the determination of the preferred order. Wunderlich judged (453a) to be ungrammatical, but it has the same linearization as (453b).

- (453) a. * weil sie den Fisch roh schick angezogen essen wollte.
 because she the fish raw fashionably dressed eat wanted.to
 'because she wanted to eat the fish raw fashionably-dressed.'
 b. weil sie den Fisch noch völlig ungekocht nackt essen
 because she the fish still totally uncooked naked eat
 wollte.
 wanted.to
 'because she wanted to eat the fish totally uncooked naked.'

So, if his judgment is justified at all, it is due to non-structural factors.

4.1.6 Focus Projection and Stress

In a very detailed study, Winkler (1997) compares focus projection properties of depictive and resultative predicate constructions. She shows that a wide focus reading of resultatives is obtained if the secondary object is directly assigned a pitch accent, which can indirectly license the resultative predicate as a [+focus]-constituent. In depictive constructions, a pitch accent on the secondary subject and the secondary predicate is required to achieve a wide focus reading (p. 310). Since adjuncts differ from complements in that they form an independent intonational phrase (p. 220), this supports the assumption that depictive predicates are adjuncts. Furthermore, Winkler's experiments support a complex predicate analysis for resultative predicates.

After this brief remark concerning focus, I now provide the analysis for depictive secondary predicates.

4.2 The Analysis

In the preceeding data section, I showed that depictive predicates behave like adjuncts: They can be serialized independently of their antecedent, they can be serialized rather freely in the *Mittelfeld*, and there is no restriction on the number of depictive predicates per clause. Since the discussion in the data section showed that the subject of the depictive predicate can be coreferent with a dative NP, or with an NP inside of a PP, a raising analysis that identifies the subject of the depictive predicate with its antecedent cannot be adequate. Instead, I suggest a coindexing analysis whereby the subject of the depictive secondary predicate is coindexed with an element of the argument structure of the primary predicate. In HPSG grammars, the argument structure of a head is represented in a list (ARG-ST). This list contains *synsem*-objects, i. e. both syntactic and semantic information about all arguments of the head (Pollard and Sag, 1994, Chapter 9). The HPSG Binding Theory is set up with reference to this list which is ordered according to the obliqueness hierarchy that was discussed in Section 4.1.1.2. To capture the adjunct properties of depictive secondary predicates, I suggest a lexical rule that recategorizes predicative adjectives and prepositions so that they can modify verbal elements. In the HPSG treatment of modification that was suggested by Pollard and Sag (1994, Chapter 1.9), the modifier selects the head it modifies via the feature MOD. The modifier can access syntactic and semantic properties of the modified head. In particular, the modifier has access to the argument structure of the modified head and therefore the coindexing of the subject of the depictive secondary predicate and the antecedent that is an element of the argument structure of the modified head can be established in the lexical rule that licenses the appropriate lexical item. To see how this works, let us discuss the lexical rule on the next page. It maps a predicative element that can be used in copula constructions or subject or object predicatives onto a depictive predicate.³⁵ In the lexical rule in (454), the index of the subject of the input predicate (\square) is structure-shared with the index of an element of the ARG-ST list of the element that the depictive predicates over. The ARG-ST list is a list that contains the complete argument structure of a predicate, i. e., both subjects and other dependents of finite and non-finite verbs are members of this list. The structure sharing of the indices of a depictive predicate and its antecedent is equivalent to the structure sharings of a modified noun and a modifying adjective (as in *rotes Buch* ('red book')) or adjectival participle (as in *geliebte Frau* ('loved woman')). The modification of the verbal element can be seen as an instance of control: The depictive controls an argument of the verbal head.

Haider's approach is equivalent to identifying the complete SUBJ element of the input predicate with the left-hand side of the *member*-relation. It is a raising approach. Since subject NPs always have structural case, only reference to the sub-

³⁵The semantic representation is of course a simplification. It is a place holder for whatever turns out to be the correct semantic representation for depictive predicates. For several different semantic patterns see for instance Plank, 1985.

(454) Lexical Rule that maps predicative elements onto depictive predicates:

$$\begin{array}{c}
 \left[\begin{array}{c} \text{SYNSEM|LOC} \\ \text{word} \end{array} \left[\begin{array}{c} \text{CAT|HEAD} \\ \text{CONT } \boxed{2} \end{array} \left[\begin{array}{c} \text{SUBJ } \langle \text{NP}_{\boxed{1}} \rangle \\ \text{PRD } + \\ \text{adj-or-prep} \end{array} \right] \right] \right] \mapsto \\
 \left[\begin{array}{c} \text{SYNSEM|LOC} \\ \text{word} \end{array} \left[\begin{array}{c} \text{CAT|HEAD} \\ \text{CONT} \end{array} \left[\begin{array}{c} \text{MOD} \\ \text{ARG1 } \boxed{2} \\ \text{ARG2 } \boxed{4} \\ \text{and} \end{array} \right] \left[\begin{array}{c} \text{LOC} \\ \text{LEX } + \end{array} \left[\begin{array}{c} \text{CAT} \\ \text{CONT } \boxed{4} \end{array} \left[\begin{array}{c} \text{HEAD|VERBAL } + \\ \text{XCOMP } \langle \rangle \\ \text{ARG-ST } \boxed{3} \end{array} \right] \right] \right] \right] \right] \wedge \\
 \text{XP}_{\boxed{1}} = \text{member}(\boxed{3})
 \end{array}$$

ject and the direct object of the modified verbal element is predicted to be possible. This is empirically not correct, as the data that was discussed in Section 4.1.1.2 showed.

I will demonstrate how the rule in (454) works with the examples in (455).

- (455) a. Er ist nackt.
 he is naked
 b. Er sah sie nackt.
 he saw her naked

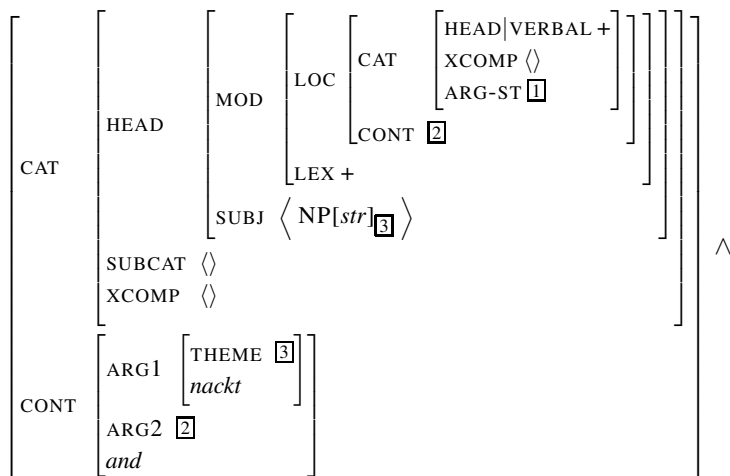
The entry for the predicative version of *nackt* that is used in copula constructions like (455a) is shown in (456).

(456) *nackt* ('naked', predicative version as used in copula constructions):

$$\left[\begin{array}{c} \text{CAT} \\ \text{CONT} \end{array} \left[\begin{array}{c} \text{HEAD} \\ \text{SUBCAT } \langle \rangle \\ \text{XCOMP } \langle \rangle \\ \text{THEME } \boxed{1} \\ \text{nackt} \end{array} \left[\begin{array}{c} \text{SUBJ } \langle \text{NP}_{\text{str}}[\boxed{1}] \rangle \\ \text{PRD } + \\ \text{adj} \end{array} \right] \right] \right]$$

The entry in (456) is the input for the rule (454). The result of the rule application is shown in (457).

(457) *nackt* ('naked', version that is used as depictive predicate):


$$\text{XP}_{\boxed{3}} = \text{member}(\boxed{1})$$

This version of *nackt* selects a verbal element via MOD. One element (XP_[E]) of the argument structure (□) is selected by the *member* relation. If *nackt* is combined with *sehen*, *member* provides both the subject and the object of *sehen*. The element returned by *member* is coindexed with the subject of the depictive predicate which is also linked to the theme role of *nackt*. The semantic contribution of the modified head (□) is combined with the semantic contribution of the depictive predicate (*nackt*(□)). This incorporation of the meaning of the modified head into the adjunct is the standard treatment of semantics in head-adjunct structures, which was also used in Chapter 1.7.

After this explanation of an example, I now explain the other details of the rule in (454): Since the input specification of the lexical rule in (454) requires a subject, subjectless predicates like, for instance, the subjectless version of the adjective *kalt* as used in (458), cannot be input to the rule.

(458) Ihm ist kalt.
him-DAT is cold
'He is cold.'

The specification of the subject as referential rules out expletive predicates as input.³⁶ (459b) means that the rain is cold, not that it is cold in general. It may be cold rain in warm weather. The predicate *kalt* cannot refer to the expletive nominal complement of *regnen*.

³⁶Note that the *es* in (459a) is ambiguous between a referential and an expletive *es*. Only the expletive reading matters here.

- (459) a. Es ist kalt.
it-EXPL is cold
- b. ?Es regnet kalt.
it-EXPL rains cold

The condition on referentiality cannot be imposed on the subject of the verb that is modified since verbs with expletive subjects allow for depictives if the depictives do not refer to the expletive element:

- (460) Es trug ihn unangeschnallt aus der Kurve.
it-EXPL carried him not.seat.belt.fastened out the curve
'He was carried out of the bend without having his seatbelt on.'

The item at the left hand side of the *member*-relation is specified as an XP in (454). Therefore the rule admits the predication of depictives over subjects, direct and indirect objects, and genitive objects. It also allows complement PPs to occur as antecedents of depictives since complement PPs have a CONT value of the type *nom-obj*, i.e., the preposition does not contribute to the meaning of the PP and the meaning of the complement PP is identical to the meaning of the NP contained in it (Pollard and Sag, 1994, p. 255, p. 347). We therefore can refer to the index of the NP inside of the PP by referring to the index of the PP. That examples of reference to PPs and genitive objects are hardly acceptable can be explained by their low accessibility on the scale. In order to capture this formally, one has to introduce some means for expressing the markedness of analyses into the HPSG formalism. While such means are not discussed in the linguistic literature, they are used in practical systems for processing HPSG grammars. In the HPSG grammar that was developed in the *Verbmobil* project (Müller and Kasper, 2000), numeric preference values are assigned to lexical entries. A more elaborated system of preference marking in an LFG grammar is described in Frank, King, Kuhn, and Maxwell, 2001. Such a preference mechanism can be integrated in the relation that picks an antecedent from the argument structure of the modified verb. The actual preference values which have to reflect the gradedness of the different possibilities can be determined experimentally using an experimental procedure described, for instance, in Keller, 2000.

The coindexing analysis that has been developed here has interesting consequences for the overall architecture of the grammar. As Kaufmann (1995a, p. 87–88) observed, the coindexation approach enforces the modification of lexical predicates if one assumes that the argument structure is represented only at lexical items. This is unproblematic for grammars with flat dominance structures for the German clause, but with binary branching structures it is not trivial to establish the coindexing. Figure 16 on the following page shows the standard analysis for (461) with binary branching dominance structures.

- (461) weil er nackt der Frau hilft.
 because he naked the woman helps
 ‘because he helps the woman naked.’

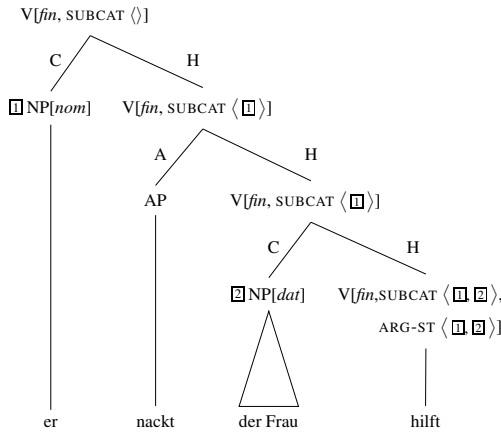


FIGURE 16 Binary Branching Structures and Depictive Predicates (Continuous)

In (461), *nackt* modifies the projection *der Frau hilft*, which is non-lexical and does not contain the argument structure. It is not possible to establish the coindexing by accessing the semantic contribution of *hilft*, which is, of course, contained in *der Frau hilft* since *helfen* may be embedded under a modal or AcI verb:

- (462) weil sie ihn nackt der Frau helfen sieht.
 because she him naked the woman help sees
 ‘because she sees him help the woman naked.’

sie, *ihn*, and *der Frau* are dependents of the verbal complex *helfen sieht*, but as was argued in Chapter 2.1.6.4, neither *ihn* nor *der Frau* is a semantic argument of the *sehen* relation and hence the coindexing cannot be established with reference to the arguments of the highest predicate in the representation of (462). Note that it does not help to allow searching representations like *sehen(sie,helfen(er,Frau))* recursively for antecedents since this would be too unconstrained. To see this consider (463):

- (463) Er behauptete nackt, daß der Räuber seine Sachen gestohlen hat.
 he claimed naked that the robber his clothes stolen has
 ‘He claimed naked that the robber stole his clothes.’

The representation of the main predication is given in (464).

- (464) behaupten(er,stehlen(Räuber,Sachen))

While this is similar to the representation for (462), the structure of the sentences differs: (462) is a coherent construction in which *nackt* may scope over *helfen* or *sehen*. In (463), on the other hand, we have a biclausal structure where *nackt* belongs to the matrix clause and therefore can scope over the matrix predicate only. While in (462) the reference to embedded predicates has to be allowed, it would have to be ruled out for sentences like (463).

To solve the problem of the accessibility of the argument structure in binary branching structures, one could project the argument structure. Kiss (2001) and others suggest making ARG-ST a head feature.³⁷ The problem with the projection of the argument structure is that it is incompatible with the standard approach to coordination in HPSG suggested by Pollard and Sag (1994, p. 202). In the standard treatment of coordination, it is assumed that the CAT values of two coordinated elements have to be identical. If we have coordinations of sentences that have ARG-ST lists of differing length, coordination fails, which does not reflect the empirical situation. Consider, for instance, the example in (465). Since the elements in the ARG-ST lists of *sleeps* and *washes* are still present in the maximal projections, coordination fails because these lists differ in length.

(465) The woman sleeps and the man washes the dishes.

The situation is even worse: (466), which contains two verbs with the same arity, cannot be analyzed either since the projected ARG-ST list also contains semantic information and this information must not be identified (dog \neq zebra).

(466) The man beats the dog and the child kicks the zebra.

So, if we wanted to project the argument structure, this would have to happen outside of the features the values of which are identified in coordination structures, i. e. outside of CAT. Apart from the coordination problem, the projection of the complete argument structure violates the HPSG conception of locality since the internal structure of a maximal projection could be selected by governing heads.

Another possibility to overcome the problem of the accessibility of the argument structure is to treat adjuncts as complements and introduce them into the SUBCAT list of the head they modify (van Noord and Bouma, 1994). Since then modification is treated in the lexicon, the combination of depictives and the predicates they modify can be established before argument saturation takes place. This approach, which will be discussed in detail in Section 4.3, is also problematic. Instead, I will suggest an alternative here that builds on earlier work on adjuncts. In Müller, 1999a, Chapter 17.6, I assumed for independent reasons that adverbials modify lexical elements or quasi-lexical elements, like verbal complexes. The lexical rule in (454) is set up accordingly. The analysis of (461) is shown in Figure 17 on the next page. Since depictive predicates may be iterated, the argument structure must be present at the mother node in head-adjunct structures.

³⁷See also Przepiórkowski (2001) for an analysis in which the argument structure of certain words gets projected.

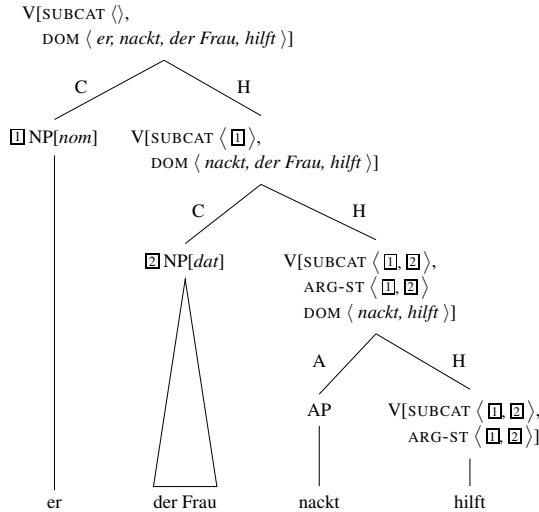


FIGURE 17 Binary Branching Structures and Depictive Predicates (Discontinuous)

Adjunction does not change the status of heads as far as lexicity is concerned. See also Footnote 73 on page 87 for similar assumptions in systems that use MIN/MAX features to describe projection levels.

There are some more things to notice about the lexical rule (454): Since adjectival forms that are derived from verbs are also categorized as verbal elements, phrases like (467) can be analyzed.

- (467) a. roh gegessenes Obst
 raw eaten fruits
 ‘fruits that are/were eaten raw’
 b. die nackt schlafende Frau
 the naked sleeping woman
 ‘the woman who sleeps naked’

Instead of using a binary feature VERBAL for distinguishing between verbal and non-verbal heads, one could of course refer to the type of the semantic contribution of the modified verb or adjectival participle.

The linearization rule in (468) expresses the preference for depictives to be ordered after their antecedent element.

$$(468) \text{ COMP } XP_{[1]} < AP/PP[\text{SUBJ} \langle NP_{[2]} \rangle] \wedge [1] = [2]$$

Like other ordering rules that affect the elements in the *Mittelfeld*, it is a preference rule only. The less such weighted rules are violated, the better a sentence is (Uszkoreit, 1987, Chapter 5).

The rule cannot test for the unification of the index of the depictive since otherwise no phrase with a compatible index could be positioned after the depictive. Sentences like (469) would be ruled out.

- (469) weil sie nackt die Frau sah.
 because she naked the woman saw
 ‘because she saw the woman naked.’

Rather, an identity test of the two indices has to be made. The structure sharing of the indices is established by the modification and the *member* relation that is attached to the lexical item for the depictive predicate. The structure sharing must not be established by linearization rules via unification.

The examples in (440), in which the depictive predicate is located in the *Vorfeld*, are not affected by this linearization rule, as the elements in the *Vorfeld* are fillers and not arguments. The rule applies only to arguments in head-argument structures..

Before I turn to alternative analyses in the next section, I want to make some remarks on interesting coordination data presented by Plank (1985, p. 163). Plank’s coordination examples in (434)—repeated here as (470)—are explained by the coordination theory of Pollard and Sag (1994, p. 202) that assumes that CAT values of conjuncts are shared.

- (470) a. Der Gast trank das Bier stehend lauwarm.
 the guest drank the beer standing lukewarm
 ‘The guest drank the beer lukewarm standing up.’
 b. * Der Gast trank das Bier stehend und lauwarm.

The sharing of CAT values entails that the SUBJ values of the coordinated adjectives, which are located under HEAD, are shared and therefore depictive predicates that are coordinated must have the same antecedent.

4.3 Alternatives

An alternative to the analysis suggested in this chapter is to handle depictives as complements and use a lexical rule that introduces depictive predicates into SUBCAT lists. Van Noord and Bouma (1994) suggest introducing all adjuncts in the lexicon. They suggest a lexical rule that is similar to the lexical rule in (471). This rule does modification ‘in the lexicon’.³⁸ A modifier is introduced into the

³⁸Dowty (1979, Chapter 5.8.1) discusses a similar analysis for the internal reading of (i) in his decomposition approach.

- (i) John opens the door again.

He introduces an additional lexical entry for *open* with the semantics in (ii), where *S* gets instantiated by *again*.

- (ii) *cause(become(S(open)))*

He dismisses this proposal in favor of one with an ambiguous adverb (p. 267).

(471) Adjunct Introduction Lexical Rule:

$$\left[\begin{array}{c} \text{SYNSEM|LOC} \\ \left[\begin{array}{c} \text{CAT} \\ \left[\begin{array}{c} \text{HEAD} \quad \boxed{1} \\ \text{SUBCAT} \quad \boxed{2} \oplus \boxed{3} \end{array} \right] \\ \text{CONT} \quad \boxed{4} \end{array} \right] \end{array} \right] \mapsto$$

$$\left[\begin{array}{c} \text{SYNSEM|LOC} \\ \left[\begin{array}{c} \text{CAT|SUBCAT} \quad \boxed{2} \oplus \left\langle \begin{array}{c} \text{LOC} \\ \left[\begin{array}{c} \text{CAT} \\ \left[\begin{array}{c} \text{H} \\ \left[\begin{array}{c} \text{MOD|L} \\ \left[\begin{array}{c} \text{CAT|H} \quad \boxed{1} \\ \text{CONT} \quad \boxed{4} \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right] \oplus \boxed{3} \end{array} \right]$$

SUBCAT frame of the head. At the same time, the semantic contribution of the head is changed in a way that reflects the semantic contribution that one would obtain after a combination of an adjunct and a head in syntax ($\boxed{5}$). Such a lexical rule renders the Head-Adjunct Schema superfluous. To see how this rule works, consider (472). The rule in (471) applies to *singen*. The rule licenses a new lexical item for *singen* that contains an adjunct in its SUBCAT list. The semantic contribution of this adjunct is taken over to be the semantic contribution of the complete lexical item.

- (472) Karl singt dieses Lied oft.
 Karl sings this song often
 'Karl often sings this song.'

In (472), *oft* would be a complement of *singen* and the meaning of *oft singen* would already be represented in *singt* in an underspecified way, and would get instantiated by the adverbial complement of *singen* with the predicate *oft*.

There are several problematic aspects of this treatment which will be discussed in the following subsections.

4.3.1 Permutation in the *Mittelfeld*

All accounts that represent adjuncts in valency lists have the problem that scope interactions between adjuncts cannot be explained easily. To see this consider the example in (473). The reordering of NPs in (473a) does not change the core meaning of the sentence.

- (473) a. weil der Mann der Frau das Buch gibt.
 because the man-NOM the woman-DAT the book-ACC gives
 'because the man gives the woman the book.'
 b. weil der Mann das Buch der Frau gibt.
 because the man-NOM the book-ACC the woman-DAT gives

However, if we permute the adverbs in (474a), the meaning of the sentence changes.

- (474) a. weil Hans oft nicht lacht.
 because Hans often not laughs
 ‘because Hans often does not laugh.’
 b. weil Hans nicht oft lacht.
 because Hans not often laughs
 ‘because Hans does not laugh often.’

The meaning of (474a) is given in (475a) and the one of (474b) in (475b):

- (475) a. oft(\neg lachen(Hans))
 b. \neg oft(lachen(Hans))

Both formulae in (475) can be derived with appropriate lexical entries for both (474a) and (474b). For instance, (474a) can get an analysis with the meaning in (475a) in an analysis that uses the lexical item that subcategorizes for the two adjuncts. But (474b) can also be derived if the lexical item that is needed for (474b) is used and the adjuncts are permuted like other elements on the SUBCAT list, as for instance the NPs in (473) are. The permutation of adjuncts cannot be prohibited in general since genuine subcategorized adjuncts can be permuted without change in meaning, as (476) shows.³⁹

- (476) weil in solch einem Fünf-Sterne-Hotel keine Sau wohnen will.
 because in such a five.star.hotel no sow live wants.to
 ‘because not a soul wants to live in such a five star hotel.’

If one uses a schema for head-adjunct structures, a linearization rule can be used together with this schema. But with the lexical rule in (471) one cannot tell apart adjuncts that are truly subcategorized from those that were introduced by the rule. This means that we have to change the rule in (471) in such a way that newly introduced adjuncts are marked for being not permutable. This is a rather unwanted consequence since it implies that we have a fixed order with regard to a subpart of elements in the valence list. There are subcategorized elements that have a relatively fixed position, but this fixed position is relative to the head of the element and not to other elements that depend on other heads.

4.3.2 Coordination

As Robert Levine pointed out at the HPSG 2000 conference in Berkeley, the following sentence is even more problematic for the adjuncts-as-complements analysis.⁴⁰

³⁹See for instance Steinitz, 1969, Chapter 2 and Kaufmann, 1995a, p. 119 on the status of the PP dependent of *wohnen* (‘to live’).

⁴⁰Levine’s example is also discussed in Cipollone, 2000.

- (477) John came in, found a chair, sat down, and pulled off his logging boots in exactly thirty seconds flat.

The problem that such sentences pose for adjuncts-as-complements analyses is that the adjunct phrase *in exactly thirty seconds flat* scopes over the coordinated VPs. With a lexical rule like (471), the adjunct semantics is combined with the meaning of the verb in the lexicon. It is easy to get an analysis for (477) in which the adjunct scopes over the last conjunct: This is the normal VP modification with the structure in (478).

- (478) John came in, found a chair, sat down, and [pulled off his logging boots in exactly thirty seconds flat].

However, this is not the intended reading of (477). To get the intended reading one could assume that the sentence in (477) is an instance of Right Node Raising where the adjunct is extracted, but then the adjunct has scope over each individual verb, which is also not the right reading. Alternatively, one could assume that the conjuncts are coordinated unsaturated sharing their last ‘complement’, namely the adjunct. But again, this would yield a meaning where the adjunct scopes over each verb separately. In fact one would not even get an analysis since the HEAD|MOD values of the three lexically introduced adjuncts differ and therefore the SUBCAT values of the three verbs are incompatible and the three verbs cannot be coordinated.⁴¹ The only way that seems to yield the right reading is to first build the coordination *came in, found a chair, sat down, and pulled off his logging boots* and then attach the adjunct in a head-adjunct relation. The adjunct then has scope over the whole coordination.

The following example shows that an analysis that suggests a lexical introduction of depictive secondary predicates faces the same problems:⁴²

- (479) The professor drove to the university, held a lecture and met with his doctoral students stoned (the whole time).⁴³

The depictive predicate *stoned* predicates over the subject of the three coordinated verb phrases.

It is clear that it is not trivial to account for sentences like (479) in an argument structure-based approach. To make a coindexing possible, one has to assume that the coordination structure has an argument structure. Coordinated structures could be analyzed as complex heads whose argument structure contains all arguments that depend on all conjuncts.⁴⁴ In the case of (479), this argument structure con-

⁴¹In an MRS-based analysis the three events of the three verbs get unified which should be blocked by the grammar. On Minimal Recursion Semantics (MRS) see Copestake, Flickinger, and Sag, 1999.

⁴²For instance, Wunderlich (1997a) suggests treating object oriented depictive predicates as lexically introduced V-adjuncts.

⁴³Thanks to Andrew McIntyre for this example.

⁴⁴See also footnote 74 on page 87 and the discussion of (248) on page 111 for the value of the LEX feature in coordinated structures.

tains the subject and, in the case of (480), it contains both the subject and the object:

- (480) Der Rettungsschwimmer sah und rettete die Frau erst halbtot.
 the lifeguard saw and saved the woman only half.dead

After this rather speculative remark about the analysis of depictives and coordination, I summarize this chapter in the following section.

4.4 Summary

In this chapter, an analysis for depictive predicates has been developed that treats depictives as adjuncts. The subject of these adjuncts is coindexed with one element in the argument structure of the verbal element that is modified by the depictive predicate. Since the depictive refers to the argument structure and not to valence lists, it can be explained why depictives can refer to elements that do not appear at the surface. As I have shown, depictive predicates may refer to subjects, direct objects, and more oblique arguments. The reference to oblique arguments is more marked than the reference to direct objects and subjects. This corresponds to the obliqueness hierarchy, the influence of which can also be observed in other parts of the grammar.

Resultative Secondary Predicates

In this chapter, I will discuss resultative predicate constructions. I will show that they have properties similar to the subject and object predicative constructions that were discussed in Chapter 2. I suggest a lexical rule that licenses for each intransitive verb another lexical item that takes a secondary predicate as complement and forms a predicate complex. The resultative component in the meaning of resultative predicate constructions is contributed by the lexical rule.

5.1 The Phenomena

Resultative predicates usually describe the result of an event that is expressed by the main verb.

- (481) a. Sie streicht die Tür schwarz.
 she paints the door black
 b. Er schneidet die Wurst in Scheiben.
 he cuts the sausage into slices

But there are also resultative constructions with certain verbs, where the result is only claimed to be true. The combinations *gesundlügen*, *krank schreiben*, and *klein reden* in (482) are examples of such constructions.

- (482) a. Die Beurteilungskriterien seien so festgelegt, daß mit ihnen der
 the judgment.criteria be so set that with them the
 Wald „gesundgelogen“ werde.¹
 woods healthy.lied get
 ‘The judgment criteria had been formulated in such a way that they
 made the woods appear healthy.’
 b. „Diese Partei ist von der Presse krankgeschrieben worden. Sie ist
 this party is by the press ill.written got she is

¹taz, 08.12.1994, p. 7.

gesund.“²

well

‘The press gave this party a sickly image. But it is in the best of health.’

- c. sein Trick ist eher, Details des Holocaust anzuzweifeln, gezielt
his trick is rather details of.the holocaust at.to.doubt aimed
klein zu reden und so den Massenmord zum Verschwinden zu
small to talk and so the mass-murder to.the disappearance to
bringen.³
bring

‘What his trick is, is to question details about the holocaust, to pointedly make them appear insignificant, and hence to make the mass-murder disappear.’

The resultative predicate can be expressed by an adjective (481a) or a PP (481b). According to Maienborn (1994), constructions with a directional PP like (483) have to be analyzed differently from resultative constructions:

- (483) a. Der FC St. Pauli fegt Bayer Uerdingen mit 3:0 vom
the soccer.team St. Pauli sweeps Bayer Uerdingen with 3:0 from.the
Platz.
place
‘The FC St. Pauli sweeps Bayer Uerdingen from its place with a 3:0 score.’
b. Herbert Wehner konnte die Leute an die Wand schweigen.
Herbert Wehner could the people to the wall silence
‘Herbert Wehner could terrorize people by remaining silent.’
c. Der Bankräuber konnte sich über die Grenze retten.
the bank.robber could self over the border save
‘The bank robber could escape over the border.’

Directional PPs do not appear in copula constructions, i. e. in primary predication, like adjectives and locative PPs do. In Maienborn’s analysis, non-local verbs in (483) are reinterpreted as movement verbs. I assume the syntax of this construction to be similar to the one of resultative constructions that will be discussed in this chapter.

Nominal predicates are restricted in English and impossible in German:

- (484) a. He sprayed his new car a brilliant shade of green.⁴
b. * Er sprühte sein Auto einen schönen leuchtenden Grünton.

²taz, 31.10.1988, p. 5.

³taz, 04.12.2000, p. 3.

⁴Rothstein, 1985, p. 81.

In the following subsections, I investigate resultative constructions in which the primary predicate does not assign a semantic role to the accusative NP. After having done this, I will discuss English data that was used to show that transitive verbs form resultative constructions that differ from the resultative constructions that are formed with intransitive verbs. I examine expletive predicates in resultative constructions and then turn to passive examples that show that resultative constructions involving unergative verbs may be passivized, which suggests a treatment of the subject of the resultative predicate as object of the primary predicate. One of the following subsections is devoted to unaccusative verbs in resultative constructions. As I will show, there is a clear difference between unergative and unaccusative predicates and hence resultative constructions can be used to classify predicates with regard to their unaccusativity. The constituent order tests that have been used in Chapter 2.1.2 to distinguish between verbs that allow incoherent constructions and verbs that construct only incoherently are applied to resultative constructions and the possibility of iterating resultative predicates is examined.

5.1.1 Non-Selected Accusatives

The examples in (485) and (486) show intransitive verbs in resultative constructions.⁵ The verb does not assign a semantic role to the accusative NP in these sentences. The accusative is the logical subject of the resultative predicate.

- (485) a. Die Jogger liefen den Rasen platt. ↗ Die Jogger liefen den Rasen.
 the joggers run the lawn flat the joggers run the lawn
 b. Es regnete die Stühle naß. ↗ Es regnete die Stühle.
 it rained the chairs wet it rained the chairs
- (486) a. Stunden später sind meine Füße plattgelaufen, [...] ⁶
 hours later are my feet flat.run
 ‘Hours later my feet are sore from walking, [...]’
 b. Das Unternehmen hatte sich schon zu Apartheid-Zeiten mit dem
 the company had self already to apartheid.times with the
 Bau von „Matchbox-Häusern“ hervorgetan – viele wurden in
 build of matchbox.houses distinguished many got in
 Kapstadt vor einigen Wochen schlichtweg plattgeblasen, als
 Cape Town before few weeks simply flat-blown as
 ein heftiger Sturm die Gegend heimsuchte. ^{7,8}
 a hefty storm the area home.looked
 ‘The company had already made its name as an expert matchbox

⁵The examples in (485) are taken from Wunderlich, 1995, p. 455.

⁶taz, 01.02.1999, p. 9.

⁷taz, 08.09.1994, p. 3.

⁸Note that examples like (486b) and (485b) show that the subject of a verb in a resultative construction may be inanimate or even a weather *es*.

house builder in apartheid times, many of these were simply blown away during a heavy storm that struck the area a few weeks ago.'

The examples in (487) and (488) are examples of resultative constructions with optionally transitive verbs. The examples show that the accusative NP in such constructions is not necessarily the object that is selected by the main verb.⁹

- (487) Die Gäste tranken den Weinkeller leer. ↗ Die Gäste tranken den
the guests drank the wine.cellar empty the guests drank the
Weinkeller.¹⁰
wine.cellar
- (488) a. Heute verzichten die Hooligans vor und beim Fußballspiel
today abstain the hooligans before and during.the football.game
auf Alkohol und trinken erst nach dem Spiel ganze Kneipen leer.¹¹
on alcohol and drink first after the game whole pubs empty
'Nowadays the hooligans abstain from drinking before and during
football games and only drink the pubs dry after the game.'
- b. Erinnern Sie sich an A Fish Called Wanda, wo genußvoll ein
remember you self at A Fish Called Wanda where gleefully a
Hündchen nach dem anderen plattgefahren wurde?¹²
little.doggy after the other flat.driven got
'Do you remember when in A Fish Called Wanda one little doggy
after another was gleefully run over?'
- c. Ihre Artillerie hatte von den umliegenden Bergen die Stadt
their artillery had from the surrounding mountains the town
sturmreif geschossen.¹³
storm.ripe shot
'From the surrounding mountains their artillery held the town under
gunfire until it was ready to be attacked.'

The pubs in (488a) are not the object of *trinken* ('drink') and neither are the dogs an object of *fahren* ('drive') in (488b). The verb *schießen* ('shoot') in (488c) cannot be used with a town as direct object. If one refers to a process like the one in (488c) without expressing a result, the verb *beschießen* ('to shoot at', 'to bombard') has to be used.

⁹Note that the fact that the adjective and the base verb are spelled as one word in (488b) is just an orthographic convention. In cases where the resultative predicate is a PP, the PP and the primary predicate are spelled separately. With longer adjectives, as in (488c), the adjective and the verb are spelled as two words.

¹⁰Wunderlich, 1995, p. 455.

¹¹Mannheimer Morgen, 16.07.1998, Politik; Kanther sagt Hooligans den Kampf an.

¹²taz, bremen, 03.03.1990, p. 27.

¹³taz, 07.15.1995, p. 11.

As was noted by Oppenrieder (1991, p. 112), the object of the main verb cannot be realized in addition to the accusative that is licensed by the resultative predicate:

- (489) * Die Gäste tranken den Wein den Weinkeller leer.
 the guests drank the wine the wine.cellar empty

Having shown that both intransitive and transitive verbs may enter resultative constructions without assigning the accusative object a semantic role, I now turn to the interpretation of the accusative in such constructions.

5.1.2 The Interpretation of the Accusative and Fake Reflexives

When the event that is described by the base verb affects the referent that is expressed by the subject of the base verb, a reflexive pronoun can be used to indicate the coreference. Simpson (1983, p. 145) called these reflexive pronouns *fake reflexives*. As the data to be discussed below show, in German these reflexives are normal pronouns that in many cases can be replaced by non-reflexives.

The examples in (490) are resultative constructions with an intransitive verb. The reflexive pronoun in (490a) is not an argument of the base verb. It is the NP the resultative predicate predicates over, and it is coindexed with the subject of the base verb because of general constraints on pronoun binding. In (490b) a full referential NP is used instead of the reflexive pronoun.

- (490) a. Er läuft sich müde.
 he runs self tired
 ‘He runs himself tired.’
 b. Überfordert war Alba aber auch mit der Bewachung des
 overtaxed was Alba but also with the guarding of.the
 großartigen Spielermachers Tyus Edney, der Bogojevic und Rödl
 wonderful game-maker Tyus Edney who Bogojevic and Rödl
 müde lief und mit 16 Punkten, 7 Assists und 4 Rebounds glänzte.¹⁴
 tired ran and with 16 points, 7 assists and 4 rebounds shone
 ‘But it was also too much for Alba to mark the great player Tyus
 Edney; neither Bogojevic nor Rödl could keep up with him, and he
 achieved the outstanding result of 16 points, 7 assists and 4 rebounds.’
 (Literally: ‘He run Bogojevic and Rödl tired.’)

The sentence in (490b) is possible since the running of one player causes the other players to run too, and their own running makes them tired. Following the same pattern, resultatives are possible with a lot of verbs without reflexivization. A constructed example is shown in (491).

- (491) a. Er arbeitete sich müde.
 he worked self tired
 ‘He works himself tired.’

¹⁴taz, 01.08.2000, p. 22.

- b. Er arbeitete ihn müde.
he worked him tired

If a working process is organized in a way that one person depends on the output of another person, the latter's fast work can result in more work for the first person and the first person can get tired by this.

In some constructions, a reflexivization is obligatory due to the meaning of the involved elements. In sentences like (492), the reflexive is obligatory.

- (492) daß sich ein Mensch in Haft zu Tode hungere¹⁵
that self a person in prison to death starves
'that a human being starves themselves to death in prison.'

A context in which the starving of one person causes another one to die is hardly imaginable.

Following Wunderlich (1995, p. 460; 1997a, p. 123), I assume that the grammar should assign sentences like (493) an underspecified semantics, the actual instantiation of which is determined by the context. So, (493) can mean that he drove a car and ruined the very same car by bad driving.

- (493) Er fuhr das Auto kaputt.
he drove the car broken
'He drove the car to a wreck.'

But it can also mean that he rode a bicycle and crashed into a car. (494) shows a corpus example illustrating the possibility of this reading:

- (494) Die Gutachter hatten außerdem festgestellt: Armando O. war mit
the experts had apart.from.that established: Armando O. was with
mindestens 91km/h auf das Auto aufgefahren und hatte seinen LKW
at.least 91km/hr on the car on-driven and had his truck
auch nicht gebremst, bevor er den Kleinbus regelrecht plattgefahren
also not braked before he the minibus actually flat-driven
hatte.¹⁶
had.

'The experts had also established: Armando O. had crashed into the car at a speed of at least 91km/hr and had still not applied the brakes before completely crushing the minibus.'

The driver of the truck (*LKW*) did not brake, continued to drive, and finally flattened the minibus. In the reading one gets for (494), the verb *fahren* does not assign a semantic role to *Kleinbus*. A raising analysis where the subject of the adjective *platt* is raised to the object of *fahren*, and hence does not get assigned a semantic role by *fahren*, is appropriate here.

¹⁵Mannheimer Morgen, 04.10.1989, Politik; Suche nach Lösung beim RAF-Hungerstreik.

¹⁶taz, bremen, 05.25.1993, p. 24.

In analogy to the perception verb examples that were discussed in Chapter 2.1.6.4 on pages 63–64, I assume that (493) is analyzed as a raising construction even when the car is actually the object of drive.¹⁷ So, in contrast to Simpson (1983) and other authors, who assume a raising and a control analysis for respective types of resultative constructions, I follow Oppenrieder (1991, p. 116) and Wunderlich (1995), who assume one unified analysis for both kinds of resultative constructions, namely a raising analysis.

As already mentioned, Oppenrieder (1991, p. 116) treats resultative constructions in German as derived from intransitive verbs or from intransitive versions of verbs with more complements. Wunderlich (1995, 1997a) also assumes such an analysis and supports his claim by providing examples that show that German behaves differently from English and that such an analysis is indeed justified for German. The English data will be discussed in the following sections.

5.1.3 Resultatives with Transitive Verbs

Carrier and Randall (1992) discuss a broad variety of phenomena and show that resultatives from intransitive and transitive verbs behave differently. The verbs in (495) obligatorily select an object.

- (495) a. The bears frightened *(the hikers).
 b. The baby shattered *(the porringer).
 c. The magician hypnotized *(the volunteers).

They can appear in resultative constructions like (496), but they cannot appear in resultative constructions like (497).

- (496) a. The bears frightened the hikers speechless.
 b. The baby shattered the porringer into pieces.
 c. The magician hypnotized the volunteers into a trance.
- (497) a. * The bears frightened the campground empty.
 b. * The baby shattered the oatmeal into portions.
 c. * The magician hypnotized the auditorium quiet.

Carrier and Randall explain this by the fact that the selectional restrictions of the main verbs are violated. The verbs cannot be used in sentences like (498).

- (498) a. * The bears frightened the campground.
 b. * The baby shattered the oatmeal.
 c. * The magician hypnotized the auditorium.

¹⁷See also Hoekstra, 1988, p. 118 for the claim that the interpretation of the subject of the resultative predicate as the object of the main predicate is a shadow interpretation similar to those with perception verbs.

If the transitive verb assigns its normal object role to the subject of the resultative subject and hence imposes its selectional restrictions on this NP, examples like (498) are ruled out.

Note that Carrier and Randall's judgments are not uncontroversial. For instance, McIntyre (2001a) points out that certain metaphorical examples like the one in (499) allow the suppression of the direct object:

(499) They frightened the daylights out of the campers.

Now consider the following German examples from Wunderlich (1995, p. 460):

- (500) a. * Die Bären erschreckten die Wanderer sprachlos.
 the bears frightened the hikers speechless
 b. * Sie beruhigte das Kind still / zum Schlafen.
 she calmed the child down to sleep

The resultative constructions are not possible at all with these verbs. This is explained by Oppenrieder's and Wunderlich's assumption that only intransitive (forms of) verbs can be used in resultative constructions.

This assumption is further supported by inherently reflexive verbs like those in (501). As Oppenrieder (1991, p. 133) notes, inherently reflexive verbs cannot appear in resultative constructions since the reflexive pronoun is obligatory and hence they do not have intransitive versions.¹⁸

- (501) * Karl erholt sich ausgeruht / gesund.
 Karl relaxes self rested healthy
 Intended: 'As a result of relaxing Karl gets rested / healthy.'

¹⁸In sentences like (i) the adjectival phrase is a depictive.

- (i) Karin Clement, 57, freute sich schier zu Tränen gerührt über eine Bemerkung ihres
 Karin Clement 57 was.pleased self sheer to tears moved about a remark of.her
 Ehemanns [...] (Spiegel, 19/2000, p. 280)
 husband

Sentences like (ii.a) are possible, but they are idiomatic as (ii.b) shows.

- (ii) a. Er freute sich dumm und dusselig über das Buch.
 he pleased himself stupid and daft over the book
 'He was pleased as punch about the book.'
 b. * Er freute sich dumm (über das Buch).
 he pleased himself stupid about the book

Kunze (1997, p. 135) discusses the example in (iii).

- (iii) Du solltest dich in Grund und Boden / zu Tode schämen.
 you should yourself in ground and ground to death shame
 'You ought to be utterly ashamed.'

According to him, this pattern is also lexicalized.

5.1.4 The Middle Construction

Another test that was applied by Carrier and Randall (1992) was the formation of the middle construction. According to them, transitive base verbs allow for middles (502), intransitives do not (503).¹⁹

- (502) a. NP water the new seedlings flat.
 b. New seedlings water flat (easily).
 c. NP won't scrub my socks clean.
 d. My socks won't scrub clean (easily).
 e. NP iron permanent press napkins flat.
 f. Permanent press napkins iron flat (easily).
- (503) a. NP run competition shoes threadbare.
 b. *Competition shoes run threadbare (easily).
 c. NP talk Phys Ed majors into a stupor.
 d. *Phys Ed majors talk into a stupor (easily).
 e. NP walk delicate feet to pieces.
 f. *Delicate feet walk to pieces (easily).

Goldberg (1991, p. 72; 1995, p. 185) examines the middle construction more thoroughly. She argues that the middle construction requires the unexpressed agent to be volitional and that middles are excluded for resultative constructions with a fake object since these resultative constructions are often used to express a negative outcome. With an appropriate context middles are fine:

- (504) a. He drove fifty tires bald.
 b. Go buy some cheap tires for that scene, those inexpensive tires drive bald really quickly.

Wunderlich (1995, p. 455) gives the following German examples:²⁰

- (505) a. Der Weinkeller trinkt sich schnell leer.
 the wine.cellar drinks self fast empty
 'What's in the wine cellar is drunk quickly.'
 b. Der Rasen läuft sich leicht platt.
 the lawn runs self easily flat
 'The lawn is easily trampled.'
 c. Die Stühle regnen leicht naß.
 the chairs rain easily wet
 'The chairs are easily soaked by the rain.'

¹⁹See also Wilder 1991, p. 228; 1994, p. 233 for such a claim.

²⁰See also Koch and Rosengren (1995, p. 17) for similar data.

So Goldberg's data show that Carrier and Randall's claim is not correct for English and Wunderlich's examples show that it is not correct to assume constraints that rule out middles with resultative constructions of intransitive verbs for German.

5.1.5 Adjectival Participles

The next thing Carrier and Randall examined was adjectival participles. According to them, adjectival participles are impossible with resultative constructions with intransitive verbs (506), but they are possible with transitive verbs (507).

- (506) a. * the danced-thin soles
 b. * the run-threadbare shoes
 c. * the crowed-awake children
 d. * the talked unconscious audience
- (507) a. the stomped-flat grapes
 b. the spun-dry sheets
 c. the scrubbed-clean socks

Again, this contrast does not hold for German. The sentences in (508) show examples in which the modified noun does not fill a semantic role of the base verb of the resultative construction.²¹

- (508) a. Er ernährt sich von *plattgefahrenen Tieren* [...] ²²
 he feeds himself from flat-driven animals
 'His diet consists of run-over animals.'
- b. Die Folge: *plattgefahrene Reifen*, Nothalt. ²³
 the result: flat-driven tires emergency.stop
 'The result: bald tires, emergency stop.'
- c. mit durch nichts zu rechtfertigendem Schmunzeln sah er an ihrem Hinterkopf eine *plattgelegene Stelle* in ihrem Haar, das sie größtenteils vergeblich darüber gekämmt hatte. ²⁴
 'with an unjustifiable grin he observed that there was a flat patch of hair at the back of her head that she had attempted to comb over, without much success.'

So again one of the criteria that have been proposed to distinguish resultative constructions involving intransitive from those that involve transitive verbs cannot be used for German.

²¹Winkler (1997, p. 421) suggests in a footnote that such examples seem to be possible in German. She provides a slightly marked example with a fake reflexive resultative construction. The sentences in (508) are not marked.

²²taz, 11.01.1997, p. 14.

²³Mannheimer Morgen, 7.06.1991, Lokales; sind es oft die kleinen Freuden des

²⁴taz bremen, 01.03.1994, p. 24, tageszeitungs-Roman, part V.

5.1.6 Nominalizations

The last phenomenon that was examined by Carrier and Randall is result nominals. According to them, result nominals are possible with transitive verbs (509), but impossible with intransitive verbs (510).²⁵

- (509) a. The watering of the tulips flat is a criminal offense in Holland.
 b. The slicing of cheese into thin wedges is the current rage.
 c. The painting of fire engines the color of school buses is strictly prohibited by state law.
 d. The Surgeon General warns against the cooking of food black.
- (510) a. *The drinking of oneself sick is a commonplace in one's freshman year.
 b. *The talking of your confident silly is a bad idea.
 c. *What Christmas shopping means to me is the walking of my feet to pieces.
 d. *The jogging craze has resulted in the running of a lot of pairs of shoes threadbare.

The German example in (511) shows that nominalizations are possible even in cases where the object of the resultative construction is not a subcategorized argument of the base verb.

- (511) Die EU will zwar wegen der *Leerfischung* der Nordsee die
 the EU wants because.of the empty.fishing of.the North.Sea the
 Speisefischflotten um 40 Prozent reduzieren, [...] ²⁶
 edible.fish.fleets by 40 percent reduce
 'Although the EU wants to reduce the fleets fishing for edible fish by 40 %
 because of over-fishing in the North Sea, ...'

(511) is the nominalization of the resultative construction in (512a).

- (512) a. Sie fischen die Nordsee leer.
 they fish the North.Sea empty
 b. *Sie fischen die Nordsee.
 they fish the North.Sea

(512b) shows that the NP *die Nordsee* is not an argument of *fischen*. Although the NP *die Nordsee* is the subject of *leer* it can be realized as the genitive dependent of the nominalized resultative construction as (511) showed.

So the last test for distinguishing resultative constructions involving intransitive verbs from those that involve transitive verbs is shown to be non-applicable

²⁵See also Wilder 1991, p. 229; 1994, p. 233.

²⁶taz, 06.20.1996, p. 6.

for German. It is therefore possible to treat both resultative constructions with intransitive base verbs and resultative constructions that seem to involve transitive verbs uniformly as the result of the transitivization of an intransitive verb.

In the following subsection, I will discuss examples that seem to be counterexamples to Oppenrieder's and Wunderlich's transitivization analysis.

5.1.7 Transitivization

If one assumes that resultatives are derived from intransitive forms, the constructions in (513) cannot be derived by this process since *machen* ('make') cannot be used without an object.

- (513) a. Der Alkohol machte ihn müde.²⁷
 the alcohol made him tired
- b. Er machte die Tür auf.
 he made the door open
 'He opened the door.'
- c. *Er machte.
 he made
- d. *Der Alkohol machte (ihn).
 the alcohol made him

Instead, one has to assume a lexical entry for *machen* that has the same form as the resultative constructions discussed above and that is listed in the lexicon.²⁸ This version of *machen* selects a subject, an object, and a predicate that predicates over the object.^{29,30} Since *machen* is a support verb that contributes nothing but the *cause* relation to the meaning of the utterance, this special treatment of the verb is justified.

²⁷Helbig and Buscha, 1970, p. 543.

²⁸Note that I do not claim that all combinations of *machen* and a predicate should be treated in this compositional way.

(i) Es seien aber auch Briefe mit Morddrohungen wie „Man sollte Dich so schnell wie möglich
 it be but also letters with murder.threats like one ought you so fast as possible
 kaltmachen“ eingegangen. (taz, 07.22.1994, p. 4)
 cold.make in.gone
 'But letters containing death threats like "Someone ought to do away with you as quickly as
 possible" were also received.'

In (i) we have a particle verb with an idiosyncratic meaning.

²⁹See also Dowty (1979, p. 223) for a similar suggestion regarding *make*. Steube (1994, p. 245) and Kunze (1997, p. 132) also remark that *machen* should have its own lexical entry and should not be treated as an instance of the productively derived resultative construction.

³⁰As Andrew McIntyre pointed out to me, there is a further interesting difference between resultative constructions and *machen* + predicate: In *machen* + predicate constructions, the accusative may be omitted:

(i) a. Dieses Getränk macht schnell besoffen.
 this drink makes fast drunk

At first glance, the caused-motion example in (514) looks like a counterexample to the transitivization analysis since the verb comes together with two NPs and a directional PP.

- (514) Karl wäscht sich die Seife aus den Augen.
 Karl washes self-DAT the soap-ACC out the eyes
 'Karl washes the soap out of his eyes.'

Winkler (1997, p. 348), discussing a similar example, assumes that *sich waschen* as in (515a) takes the additional argument *die Seife*. But the *sich* in (514) is not a direct complement of *waschen*. At first glance, (514) may seem related to (515a), and the phrase *die Seife aus den Augen* seems to be the subject + predicate of the resultative construction. But that the *sich* is actually a dative is shown by (515b) where the reflexive *sich* is replaced by the pronoun *him* whose case is unambiguously dative. (514) is related to (515c) and the *sich* is a possessive dative which is related to the body part NP *den Augen*.³¹

- (515) a. Karl wäscht sich.
 Karl washes self-ACC
 'Karl washes.'
 b. Karl wäscht ihm die Seife aus den Augen.
 Karl washes him-DAT the soap-ACC out the eyes
 'Karl washes the soap out of his eyes.'
 c. Karl wäscht die Seife aus den Augen.
 Karl washes the soap-ACC out the eyes
 'Karl washes the soap out of the eyes.'

-
- b. Ich mache sauber.
 I make clean

Similar examples with resultative constructions are hardly acceptable:

- (ii) ?* Ichbürste sauber.
 I brush clean

³¹ See Engel, 1977, p. 168–169 on the possessive dative. Kunze (1997, p. 133) remarks that the dative in (i)—which is parallel to (514)—is a body part dative:

- (i) Ich schreibe mir die Finger wund.
 I-NOM write myself-DAT the fingers sore
 'I write my fingers to the bone.'

Note that these datives are tricky. They can appear as nominatives in dative passive constructions:

- (ii) Er bekam die Seife aus den Augen gewaschen.
 he-NOM got the soap-ACC out the eyes washed
 'He got the soap washed out of his eyes.'

This suggests that the dative is introduced as a complement of the resultative predicate *aus den Augen waschen* which then can undergo dative passive. On the dative passive see also Chapter 3.1.4.

The example in (516) has a structure that is parallel to (514), but it is a lexicalized form.

- (516) Sie reden sich die Köpfe heiß.
 they talk self-DAT the heads-ACC hot
 'Their conversation becomes increasingly heated.'

The plural and the reflexive are obligatory.

After this discussion of examples with possessive datives, I want to discuss the sentence in (517a) which is a stative passive that corresponds to (517b). It has to be assumed that (517d) is the basis for the resultative formation in (517a–c). This seems strange since the meaning of *brennen* ('to burn') in (517d) is different from the meaning in (517a) and (517c). The intransitive form of the verb *brennen* that specifies an action is blocked by the theme verb reading.

- (517) a. Leer gebrannt ist die Stätte.³²
 empty burnt is the place
 'The place is completely burnt-out.'
- b. Man/Jemand brannte die Stätte leer.
 someone burnt the place out
- c. Er hat mit der Zigarette ein Loch in das Tisch Tuch gebrannt.³³
 he has with the cigarette a hole in the tablecloth burnt
 'He burnt a hole in the tablecloth with a cigarette.'
- d. Er hat gebrannt.
 he has burnt
 'He burnt.'

So (517a) seems to be another counterexample to the assumption that resultative constructions are the result of a transitivity process. However, there are examples of the intransitive use of the agent verb *brennen*:³⁴

- (518) a. Die Horden zogen sengend und brennend durch die Gegend.
 the hoards pulled singeing and burning through the area
 'The hoards marched through the region with fire and sword.'
- b. Nur weil ich Knecht war, bin ich ausgezogen zu morden
 only because I servant was, am I PART(out).moved to murder
 und zu brennen.³⁵
 and to burn
 'I only went out to murder and to burn because I was a servant.'

³²Schiller, *Die Glocke*.

³³Kempcke, 1984, p. 204.

³⁴The sentences in (518) are from the *Wörterbuch der deutschen Gegenwartssprache* (Klappenbach and Steinitz, 1977).

³⁵Brecht, *Gedichte*, 261.

This shows that the version of *brennen* that is required for the analysis of (517a) can also be used without an object and hence examples like (517a–c) are not counterexamples to the transitivization analysis.

The following examples that are discussed by Rapp (1997, p. 101) would be problematic for the analysis suggested above if Rapp's claim that *streicheln* ('to stroke') and *kämmen* ('to comb') cannot be used without an object were true:

- (519) a. * Er streichelte ihre trüben Gedanken.
 he stroke her sad thoughts
 b. Er streichelte ihre trüben Gedanken weg.
 he stroke her sad thoughts away
- (520) a. Er kämmt die Haare.
 he combed the hair
 b. * Er kämmt das Gesicht.
 he combed the face
 c. Er kämmte das Gesicht frei.
 he combed the face free
 'He combed the hair off his face.'

However, as the data in (521) and (522) show, *streicheln* and *kämmen* can be used without an overt object:

- (521) a. Es darf nach Herzenslust gestreichelt und geschmust werden: Lämmchen, Zwergziegen und Kälber lassen geduldig Kraulen und „Ach-wie-süß“-Rufe über sich ergehen.³⁶
 'It is allowed to stroke and to cuddle: little lambs, dwarf goats, and calves submit to fondling and 'How cute' calls.'
 b. Heutzutage wird aber weder gebadet noch geduscht, sondern
 nowadays is but neither bathed nor showered but
 gestreichelt.³⁷
 stroked
 'Nowadays there is neither bathing nor showering, but stroking.'
 c. Er streichelt gut.
 he strokes well
- (522) a. Er kämmte, bis das Fell glänzte.
 he combed until the fur shone
 'He combed the fur until it shone.'
 b. bei der kämmenden Goldhaarigen vom Felsen bei St. Goar³⁸
 at the combing gold.haired from.the rock at St. Goar

³⁶Mannheimer Morgen, 23.04.1991, Lokales; Mistgabel gibt den Ton an.

³⁷Mannheimer Morgen, 18.09.1999, Lokales.

³⁸Mannheimer Morgen, 03.06.1998, Lokales; Über die Liebe.

The examples in (521a,b) are impersonal passives, i. e. passives that correspond to active sentences without an accusative object.

On page 108, Rapp discusses examples with *schieben* ('to push') and *rasieren* ('to shave'). She marks the intransitive use of *schieben* with a question mark and the intransitive use of *rasieren* with a star. The following examples show that both *schieben* and *rasieren* may be used without an object:

- (523) a. „Es ist wirklich eine Panne. Wir müssen schieben!“³⁹
 it is really a hitch we have.to push
 ‘It is really a hitch. We have to push it.’
 b. Wird ein Fahrzeug während der Fahrt bei Nacht betriebsunfähig und
 muß geschoben werden, darf die rückwärtige Beleuchtung durch
 schiebende Personen nicht verdeckt werden.⁴⁰
 ‘If a vehicle breaks during the night and if it has to be pushed, the rear
 light must not be covered by those who push the vehicle.’

The participle *schiebende* ('pushing') is used without its object in (523b). The PP formed with the participle of the transitive version is *durch das Fahrzeug schiebende Personen* ('by the vehicle pushing persons'), but the vehicle is not mentioned in the participle phrase in (523b) since the discourse referent of the object can be inferred from the context and the object of *schieben* is optional.

- (524) a. daß keiner von seinen Leuten rasieren könne.⁴¹
 that nobody of his people shave could
 ‘that nobody of his people was able to shave somebody.’
 b. ich [...] war besonders deswegen berühmt, weil ich mit der
 I was especially therefore famous because I with the
 linken Hand rasierte.⁴²
 left hand shaved
 ‘The main reason for my being famous was that I shaved people with
 my left hand.’

Kaufmann and Wunderlich (1998, p. 20) discuss the examples in (525) and (526):

- (525) a. Die Nachbarn stellen den Keller voll.
 the neighbors put/stand the cellar full
 b. Sie leerte die Milch in den Ausguß.
 she emptied the milk into the sink
 c. Die Holzfäller fällen eine Schneise in den Wald.
 the woodworkers fell an aisle into the wood

³⁹Bildzeitung, 11.02.1967, p. 3.

⁴⁰Anweisung für Fahrer von Dienstfahrzeugen, 01.03.1962, p. 15

⁴¹Goethe, *Wilhelm Meisters Wanderjahre*, Hamburger Ausgabe, Band 8, p. 380.

⁴²Goethe, *Wilhelm Meisters Wanderjahre*, Hamburger Ausgabe, Band 8, p. 380.

- (526) a. Die Nachbarn stellen *(die Kisten in den Keller).
 the neighbors put the boxes into the cellar
 b. Sie leerte *(die Flasche).
 she emptied the bottle
 c. Die Holzfäller fällen *(Bäume).
 the woodworkers fell trees

While sentences like (527) are possible, the verbs *stellen* ('to put') and *leeren* ('to empty') seem to have no intransitive version.

- (527) Wegen des Sturmschadens müssen wir (den Baum / die Bäume)
 because.of the storm.damage have.to we the tree the trees
 fällen.
 fell
 'We have to fell the tree because of the storm damage.'

leeren can be used intransitively, but this seems to be restricted to containers that are emptied regularly:

- (528) a. Jetzt muss ich von Binz bis zur Sihlpost fahren, um einen Brief nach
 18 Uhr aufzugeben, statt nur bis Witikon, wo am Sonntag komischer-
 weise erst um 18.15 geleert wird.⁴³
 'I have to drive from Binz to the Sihlpost now to post a letter after
 6pm, instead of Witikon where the mailbox funnily enough is emptied
 at 6:15pm on Sundays.'
 b. Damit [...], wurde die Anzahl der Papier- und Abfallkörbe verdichtet.
 Geleert wird werktags zwei bis drei Mal täglich und am Wochenende
 ein bis zwei Mal pro Tag.⁴⁴
 'In order to [...] the amount of waste bins was increased. They are
 emptied two to three times on working days and one to two times at
 the weekend.'

The status of the object in (525b) is not clear since *die Milch* can refer both to the substance and to the container. (529) shows that it is really possible to have an object with *leeren* that is not subcategorized for:

- (529) In der Schachtel waren zwei Plastikbeutel. Joe leerte ihren Inhalt
 in the box were two plastic.bags Joe emptied their content
 auf den Küchentisch.⁴⁵
 onto the kitchen.table
 'There were two plastic bags in the box. Joe emptied them so that their
 content got on the kitchen table.'

⁴³Züricher Tagesanzeiger, 06.07.1999, p. 27.

⁴⁴Mannheimer Morgen, 19.10.2000, Lokales; Saubermänner verstärkt auf Tour.

⁴⁵Mannheimer Morgen, 07.08.2000; Die dunkle Seite des Mondes Martin Suter.

However, the verb *leeren* is combined with a directional PP in (525b) and (529). So it could be argued that these examples are instances of a different pattern.

stellen differs from other constructions that have been discussed so far in that two arguments are suppressed one of them being the position something is placed in. So such constructions also deserve a special treatment.

Concluding the discussion in this section, we can say that sentences that at first appear to be counterexamples to the transitivization analysis can be explained without problems.

In the following sections, I discuss properties of resultative constructions that were discussed in the context of verbal complementation and predicate complexes involving adjectives in Chapter 2. I first look at the embedding of expletive and subjectless predicates which was used as an important criterion to distinguish between control and raising predicates. I will then look at the behavior of NPs in passivized resultative constructions and at the unaccusative/unergative differences and, finally, I apply all the constituent order tests from Chapter 2 and check whether iteration of resultative predicates is possible as was the case for depictive predicates.

5.1.8 Expletive Predicates and Subjectless Constructions

As was shown in Chapter 2.1.10.5, subject and object predicative constructions allow for the embedding of expletive predicates:

- (530) a. Er findet es zu warm.
 he finds it too warm
 b. Er macht es warm.
 he makes it warm

This is not the case for resultative constructions.

- (531) a. Sie sitzen es warm.
 they sit it hot
 b. Die Pferde arbeiten es warm.
 the horses work it hot

While the *es* in (530) can be understood as non-referential, this is not possible for (531): (531a) cannot mean that the party guests caused the room to get warm by sitting around. Since resultative constructions with unselected objects like (486) and (487) are possible, one cannot argue that the expletives are ruled out because of the role assignment of the primary predicate. Instead, I suggest that expletive secondary predicates are excluded in resultative constructions because of the meaning of the resultative construction itself, which I assume to be: Event X causes Y to become Z.⁴⁶ Y is the subject of the predicate Z. This expresses the fact that there has to be an affected entity in resultative constructions (Simpson, 1983,

⁴⁶Note that I do not assume a representation of the form X causes that Y becomes Z by V-ing as was suggested, for instance, by Breindl and Engel (1997, p. 1114) since such a representation excludes ex-

p. 146; Kaufmann, 1995a, p. 218; Goldberg, 1995, p. 188; Winkler, 1997, p. 339–340). Under this assumption, impersonal predicates in resultative constructions are also excluded and the ungrammatical sentences in (532) are explained.

- (532) a. Ihm ist warm.
 him-DAT is warm
 ‘He is warm.’
- b. weil (es) ihm hier zu warm ist.
 because it-EXPL him-DAT here too warm is
 ‘because he finds it too warm here.’
- c. Er arbeitete, bis (es) ihm zu warm wurde.
 he worked until it-EXPL him-DAT too warm got
 ‘He worked until he found it too warm.’
- d. *Er arbeitete ihm zu warm.
 he worked him-DAT too warm
- e. *Er arbeitete es ihm zu warm.
 he worked it-EXPL him-DAT too warm

Subjectless predicates can be combined with an expletive *es* which functions as a semantically empty subject (532b). This expletive cannot surface as accusative object (532e).

Subjectless verbs like those in (533) cannot appear in resultative constructions, but this is due to the semantic type of the verbs.

- (533) a. *Ihm graut (es) zu Tode / zu einem zitternden Bündel.
 him dreads it-EXPL to death / to a shivering bundle
 Intended: ‘He is scared to death. / Fear has made a shivering wreck of him.’
- b. *Ihm graut (es) die Studenten ängstlich / fröhlich.
 him dreads it-EXPL the students timid happy
 Intended: ‘His dread makes the students timid/happy.’
- c. *Ihn friert (es) zu Tode.
 him colds it-EXPL to death
 ‘He is frozen to death.’
- d. *Ihn friert (es) Max schadenfroh.
 him freezes it-EXPL Max delight.at.another’s.misfortune
 Intended: ‘The fact that he is freezing makes Max happy.’

amples like (485b) where the causing event does not have a participant that could function as a causer. Goldberg’s representation (1995, p. 188), which is *cause-become(agt, pat, result-goal)* is problematic for the same reasons.

Plank (1985, p. 176) judges (534) as grammatical, but I find it totally impossible. The only syntactic analysis that seems available is the one with *stocksteif* as depictive predicate, but this is ruled out by world knowledge: Stiffness is usually the result of some freezing, not something that holds right from the beginning of the freezing event.

- (534) *Ihn frohr stocksteif.
 him froze stick.stiff
 ‘He was frozen stiff.’

Expletive predicates may appear as primary predicates in resultative constructions, as (485b)—repeated here as (535)—shows.

- (535) Es regnete die Stühle naß.⁴⁷
 it-EXPL rained the chairs wet
 ‘The chairs were soaked by the rain.’

The difference between (532d,e) and (535) is that in (532d,e) the embedded predicate is expletive whereas in (535) the matrix predicate is expletive.

Plank’s examples with expletive matrix predicates in (536)—judged with a question mark by him—are totally unacceptable.⁴⁸

- (536) a. *Es dunkelte kohlrabenschwarz.
 it darkened coal.raven.black
 Intended: ‘It darkened with the result that it was Coal raven black.’
 b. *Es regnete sich patschnaß.
 it rained itself soaking.wet
 Intended: ‘It rained so much everything was soaking wet.’

In a transitivization analysis, (536a) is excluded on syntactic grounds since there is no accusative element as is needed in resultative constructions with unergative base verbs (see Section 5.1.10 for a discussion of resultative constructions with unaccusative verbs). (536b) is excluded since the reflexive pronoun cannot be interpreted as coindexed with the expletive. Such coindexings are not excluded in general. There are lexicalized forms that take an expletive and a reflexive pronoun:

- (537) Es handelt sich um Peter.
 it handles itself about Peter
 ‘It’s about Peter.’

(536b) is blocked by the description of the meaning of resultative constructions that was given above: If the subject of the resultative predicate has to be referential, the *sich* must be referential and since it is reflexive, it has to be bound to an

⁴⁷Wunderlich, 1995, p. 455.

⁴⁸On the interaction of the semantics of *dunkeln* with the semantics of resultative constructions see Kaufmann, 1995a, p. 202.

antecedent in a local domain, but this is impossible since the *es*-complement of *regnen* cannot be coindexed with the referential *sich*.

The data discussed in this subsection show that impersonal constructions and expletive predicates are excluded as secondary predicates in resultative constructions. At first glance, this seems to contradict the assumption that resultative constructions are raising constructions, as was argued in Section 5.1.2. However, the fact that the embedded predicate has to have a referential subject is explained by the semantics of the resultative construction, i. e. by the fact that there has to be an affected entity.

5.1.9 Passive

Although the semantic properties of the accusative are primarily determined by the resultative predicate, the accusative nevertheless behaves like an object of the matrix verb: As Wunderlich (1995, p. 455) noted, the accusative changes into a nominative in passive and middle constructions. The middle versions of (485) and (487) were shown in (505) and are repeated together with the passive versions as (538) for convenience.⁴⁹

- (538) a. Der Weinkeller wurde leer getrunken / trinkt sich schnell leer.
 the wine.cellar was empty drunk drinks self fast empty
 b. Der Rasen wurde platt gelaufen / läuft sich leicht platt.
 the lawn was flat run runs self easily flat
 c. Die Stühle wurden naß geregnet / regnen leicht naß.
 the chairs were wet rained rain easily wet

The example in (539) is a state passive that corresponds to an active sentence that is similar to (488c).

- (539) Am 27. September war Kabul sturmreif geschossen.⁵⁰
 at 27. September was Kabul storm.ripe shot
 ‘On 27 September Kabul had been under fire long enough to be ready for attack.’

Passive involves arguments of the verb. These can either be raised from an embedded predicate, as in the case of object predicatives (see Chapter 2.1.10.6), and in the case of the remote passive (see Chapter 3.2.5), or they can be real arguments of the verb, i. e. arguments to which the verb assigns a semantic role. The data in (538)–(539) suggest that the accusative in the active sentence is a complement of the resultative construction that can be promoted to subject and then get nominative.

Boas (2000, p. 217) notes that passives with fake reflexives are excluded:

⁴⁹See also Helbig and Buscha, 1970, p. 543, Simpson, 1983, p. 144, and Oppenrieder, 1991, p. 114 on passivization of resultative constructions.

⁵⁰taz, 11.06.1996, p. 18.

(540) * Himself was talked hoarse.

Examples like (540) are explained by the fact that *himself* is accusative and therefore is excluded in subject positions (for similar arguments regarding reflexives in subject positions see Brame, 1977, p. 388 and Pollard and Sag, 1994, p. 262). The reflexive pronoun is required by the meaning of the resultative construction, but since reflexives do not have a nominative, passivization of such resultative constructions is impossible.

In German, there is a construction in which the reflexive is possible even in subjectless sentences:

(541) Hier wird sich von Euch nicht gewaschen!⁵¹
 here is self-3 by you-2 not washed
 'You are not allowed to wash here.'

Wunderlich's example in (541) shows that the reflexive in such constructions is special in not agreeing in number with the agent expressed by the *von*-phrase. So, it seems justified to treat German passives like (542) as special cases that have to be analyzed like Wunderlich's example.

(542) ? weil sich bei dieser Tagung heiser geredet wurde.
 because self at this conference hoarse talked was
 'because people talked themselves hoarse at this conference.'

See Nerbonne, 1982, p. 345; 1986, p. 917; Wunderlich, 1985, p. 222; Abraham, 1986; Pollard, 1994, p. 287, and Müller, 1999a, Chapter 15.3.4 for a discussion of such examples.

5.1.10 Unaccusative Verbs

Kaufmann (1995a, p. 146) discusses the following examples that show that adjectives are hardly possible in resultative constructions with unaccusative verbs in German.⁵²

- (543) a. Die Butter schmilzt zu einer Pfütze / * flüssig.
 the butter melts to a puddle runny
 b. Sein Gesicht erstarrt zu einer Maske / * hart.
 his face freezes to a mask hard
 c. Die Vase zerfällt in Stücke / * kaputt.
 the vase apart.falls in pieces broken
 d. Die Milch friert zu einem Block / * fest.
 the milk freezes to a block solid

⁵¹Wunderlich, 1985, p. 222.

⁵²But see Kaufmann, 1995b, p. 416 where she claims that unaccusative verbs do not enter resultative constructions at all.

The sentences in (544) are corpus examples of resultative constructions with an unaccusative verb and a prepositional phrase as resultative predicate:

- (544) a. [...] und im Winter froz sein Wasser zu Eis.⁵³
 and in.the winter froze its water to ice
 'and in the winter its water froze to ice.'
- b. Dann erzählt Juliane Lumumba von den Tonbändern im Archiv,
 then tells Juliane Lumumba from the tapes in.the archive
 die wegen fehlender Klimaanlage in der tropischen Hitze
 which because.of missing air.conditioning in the tropical heat
 zu einer schwarzen Masse schmolzen.⁵⁴
 to a black mass melted
 'Then Juliane Lumumba relates how, as a result of there being no air-conditioning, the tapes in the archive melted to a black mass in the tropical heat.'
- c. Dann ging mal das Schreibpapier aus oder die bestellte Ladung
 then went once the writing.paper out or the ordered load
 Kerzen war zu Wachs geschmolzen, ehe sie den Hafen erreicht
 candles was to wax melted before they the harbor reached
 hatte.⁵⁵
 had
 'Then they would run out of paper or the candles they had ordered had melted to wax before they had even arrived at the harbor.'
- d. In einer derartigen Gesamtrechnung schmilzt manche
 in a that.type.of total.calculation melts some
 Steuerfussdifferenz zu einer Lappalie.⁵⁶
 tax.foot.difference to a trifle
 'In that type of total calculation the tax difference melts down to a trifle.'

While the difference in acceptability in the examples in (543) is pretty clear, examples of resultative constructions involving unaccusative verbs and adjectives can be found:

- (545) Solange [...], deckt man die Erde zwischen den Pflanzen in jedem Herbst mehrere Zentimeter mit humosem Material ab. Darunter friert die Erde weniger hart, und im Sommer bleibt sie selbst am sonnigen und warmen

⁵³Frankfurter Rundschau, 16.09.1999, p. 3.

⁵⁴Frankfurter Rundschau, 05.08.1997, p. 3.

⁵⁵Frankfurter Rundschau, 028.02.1998, p. 8.

⁵⁶Züricher Tagesanzeiger, 04.01.1997, p. 1.

Platz so feucht und kühl, wie Schneeheide es liebt.⁵⁷

‘As long as [...], the soil between the plants is covered over with several centimeters of humus every fall. The soil does not freeze so hard underneath and the soil remains moist and cool in summer, even in sunny, warm places, just as snow heather likes it.’

Rapp (1997, p. 107) discusses the following example, which I find rather marginal:

- (546) a. Das Wasser gefror fest.
the water froze solid

The only corpus example of *festfrieren* (‘freeze solid’) I could find is (547):⁵⁸

- (547) ein See wird erst zu Eis festfrieren, wenn [...]⁵⁹
a lake will only to ice solid.freeze if
‘A lake will only freeze solid if ...’

Kaufmann and Wunderlich (1998, p. 22) note that the acceptability of unaccusatives with result APs is higher if the adjective focuses on the degree of the achieved property. They provide the examples in (548):

- (548) a. ? Die Milch fror steinhart.
the milk froze stone.hard
‘The milk froze hard as stone.’
b. ? Alice schrumpfte winzig klein.
Alice shrunk tiny small
‘Alice shrunk extremely small.’

Kaufmann and Wunderlich’s observation is also relevant for (545): The result *hart* (‘hard’) is modified by *weniger* (‘less’).

In addition to examples with resultative APs and resultative PPs, examples with copula particles can occur in resultative constructions with unaccusative verbs:

- (549) Der Fluß fror zu.⁶⁰
the river froze shut
‘The river froze over.’

As Kaufmann (1995a, p. 144) notes, it is not possible that the resultative predicate predicates over an NP that is different from the one selected by the base verb. The sentences (550) cannot have the meaning in the glosses. The resultative predicate always predicates over the argument of the base verb.

⁵⁷Mannheimer Morgen, 02.01.1999, Ratgeber; Eine robuste, kleine Winterschönheit.

⁵⁸Note that this example is exceptional in that there are two result states, one expressed by the PP *zu Eis* and the other one expressed by *fest*.

⁵⁹Die Zeit, 04.04.1986, p. 81.

⁶⁰Boas, 2000, p. 14. See also Ryu, 1997, p. 235.

- (550) a. * Der Teppich schmilzt naß.
 the carpet melts wet
 Intended: 'The melting (of the snow on the shoes) makes the carpet get wet.'
- b. * Mein Zimmer wächst zu einem dunklen Loch.
 my room grows to a dark hole
 Intended: 'The growing (of the plants) turns my room into a dark hole.'

The examples in (551) seem to be counterexamples to this claim:

- (551) a. denn bei der großen Kälte in der Stube frören die Speisen in den
 because at the big cold in the room freeze the food in the
 Schüsseln fest.⁶¹
 dishes tight
 'because the food freezes tight in the bowls due to the extreme cold in the room.'
- b. Beim Eisschlecken an Laternenmasten froren sie mit den
 during ice.licking at lamp.posts froze they with the
 Zungen an den Aluminiumpfählen fest.⁶²
 tongues at the aluminum.posts tight
 'Their tongues froze tight onto the aluminum posts whilst licking the ice on the lamp posts.'

However, these examples are not parallel to the English examples often discussed in the literature. Verbs like *regnen* and *frieren* are not unaccusative and allow resultative constructions, as (485b)—repeated here as (552)—shows:

- (552) a. Es hat geregnet.
 it-EXPL has rained
- b. Es hat gefroren.
 it-EXPL has frozen
- (553) Es regnet die Stühle naß.
 it-EXPL rained the chairs wet
 'The chairs were soaked by the rain.'

The interesting thing is that the expletive may be omitted as in (554):

- (554) Die Wäsche regnet naß.⁶³
 the laundry rains wet

⁶¹Grimms Märchen, *Sechse kommen durch die ganze Welt*, p. 390.

⁶²Frankfurter Rundschau, 04.02.1998, p. 38.

⁶³Kaufmann (1995a, p. 153) cites Wunderlich with this example.

I suggest that the examples in (551) are resultative constructions involving an expletive primary predicate. As in (554), the expletive is suppressed in (551). Of course, sentences like (555) cannot be used in Modern Standard German, but it seems plausible that *festfrieren* is a lexicalized form that developed from a construction with an expletive subject as sketched above.

- (555) ?* Es froz die Jungen an den Pfählen fest.
it-EXPL froze the boys at the posts tight

Kaufmann (1995a, p. 146) claims that the causative variant of unaccusative verbs does not allow for adjectival resultative predicates. This claim is contradicted by the data in (556) and (557).

- (556) a. Das klingt, als wolle man die Kulturnation
that sounds as wanted.to one the culture.nation
gesundschrumpfen.⁶⁴
healthy.shrink
'That sounds as though the culture nation is to be shrunk to health.'
- b. Bibliotheken sollten kleiner werden und sich gesundschrumpfen,
überfüllte Hörsäle müßten sich wieder leeren, und das Studium sollte
nach amerikanischem Modell verkürzt werden.⁶⁵
'Libraries should get smaller and shrink to a healthy size, over-
crowded auditoriums should get less cramped, and the time taken
to get a degree should be shortened in accordance with the American
model.'

The intransitive version of *schrumpfen* ('shrink') is unaccusative, but the transitive version, where a causer is the subject, is not. In the sentence in (556a), the causer is different from the affected entity, in (556b) with the reflexive, causer and affected entity are identical due to the use of the reflexive pronoun.

The construction in (557a) is probably derived from the optionally transitive verb *altern* ('make older') as used in (557b):

- (557) a. Auch das Präsidium muß sich unverzüglich gesundaltern!⁶⁶
also the presidium must self un-delayed healthy.age
'The presidium too must get healthy by aging.'
- b. Wir haben das Metall künstlich gealtert.
we have the metal artificially aged
'We aged the metal artificially.'

Note, however, that the resultative constructions in (556) seem not to be the product of a transitivity process since the sentences in (558) cannot be understood as an intransitive version of the causative form.

⁶⁴taz, hamburg, 12.31.1998, p. 25.

⁶⁵taz, hamburg, 01.09.1998, p. 22.

⁶⁶taz, 12.02.1991, p. 13.

- (558) a. Man schrumpft.
 one shrinks
 b. Bibliotheken schrumpfen.
 libraries shrink

I leave it open whether this is due to a strong preference for the non-agentive reading as in the case of *brennen* (see the discussion of (517) on page 222), or whether a special process for cases like (556) has to be assumed.

Having discussed unaccusative verbs in resultative constructions, I now turn to constituent order phenomena.

5.1.11 Permutation in the *Mittelfeld*

The accusative can be permuted with the subject of the base verb:

- (559) a. weil die Gäste ihn leer trinken.
 because the guests-NOM him-ACC empty drink
 b. weil ihn die Gäste leer trinken.
 because him-ACC the guests-NOM empty drink
 c. weil die Jogger ihn platt laufen.
 because the joggers-NOM him-ACC flat run
 d. weil ihn die Jogger platt laufen.
 because him-ACC the joggers-NOM flat run

This is parallel to the serialization in subject and object predicate constructions, which were discussed in Chapter 2.1.10.2. The possibility to permute the NPs can be explained if one assumes that the NPs in the *Mittelfeld* are dependents of the same head.

5.1.12 Intraposition

Resultative predicates are usually positioned next to the verb. In sentences with both depictive and resultative predicates, the depictive precedes the resultative (Oppenrieder, 1991, p. 126):

- (560) Gustav hat das Fleisch roh klein / * klein roh geschnitten.⁶⁷
 Gustav has the meat raw small small raw cut
 ‘Gustav chopped the raw meat into little pieces.’

This is explained by an analysis that treats the resultative predicate as part of the predicate complex and depictives as adjuncts that can be serialized in the *Mittelfeld*.

The assumption that resultative predicates are part of the predicate complex is also supported by the fact that usually no material is allowed to intervene between the base verb in final position and the resultative predicate.⁶⁸

⁶⁷Oppenrieder, 1991, p. 126.

⁶⁸The examples in (561) are from Lötscher, 1985, p. 216.

- (561) a. Ich wollte die Zuchetti in Scheiben schneiden.
 I wanted the Zuchetti into slices cut
 b. *Ich wollte in Scheiben die Zuchetti schneiden.
 I wanted into slices the Zuchetti cut
- (562) *Gustav hat die Tasse leer mit großen Schlucken getrunken.⁶⁹
 Gustav has the cup empty with big gulps drunk
 Intended: 'He drained the cup with big gulps.'

Neeleman (1994, p. 85) gives a Dutch example with a resultative predicate separated from the base verb. This example transfers to German easily:

- (563) a. daß so grün selbst Jan die Tür nicht streicht.
 that that green even Jan the door not paints
 'that not even Jan would paint the door that green.'
 b. daß Jan so grün selbst die Tür nicht streicht.
 that Jan that green even the door not paints

Lüdeling (1998, p. 56) provides the following example in which the resultative predicate also appears in the *Mittelfeld*.

- (564) Ich möchte, daß der Prinz die Zwiebeln in feine Würfel für die Suppe
 I want that the prince the onions in fine cubes for the soup
 und in Ringe für den Salat schneidet.
 and in rings for the salad cuts
 'I want the prince to cut the onions into small cubes for the soup and into rings for the salad.'

In these examples, we have an intraposition into the *Mittelfeld* that is due to focus movement (Neeleman, Lüdeling). As was discussed in Chapter 2, the same kind of focus split can be observed with adjectives in copula and in subject and object predicative constructions.

5.1.13 Extraposition

Extraposition of subcategorized predicates in copula constructions and in subject and object predicate constructions is impossible or at least marked in German (see also Chapter 2.1.9.3 and 2.1.10.3).⁷⁰ Some examples are given here as (565):

⁶⁹Oppenrieder, 1991, p. 126.

⁷⁰Hoeksema (1991a, p. 697) gives Dutch examples that correspond to (i):

- (i) a. daß Petra gegen Abtreibung ist.
 that Petra against abortion is
 'that Petra is against abortion.'
 b. *daß Petra ist gegen Abtreibung.
 that Petra is against abortion

- (565) a. Ich bin im Urlaub gewesen.
 I have in.the holiday been
 'I've been on holiday.'
- b. * Ich bin gewesen im Urlaub.
 I have been in.the holiday
- c. Ich habe ihn für einen Lügner gehalten.
 I have him for a liar regarded
 'I regarded him a liar.'
- d. * Ich habe ihn gehalten für einen Lügner.
 I have him regarded for a liar

The same is true for resultative predicates, as (566) shows:

- (566) a. Er hat die Mohrrübe klein geschnitten.
 he has the carrot small cut
 'He cut the carrot small.'
- b. * Er hat die Mohrrübe geschnitten klein.
 he has the carrot cut small
- c. Er hat die Mohrrübe in Streifen geschnitten.
 he has the carrot in strips cut
 'He cut the carrot into strips.'
- d. * Er hat die Mohrrübe geschnitten in Streifen.
 he has the carrot cut in strips

The non-extraposability is not a property of predicative constructions in general since sentences with extraposed depictive prepositional phrases are much better than those in (565) and (566):

- (567) Ja, ich habe ihn getroffen in seinem neuen Anzug.
 yes I have him met in his new suit
 'Yes, I met him in his new suit.'

An analysis that treats depictive predicates as adjuncts and resultative predicates as complements belonging to the predicate complex predicts that depictive secondary predicates are more flexible than resultative predicates as far as their serialization is concerned.

-
- c. daß Ada Bea nicht auf die Tanzfläche kriegt.
 that Ada Bea not on the dance-floor gets
 'that Ada does not get Bea onto the dance-floor.'
- d. * daß Ada Bea nicht kriegt auf die Tanzfläche.
 that Ada Bea not gets on the dance-floor

5.1.14 Fronting

One finds another similarity with other complex predicates looking at the examples in (568).⁷¹

- (568) a. ?? Hämmern wollen wir den Stab flach (nicht walzen).
 hammer want we the rod flat not roll
 ‘We want to hammer the rod flat, not roll it.’
- b. In Scheiben schneiden wollte ich die Zuchetti.
 into slices cut wanted I the Zuchetti
- c. * Die Zuchetti schneiden wollte ich in Scheiben.
 the Zuchetti cut wanted I into slices
- d. ?? Schneiden müssen Sie das Fleisch klein!
 cut must you the meat small
 ‘You have to cut the meat into small pieces!’
- e. * Das Fleisch schneiden müssen Sie klein!
 the meat cut must you small

As the examples in (82c), (153b), and (178)—repeated here in (569)—show, the fronting of material that embeds other parts of the predicate complex is impossible if the embedded parts remain in the *Mittelfeld*.

- (569) a. * Müssen wird er ihr ein Märchen erzählen.
 must will he her a fairytale tell
 Intended: ‘He will have to tell her a fairytale.’
- b. * Sein will Karl seiner Frau treu.
 be wants Karl his wife faithful
 Intended: ‘Karl wants to be faithful to his wife.’
- c. * Gefunden hat er ihn klug.
 found has he ihn smart
 Intended: ‘He considered him to be clever.’

The unacceptability of (568a,c,d,e) can be explained along the same lines: The primary predicate and the resultative predicate form a complex and frontings of a head in predicate complexes without the complex parts that are embedded under this head is not permitted.

Depictives differ from resultatives in that they do not have a tight relation to the verb. No predicate complex is formed. Hence, a depictive predicate like *roh* in (570) can remain in the *Mittelfeld* like an adverb.

⁷¹The example in (568a) is from Uszkoreit, 1987, p. 105, the examples in (568b,c) are from Lötscher (1985, p. 216), those in (568d–e) are from Oppenrieder (1991, p. 127).

- (570) Schneiden müssen Sie das Fleisch roh!⁷²
 cut must you the meat raw
 'You have to cut the meat raw!'

Finally, (571) and (572) show that both the accusative and the result predicate may be fronted independently.

- (571) a. Das Fleisch müssen Sie klein schneiden.
 the meat-ACC must you-NOM small cut
 'You have to cut the meat small.'
- b. Den ganzen Weinkeller haben sie leer getrunken.
 the whole wine.cellar-ACC have they-NOM empty drunk
 'They drank everything that was in the wine cellar.'
- (572) a. In Scheiben müssen Sie das Fleisch schneiden.
 in slices must you-NOM the meat-ACC cut
- b. Ganz leer hat er den Teller gegessen.
 totally empty has he-NOM the plate-ACC eaten
 'He ate everything that was on the plate.'

The fronting of resultative predicate and matrix verb without the accusative object is possible:

- (573) a. Klein schneiden müssen Sie das Fleisch.
 small cut must you-NOM the meat-ACC
- b. In Scheiben schneiden müssen Sie das Fleisch.
 in slices cut must you-NOM the meat-ACC

Data like (571) can be explained easily as an instance of normal constituent fronting as was discussed in Chapter 1.9.2. (572) and (573) can be explained by an analysis of complex fronting as was discussed in Chapter 2.2.2.

5.1.15 Iteration

Resultatives differ from depictive predicates in that there is at most one resultative predicate per base verb (Simpson, 1983, p. 152; Rothstein, 1985, p. 19). As the examples in (574) show, the iteration of resultative predicates is impossible.

- (574) a. *Er wusch die Sachen sauber weiß.
 he washed the clothes clean white
 Intended: 'He washed the clothes clean until they were white.'
- b. *Er trank die Kneipe leer bankrott.
 he drank the pub empty bankrupt
 Intended: 'He drank everything in the pub and because of this it went bankrupt.'

⁷²Oppenrieder, 1991, p. 127.

This is just natural if the formation of the resultative construction is seen as a transitivity process: Once a verb is transitivized, it cannot be transitivized again.

In addition to such syntactic reasons that prevent iteration, there are, of course, semantic reasons that make iteration of resultative predicates impossible. Winkler (1997, Chapter 6.2.1) follows Tenny in assuming that resultative predicates delimit a non-delimited event. An event may be delimited only once and therefore iteration is excluded.

As was noted in Chapter 4.1.5, resultative and depictive predicates are not mutually exclusive. If it is assumed that base verb and resultative predicate form a complex that selects an accusative, the properties of which are restricted mainly by the resultative predicate, it can be explained why a depictive predicate can refer to a nominal expression that is not in the valence representation of the primary predicate, as is the case in (575):

- (575) Susanne ißt den Teller angewärmt leer.⁷³
 Susanne eats the plate up.warmed empty
 ‘Susanne eats everything on the warmed-up plate.’

Concluding the data section, it has been shown that the resultative predicate should be treated as a complement of a transitivized version of the primary predicate and that the resultative predicate forms a complex with the governing head.⁷⁴ Resultative constructions pattern with raising constructions in that the matrix predicate does not assign a semantic role to the subject of the embedded predicate. Nevertheless, the embedding of subjectless or expletive predicates is not possible which is due to the semantics of the resultative construction.

Having discussed the properties of resultative constructions, let me now explain the details of the analysis.

5.2 The Analysis

Oppenrieder (1991, Chapter 1.5.3.7.4) and Wunderlich (1995; 1997a) analyze resultative constructions with unergative verbs in German as transitivizations of intransitive verbs. Following these approaches, I assume a lexical rule that has an intransitive verb as input and licenses a lexical item for a verb that contains the subject of the embedded predicate on its SUBCAT list. The rule for unergative verbs is shown in (576) on the facing page.⁷⁵ In lexical rules, only information that changes is mentioned in the output. So for instance, the specification of the

⁷³Oppenrieder, 1991, p. 126.

⁷⁴For other complex predicate analyses of resultative constructions see for instance Bach, 1979; Dowty, 1979; Simpson, 1983; Di Sciullo and Williams, 1987; Neeleman and Weermann, 1993; Neeleman, 1994; Koch and Rosengren, 1995; Winkler, 1997; Williams, 1997.

⁷⁵The specification of the argument structure is omitted in the lexical rules in (576) and (584). The argument structures are the concatenations of the SUBJ and the SUBCAT value. To have the newly introduced arguments on the ARG-ST list is important for explaining reflexivization with so-called fake reflexives (the HPSG Binding Theory refers to the ARG-ST) and the possibility for depictives to refer to this argument. See (575) for an example, and Chapter 4.2 for the analysis of depictives.

(578) *fisch-* ('to fish' intransitive, stem / finite form):

CAT	SUBCAT	$\langle \text{NP}_{[str]} \boxed{1} \rangle$
	XCOMP	$\langle \rangle$
CONT	AGENT	$\boxed{1}$
	THEME	\square
		<i>fischen</i>

The theme of *fischen* is not linked to any element in the valence representation and hence the value of the THEME feature in (578) is visualized as an empty box.

(579) *fisch-* ('to fish' as used in 'fish empty', stem / finite form):

CAT	$\left[\begin{array}{c} \text{SUBCAT } \langle \text{NP}[\textit{str}] \boxed{1} \rangle \oplus \boxed{2} \\ \\ \text{XCOMP } \langle \left[\begin{array}{c} \text{LOC } \left[\begin{array}{c} \text{CAT } \left[\begin{array}{c} \text{HEAD } \left[\begin{array}{c} \text{PRD } + \\ \text{SUBJ } \boxed{2} \langle \text{NP}_{ref} \rangle \end{array} \right] \\ \textit{adj-or-prep} \end{array} \right] \right] \right] \right] \rangle \\ \\ \text{SUBCAT } \langle \rangle \\ \text{XCOMP } \langle \rangle \\ \text{CONT } \boxed{3} \end{array} \right] \end{array} \right]$									
CONT	$\left[\begin{array}{c} \text{ARG1 } \left[\begin{array}{c} \text{AGENT } \boxed{1} \\ \text{THEME } \square \\ \textit{fischen} \end{array} \right] \\ \\ \text{ARG2 } \left[\begin{array}{c} \text{ARG1 } \boxed{3} \\ \textit{become} \end{array} \right] \\ \\ \textit{cause} \end{array} \right]$									

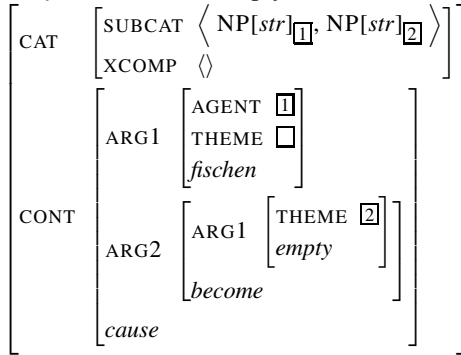
In an analysis of (577), the predicate that is selected via XCOMP gets saturated by *leer* ('empty') whose lexical entry is given in (580):

(580) *leer* ('empty'):

CAT	HEAD	SUBJ $\langle \text{NP}_{[str]} \boxed{1} \rangle$
		PRD +
		<i>adj</i>
CONT	SUBCAT	$\langle \rangle$
	XCOMP	$\langle \rangle$
	THEME $\boxed{1}$	<i>empty</i>

The combination of (579) and (580) yields (581).

(581) *leer fischen* ('to fish empty' finite form):



Since both NPs are dependents of the same head, the permutability of these arguments, which can be observed in (582), is predicted.

- (582) a. weil niemand den Teich leer fischt.
 because nobody-NOM the pond-ACC empty fishes
 'because nobody fishes the pond empty.'
- b. weil den Teich niemand leer fischt.
 because the pond-ACC nobody-NOM empty fishes
 'because nobody fishes the pond empty.'

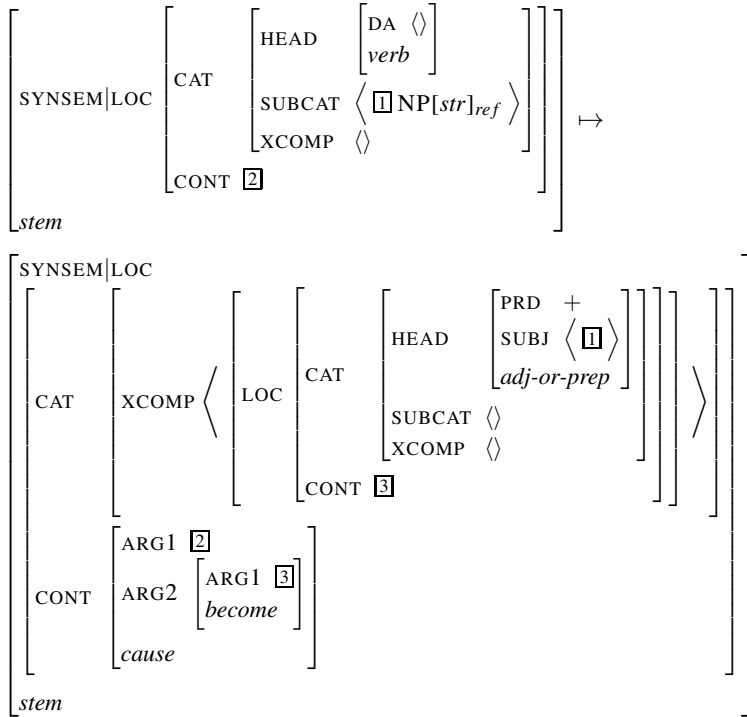
The first NP in the SUBCAT list with structural case gets nominative in active sentences like (582) and the second one accusative (see page 15 for the discussion of the Case Principle). In passive constructions, the subject (the first NP) is suppressed and the second one is promoted to subject. Since the promoted NP is the first NP in the SUBCAT list, it gets nominative in (583).

- (583) Der Teich wurde leer gefischt.
 the pond-NOM was empty fished
 'The pond was fished empty.'

The iteration of resultative predicates is not possible since the rule in (576) cannot be applied to its own output. The input sign has to have a SUBCAT list with exactly one element and the empty list as XCOMP value. Since the lexical rule adds an element to both lists, it cannot be applied recursively.

Having explained resultative constructions with unergative verbs, I now turn to unaccusative verbs. (584) shows the lexical rule that is needed for resultative constructions with unaccusative verbs.

(584) Lexical Rule for Resultatives with Unaccusative Verbs:



As was shown in the data section, the resultative predicate always predicates over the subject of the unaccusative verb.⁷⁶ The subject of unaccusative verbs has object properties and is therefore not contained in the DA list. The head features and the SUBCAT value of the input sign are not changed in the output. By convention,

⁷⁶Shortly before this book went to the printer, Andrew McIntyre pointed out to me that there seem to be examples in which the resultative predicate predicates over an element that is not an argument of the base verb:

- (i) Mein Zimmer wächst zu.
 my room grows covered
 'The plants in my room grow in such a way that the room is full of them.' or 'The plants in front of my room grow in such a way that the windows are covered by plants.'

Another example of such a construction is (ii.b) which is related to (ii.a).

- (ii) a. Das Wasser läuft.
 the water runs
 b. auch einige Keller liefen voll.
 also some cellars run full
 'Some cellars filled up (with water).' (Mannheimer Morgen, 26.05.2000, Lokales)

Such examples are not covered by the rule in (584). I leave it for further research whether the lexical rule should be adapted to cover such cases or whether they should be treated as lexicalized exceptions.

the values on the left-hand side and the values on the right-hand side of a lexical rule are identical unless specified differently. The lexical rule cannot apply to its own output since the output has one element in XCOMP and the input requires XCOMP to be empty. Therefore the iteration of resultative predicates with unaccusative verbs is also predicted to be impossible.

The rules in (576) and (584) produce lexical items that are very similar to the lexical entry for subject predicates like *erscheinen* ('seem') and object predicates like *finden* ('find'), respectively. Compare, for instance, the entry on page 106. The only difference is that the embedding of predicates with an expletive subject or subjectless predicates is not allowed in resultative constructions for semantic reasons.

Boas (2000) criticizes several Small Clause and Predication Theory approaches since—according to him—it is not possible to formulate restrictions on the object NP and to include world knowledge to rule out both unacceptable objects and unacceptable resultative predicates. In the lexical rules formulated above, the referential index of the subject of the resultative predicate is accessible and therefore it is possible to state constraints on this NP. Such constraints are specified as the value of the feature BACKGROUND. The value of BACKGROUND is a set that contains appropriateness conditions associated with a given type of phrase. See Pollard and Sag, 1994, Chapter 8.4, Chapter 2.5. Since all information about the involved elements is available in the lexical rules, restrictions on possible resultative predicates can also be formulated.

The output of the rules for resultative constructions can be input to passivization (argument blocking, see page 151) and adjective formation lexical rules (see page 160). Therefore examples like those in (508)—some of them are repeated here in a shorter form as (585)—and examples like (586) can be analyzed. The examples in (585) are adjectival participles of unergative verbs and the example in (586) is an adjectival participle of an unaccusative verb.

- (585) a. von plattgefahrenen Tieren
 from flat-driven animals
 'by run-over animals'
- b. plattgefahrene Reifen
 flat-driven tires
 'bald tires'
- c. eine plattgelegene Stelle in ihrem Haar
 a flat-lain place in her hair
 'a flat patch of hair'

- (586) der zugefrorene See⁷⁷
 the shut.frozen lake
 'the frozen lake'

⁷⁷Mannheimer Morgen, 03.02.1998, Lokales; Zugefrorene Seen: schön, aber tückisch.

The lexical rules in (576) and (584) take over the DA specification of the input sign and hence the designated argument can be blocked by the Argument Blocking Lexical Rule. The Adjective Formation Lexical Rule ensures that adjectives like those in (585) predicate over the object of the resultative construction, while adjectives like the one in (586) predicate over the subject of the resultative construction.

Having explained resultative constructions with an adjective as resultative predicate, I want to briefly explain resultative constructions with PP predicates: For instance, the example in (587) is analyzed completely parallel to the adjective cases.

- (587) weil er die Wurst in Scheiben schneidet.
 because he-NOM the sausage-ACC into slices cuts
 'because he cuts the sausage into slices.'

The PP *in Scheiben* is combined with *schneidet* to form a predicate complex. The subject of the predicative PP is realized as the object of the predicate complex and as such receives accusative.

Before turning to the fronting data, I want to discuss some interesting differences between resultative constructions and object predicative constructions: Wilder (1991, p. 227; 1994, p. 232) noticed that object predicatives cannot appear in middle constructions in English.

- (588) a. * German children make happy easily.
 b. * That boy considers handsome easily.
 c. * That girl believes to be intelligent easily.

The same is true for German:

- (589) a. # Deutsche Kinder machen sich leicht glücklich.
 German children make self easily happy
 b. # Dieser Junge hält sich leicht für hübsch.
 this boy holds self easily for handsome
 c. # Dieses Mädchen hält sich leicht für intelligent.
 this girl holds self easily for intelligent

As was discussed in Chapter 2.1.10.6, object predicative constructions can be passivized, and so can resultative constructions. As Wunderlich's examples (1995, p. 455), which were discussed in Section 5.1.4, show, resultative constructions can appear in middle constructions even if the accusative does not get a role from the matrix verb. What is the difference between resultatives and object predicatives? The latter require the embedded predicate to have a subject, but they restrict neither its form nor its referentiality. The lexical entries for resultative constructions that are licensed by the rule (576) embed a predicate that has a referential NP as subject that is affected. If the process that licenses middle constructions is made

sensitive to whether or not the object of a verb gets a semantic role from the verb or from background restrictions, the differences between resultative constructions and object predicative constructions are explained. Such a requirement is similar to the requirement that a verb has to assign a semantic role to its subject in order to allow for passivization (see page 128).

As expected, the fronting examples involving resultative constructions are similar to the fronting data discussed in Chapter 2.2.2. The examples in (568d,e) on page 238—repeated here as (590)—are ruled out for the same reasons as the frontings of parts of the predicate complex in (82c), (153b), and (178).

- (590) a. ??Schneiden müssen Sie das Fleisch klein!⁷⁸
 cut must you the meat small
 b. *Das Fleisch schneiden müssen Sie klein!
 the meat cut must you small

The XCOMP list of the fronted *schneiden* is not empty, but *müssen* requires a complement with an empty XCOMP list. *das Fleisch* cannot be combined with *schneiden* since the XCOMP element of *schneiden* is not saturated, which prevents *schneiden* from functioning as the head daughter in the Head-Argument Schema (see page 88). If the transitive version of *schneiden* is used, *das Fleisch* and *schneiden* can be combined, but it is impossible to integrate *klein* into the clause.

Having provided an analysis for resultative constructions, I now turn to the discussion of an alternative analysis which was suggested by Wechsler (1997) and Wechsler and Noh (2001).

5.3 Alternatives

Wechsler (1997) and Wechsler and Noh (2001) suggest analyses for resultative constructions that are similar to the one proposed here. Wechsler distinguishes two types of resultative constructions: Resultative constructions in which the subject of the resultative predicate is the direct object of the matrix verb (control resultatives) and what they call ECM type resultative constructions in which the subject of the resultative predicate does not fill a semantic role of the matrix predicate. For every verb, a canonical result state is specified. The lexical entry in (591) is an example entry for the verb *freeze*.

- (591) *freeze*:
- $$\left[\begin{array}{c} \text{CAT|SUBCAT} \langle \text{NP}_i \rangle \\ \text{CONT} \left[\begin{array}{c} \text{RELATION} \left[\begin{array}{c} \text{THEME } i \\ \text{freeze} \end{array} \right] \\ \text{BECOME} \left[\begin{array}{c} \text{THEME } i \\ \text{solid} \end{array} \right] \end{array} \right] \end{array} \right]$$

⁷⁸Oppenrieder, 1991, p. 127.

A lexical rule applies to this lexical entry and appends a list with the resultative AP to its SUBCAT list:

(592) *freeze* for resultative constructions:

$$\left[\begin{array}{c} \text{CAT|SUBCAT} \langle \text{NP}_i, \text{AP:} \boxed{} \rangle \\ \text{CONT} \left[\begin{array}{c} \text{RELATION} \left[\begin{array}{c} \text{THEME } i \\ \text{freeze} \end{array} \right] \\ \text{BECOME } \boxed{} \left[\begin{array}{c} \text{THEME } i \\ \text{solid} \end{array} \right] \end{array} \right] \end{array} \right]$$

The semantic contribution of the AP ($\boxed{}$) is identified with the canonical result in the BECOME representation of the matrix verb. Since the subject of the AP is linked to the theme role in the representation of the AP, it is clear that the subject of the matrix predicate and the subject of the AP are coreferent: They both have the index *i*.

Some verbs have a lexical representation in which the result state is specified as optional. An example is *run*:

(593) *run*:

$$\left[\begin{array}{c} \text{CAT|SUBCAT} \langle \text{NP}_i \rangle \\ \text{CONT} \left[\begin{array}{c} \text{RELATION} \left[\begin{array}{c} \text{RUNNER } i \\ \text{run} \end{array} \right] \\ \text{BECOME} \left(\left[\begin{array}{c} \text{LOCATUM } i \\ \text{location} \end{array} \right] \right) \end{array} \right] \end{array} \right]$$

Wechsler and Noh (2001, p.401) suggest using the version with the specified result state to derive (594a) and the version without the specified result state to derive ECM resultatives like (594b).

- (594) a. Robert ran clear of the fire.
b. We run our Nikes threadbare.

The AP-adding lexical rule applies to the entries and produces (595) and (596) respectively:

(595) *run* for control resultative constructions:

$$\left[\begin{array}{c} \text{CAT|SUBCAT} \langle \text{NP}_i, \text{AP:} \boxed{} \rangle \\ \text{CONT} \left[\begin{array}{c} \text{RELATION} \left[\begin{array}{c} \text{RUNNER } i \\ \text{run} \end{array} \right] \\ \text{BECOME } \boxed{} \left[\begin{array}{c} \text{LOCATUM } i \\ \text{location} \end{array} \right] \end{array} \right] \end{array} \right]$$

(596) *run* for ECM resultative constructions:

$$\left[\begin{array}{l} \text{CAT|SUBCAT} \langle \text{NP}_i, \text{AP}:\boxed{1} \rangle \\ \text{CONT} \left[\begin{array}{l} \text{RELATION} \left[\begin{array}{l} \text{RUNNER } i \\ \text{run} \end{array} \right] \\ \text{BECOME } \boxed{1} \end{array} \right] \end{array} \right]$$

Wechsler and Noh (2001) assume a lexical rule that adds an object that is identical to the AP's subject in case the subject of the AP is not bound by an argument of a higher predicate. This results in:

(597) *run* for resultative constructions + raising rule:

$$\left[\begin{array}{l} \text{CAT|SUBCAT} \langle \text{NP}_i, \boxed{1} \text{ NP}, \text{AP}[\text{SUBJ} \langle \boxed{1} \rangle] : \boxed{2} \rangle \\ \text{CONT} \left[\begin{array}{l} \text{RELATION} \left[\begin{array}{l} \text{RUNNER } i \\ \text{run} \end{array} \right] \\ \text{BECOME } \boxed{2} \end{array} \right] \end{array} \right]$$

By introducing the canonical result state into the representation of simplex verbs, Wechsler and Noh (2001) have some control over the semantic type of predicates that can appear in control resultative constructions. For ECM type resultatives they assume that no restrictions apply.

The account that I formulated above is less restrictive than the one proposed by Wechsler (1997) and Wechsler and Noh (2001). In the data section, I made very vague remarks about the role of the utterance context for the felicity of resultative constructions. I did not attempt a formalization. However, the account that was presented assigns exactly one structure to (493)—repeated here as (598):

- (598) Er fuhr das Auto kaputt.
 he drove the car broken
 'He wrecked the car by driving.' (his car or someone else's)

An external interpretation process that takes into account contextual information determines whether the driven car or some other car was destroyed. In a system with a difference between control and ECM resultative constructions, one would assume that the control analysis is used for the reading where the actually driven car got damaged and the raising analysis is used for the reading where some car not involved in the driving event got damaged.

In Wechsler and Noh's account, the canonical result state of the movement verb is a location (p. 401). The adjective in (598) does not specify a location (compare also the examples (490) with *müde laufen* ('run tired') on page 213). So the only possible analysis in Wechsler's system is the ECM analysis, i.e. the one without any restrictions on the result state. This means that the advantage of Wechsler's account, namely that one can rule out subjective properties or other properties that

do not qualify as result states in control resultative constructions by specifying a canonical *become* predicate is lost for such examples. Since there are no restrictions on the result state in ECM constructions and since this is the only option left for analyzing (598), there is nothing that rules out (599):

- (599) ?* Er fuhr das Auto häßlich.
 he drove the car ugly
 ‘He drove and as a result the car got ugly.’

Another drawback of Wechsler’s approach is that it is unclear how prepositional secondary predicates as in (544) can be analyzed. (544a) is repeated here as (600) for convenience:

- (600) [...] und im Winter froz sein Wasser zu Eis.⁷⁹
 and in.the winter froze its water to ice

In (600), the PP *zu Eis* specifies the result. The semantic representation of the NP does not match the specified canonical result *solid*. One could argue that a property of ice is to be solid, but this does not necessarily extend to the other examples in (544): A black mass is not necessarily liquid. One can imagine integrating a kind of compatibility check for these result PPs, but this is certainly a rather complicated issue.

I therefore stick to the analysis that does not formulate any restrictions and defer the correct semantic representation of such restrictions to further research.

5.4 Summary

In this chapter, I have developed an analysis for resultative constructions that treats the resultative predicate as a complement in a complex predicate construction. The complex predicate is licensed in the lexicon by a lexical rule that accounts both for the resultative semantics of the resulting complex predicate and for the valence change. The lexical rules that I suggested above do not combine two adjacent elements. Rather, they license for every input entry another lexical item that has the potential to combine with another predicate. This predicate may be modified or may be extracted or intraposed into the *Mittelfeld*. The matrix verb may appear in clause initial position separated from the embedded resultative predicate. The resultative PP or AP is a complement of the V and they are realized similarly to other embedded predicates in copula constructions and in subject and object predicatives. The difference between these predicative constructions and resultative constructions is that the lexical entries for the former are listed in the lexicon while the lexical items for the latter are licensed by lexical rules. What these constructions have in common is that the subject of the embedded predicate may be permuted with other dependents of the matrix predicate. As in object predicative constructions, the subject of the embedded predicate in a resultative construction

⁷⁹Frankfurter Rundschau, 16.09.1999, p. 3.

with an unergative verb is realized as accusative in active sentences and as nominative in passive sentences. This is explained by the assumption of structural case for subjects in German and a Case Principle that interacts with valence changing operations like passive.

The fact that this complex predicate formation for resultative predicates is done in the lexicon explains why certain resultative constructions get lexicalized and drift away in meaning and why certain semantically plausible resultative constructions are blocked.

Particle Verbs

Building on the analyses developed so far, I will now show how particle verbs can be integrated into the wider picture. I will show that the syntactic properties of particle verbs resemble the properties of other constructions we have seen so far and I will argue that particle verbs should be analyzed as part of the predicate complex and that the base verb is the head of the construction. I will provide lexical entries for non-transparent particle verbs and lexical rules that license lexical entries for productive particle verb combinations.

This chapter is more complex than previous chapters since a large part of it is devoted to morphology. In the morphology sections, I will discuss both inflection and derivation and suggest a lexical rule-based analysis.

6.1 The Phenomenon

In German there is a class of verbs that consists of two parts that can be separated by morphological material (601) and by syntactic material (602). The part that appears to the left of the main verb in verb-final position and that is stranded when the finite verb is in initial position is traditionally called a separable prefix (*abtrennbares Präfix*). Since prefixes are by definition not separable, most researchers use the term (verbal) particle nowadays.¹ In (601), the particle *über* and the stem of the base verb (*setz-*) are separated by the *ge-* prefix for the participle and by the infinitive marker *zu*.

- (601) a. Der Fährmann hat Karl übergesetzt.
 the ferryman has Karl across.taken
 ‘The ferryman has taken Karl across.’
 b. Der Fährmann versucht, Karl überzusetzen.
 the ferryman tries Karl across.to.take
 ‘The ferryman tries to take Karl across.’

¹Other terms are *Verbzusatz* and preverb. Stiebels (1996, p. 10) uses the term *Verbzusatz* to refer to both particles and prefixes. Fourquet (1974) uses the term particle both for prefixes and for particles that can be separated from their verb. Lüdeling (1998) uses the term preverb in a sense that also includes ordinary adverbs.

In (602a,b), where the verb is in the left sentence bracket, the particle is stranded.

- (602) a. Setzt der Fährmann Karl über?
 takes the ferryman Karl across
 'Does the ferryman take Karl across?'
 b. Der Fährmann setzt Karl über.
 the ferryman takes Karl across
 c. daß der Fährmann Karl übersetzt.
 that the ferryman Karl across.takes

The particle is serialized to the right of non-extraposed complements and adjuncts and constitutes the right sentence bracket.

Many particles correspond to adjectives (603a), adverbs (603b), nouns (603c), prepositions (603d), or verbs (603e).

- (603) a. Sie legten die Sümpfe trocken.
 they layed the marshes dry
 'They drained the marshes.'
 b. Er lief weg.
 he ran away
 c. Er fuhr Rad.
 he went.by bike
 'He went by bike.'
 d. Er färbte den Mantel um.
 He dyed the coat PART
 'He dyed the coat a different color.'
 e. Er blieb sitzen.
 he stayed sit
 'He had to repeat a year (in school).'

There are particles like *dar* (*darlegen* 'to explain', 'to expound'), *inne* (*innehalten*, 'to stop', 'to pause') and *acht* (*achtgeben*, 'to take care', 'to watch out') that do not fall into one of the mentioned categories. Furthermore, there are particle verbs for which there is no corresponding verb that lacks the particle like *abstatten* ('to visit') in *einen Besuch abstatten* and *anstrengen* ('to make an effort', 'to try hard') in *sich anstrengen*. Particle verbs can contain a verb that is derived from an adjective (*aufheitern* ('to brighten-up', 'to clear up', 'to cheer up'), *aufhellen* ('to brighten (up)')) or a noun (*einölen* ('to rub with oil'), *eindellen* ('to make a bump in s.t.'), *ankreuzen* ('to mark with an '×)'), *anprangern* ('to denounce')).²

²Stiebels and Wunderlich, 1992, p. 20.

6.1.1 What are Particle Verbs?

In many cases it is not obvious whether certain verbs should be treated as particle verbs or whether they are regular combinations of verbs and adverbs or verbs and nouns. Many researchers, including me (see Müller, 1999a, Chapter 19) have become confused by orthographic conventions, but in some respect the German orthography rules are rather arbitrary. See also page 212 for different spellings of resultative constructions. So in some cases, verbs and dependent parts were written as two words (604c) and in others they were spelled as one word (604d). This was changed in the orthographic reform. According to Duden (1996, R 38), example like (604c,d) are written like (604c) now.

- (604) a. Ich fahre Bus.
I go.by bus
- b. Ich fahre Rad.
I ride bike
- c. Ich bin Bus gefahren.
I am bus went.by
'I went by bus / rode a bus.'
- d. Ich bin radgefahren.
I am bike.ride
'I rode a bike.'

Since *radfahren* and *Bus fahren* have the same properties, they should be treated in the same way. In the remainder of this section, I will seek to establish criteria for what has to be counted as a particle verb.³

6.1.1.1 Stress

In particle verb combinations, the particle gets the word accent. The particle can get the main accent of the whole predicate or sentence or, if a complement is present, it can get secondary stress.

- (605) a. daß Hans ábfährt.
that Hans leaves
- b. daß Hans mir fólgendes mítteilte.
that Hans me the.following PART (with).shared
'that Hans told me the following.'

Separable verbs behave like compounds in this respect. In homonymous prefix verb combinations the stress is on the main verb.

³The subsections on non-productive particle verb combinations, the fronting of particles, the separation of particle and verb in verb-final contexts, and the one about the Ripuarian and Bavarian data are also published as Müller, 2002d.

- (606) a. weil er die Oma úmfuhr.
 since he the grandmother PART (down).runs
 ‘since he ran the grandmother over.’
- b. weil er die Oma umfúhr.
 since he the grandmother PREFIX(around).drove
 ‘since he drove around the grandmother.’

6.1.1.2 Fronting

One criterion that is sometimes used for the definition of the notion particle verb is the non-frontability of the particle (Zifonun, 1999, p. 212). However, as the data that will be presented in Section 6.1.2 show, various kinds of particles can be fronted under certain conditions.

6.1.1.3 Referentiality

Zeller (1999, Chapter 3.2.2) looks at data like the sentences in (607) and observes a difference in the referentiality of the prepositional particle and the pronominal adverb.

- (607) a. Peter will einen Kreis herausschneiden.
 Peter wants a circle out.cut
 ‘Peter wants to cut out a circle.’
- b. Peter will einen Kreis ausschneiden.
 Peter wants a circle out.cut
 ‘Peter wants to cut out a circle.’
- c. Hier strömt Gas heraus.
 here streams gas out
 ‘There’s a gas leak here.’
- d. Hier strömt Gas aus.
 here streams gas out
 ‘There’s a gas leak here.’

Verbs that occur with a particle that corresponds to a pronominal adverb that starts with an *h*, he calls *h*-verbs. Following McIntyre (2001b), he formulates the generalization that the particles of *h*-verbs like the ones in (607) are always referential and specific and the prepositional particles do not refer and are not specific. Zeller and McIntyre use referentiality as a criterion for being a particle verb: particles of particle verbs do not refer. Zifonun (1999, p. 223) also observes that what she calls preposition-based adverbs can be replaced by PPs in a regular way. Zifonun’s preposition-based adverbs are not restricted to *h*-elements, but also include pronominal adverbs with *da* (*there*) like (*darin* (‘there.in’), *daraus* (‘there.out’), *davor* (‘there.before’)). Verbs like *hereinkommen* (‘to come in’), *hereingehen* (‘to go in’), *hereinschauen* (‘to look in’), *hereinblinzeln* (‘to peak in’), she calls ‘particle verbs in a broader sense’. ‘True particle verbs’ are verbs where a change of

meaning has taken place. So (608a) is a particle verb and (608b) is a particle verb in the broader sense since *herein* can be replaced by *in das Zimmer* ('in the room') in (608b).

- (608) a. Er hat ihn (den Mann) hereingelegt. (in a normal context:
he has him (the man) here.in.laid true particle verb)
'He took him for a ride.'
- b. Er hat ihn (den Anzug) hereingelegt. (particle verb
he has him (the suit) here.in.laid in a broader sense)
'He put it in.'

6.1.1.4 Depictives and Resultatives vs. Lexicalized Forms

Other problems with orthographic conventions are posed by sentences like (609).

- (609) a. weil er ihn totschrägt.
because he him dead.beats
'because he beats him to death'
- b. weil er ihn halb tot schlägt.
because he him half dead beats
'because he beats him almost to death'

Words like *totschlagen* ('to beat to death') and *totarbeiten* ('to work to death') were written as one word (Duden, 1951). This was changed in the orthographic reform. According to the 1996 version of the Duden words are spelled separately if the first part is an adjective that can be used comparatively (Duden, 1996, R 39). Despite the spelling in (609a), it is not reasonable to treat verbs like *totschlagen* as particle verbs. They are normal resultative constructions that can be derived in a regular way (Oppenrieder, 1991, Chapter 1.5.3.7.4).

Other verbs were probably taken to be resultative constructions because of their spelling (see for instance Rosengren, 1995, p. 95).

- (610) Der Arzt schreibt Peter krank.
the doctor writes Peter sick
'The doctor signs Peter off sick.'

The sentence has a resultative reading, where the writing of the doctor causes Peter to get sick. The reading may be plausible in a context in which the prescriptions of the doctor are so expensive that Peter gets sick because he is worried about the bills for the pills. But the normal use of *krank schreiben* is given in the translation. This reading does not imply that the one who has the certificate is sick since firstly malingerers can also get the certificate and secondly one can already have recovered but still have the certificate, i. e. be *krank geschrieben*. Because of the non-transparent meaning, I assume that the version of *krank schreiben* in (610) is a particle verb.

For the same reason, I assume that *kaputtgehen* ('to get broken') is a particle verb and not a resultative construction with reference to the subject as is assumed by Rosengren (1995, p. 106).

- (611) Die Vase geht kaputt.
 the vase walks/goes broken
 'The vase breaks.'

The broken state of the vase is not caused by walking.

In (612a) the idiomatic reading is obvious.⁴

- (612) a. Peter hat krank gefeiert.
 Peter has sick celebrated
 Idiomatic: 'Peter played hooky.'
 Depictive: 'Peter celebrated sick.'
 b. Peter hat seine Nachbarn krank gefeiert.
 Peter has his neighbors sick celebrated
 'Peter's parties made his neighbors ill.'

(612a) has two readings. Firstly, there is the idiomatic reading where Peter pretends to be sick and then there is the depictive reading where Peter is sick while partying. In (612b) *krank* is used in a resultative construction. The difference between the idiomatic reading of (612a) and the depictive or resultative construction is that the adjective is not a predicate in the idiomatic reading (Zeller, 1999, p. 97).

To sum up, I regard examples like (610), (611), and (612a), that have lexicalized meanings, as particle verbs while transparent cases like (609) are treated as predicative constructions despite their spelling.

6.1.1.5 The Syntactic Activeness of Particles

Another possibility for differentiating between particles and elements of the categories they are related to is to examine their syntactic properties. Many particles have lost their combinatorial potential or do not take part in usual inflectional alternations. These phenomena will now be discussed in more detail.

Adjectives: Comparatives and Superlatives Zeller notes that the form of adjectives in particle verb combinations is fixed.

- (613) a. Peter sieht fern.
 Peter sees remote
 'Peter watches TV'
 b. * Peter sieht ferner.
 Peter sees remote.more

They cannot appear in the comparative or superlative.

⁴The examples in (612) are taken from Zeller, 1999, p. 97.

Nouns: Modification and Passivization As Uszkoreit (1987, p. 103) observed, in examples like (604), it is impossible to modify the particle *Bus* with an adjective.

- (614) * Er ist höchst selten frühen Bus gefahren.
 he is extremely seldom early bus rode
 Intended: 'He very rarely rode with an early bus.'

A further difference was noted by Booij (1990, p. 49) for Dutch. The negation element *nicht* can be combined with a determiner *ein(ig)-* to form *kein*. Bech (1955, p. 76–78) called this combination *cohesion* (*Kohäsion*). Usually the combination of the particle with *kein* is not possible. If one combines *Bus fahren* with *keinen* one gets a referential reading of the NP.

- (615) a. Er ist keinen Bus gefahren.
 he is not.a bus rode
 'He did not ride a bus (but a bike).'
 b. Er ist nicht Bus gefahren.
 he is not bus rode
 'He did not ride a bus (but a bike) / he did not go by bus (but by train).'

The reading of *busfahren* where someone else drives the bus and *er* ('he') refers to a passenger is not available in (615a). For verbs like *Probe fahren* the combination with *kein* is not possible.

- (616) Er fuhr das Auto * keine Probe / nicht Probe.
 he drove the car not.a probe not PART
 'He did not do a test drive with the car.'

This test can also be used to decide whether mass nouns and bare plurals should be treated as particles or not. So in addition to the difference in referentiality that can be observed (see Section 6.1.1.3), the ability to combine with a (negated) determiner without changing the meaning, except as far as negation is concerned, is a further criterion that can be used to determine whether noun-verb combinations are particle verb combinations: If a (negated) determiner is impossible, the combination is a particle verb construction.

Apart from this, a grammar that assumes that elements like *Karten* in (617) are not objects predicts the facts in the example (617b) by Kroch and Santorini (1991, p. 295).⁵

⁵See also Abraham, 1986, p. 19; Kathol, 1995, p. 248; Kathol, 1998, p. 232.
 The sentence (i) is also possible, but it has a different meaning.

(i) (Die) Karten wurden gespielt.
 the cards were played

(i) means to use certain cards in a game.

- (617) a. Sie spielten oft Karten.
 they-PL played-PL often cards-PL
 'They often played cards.'
- b. Es wurde oft Karten gespielt.
 it-EXPL was-SG often cards-PL played
 'There was frequent card playing.'

The noun *Karten* does not take part in the object-to-subject promotion that takes place in passive constructions. If it did, the passive auxiliary *wurde* would have to agree with the subject *Karten* in number, which is not the case.

Note that *Karten spielen* behaves differently from idiomatic expressions like *Leviten lesen* as those allow a personal passive.⁶

- (618) a. Er las dem Burschen die Leviten.
 he read-SG the scoundrel the Leviticus-PL
 'He read this scoundrel the riot act.'
- b. Dem Burschen wurden die Leviten gelesen.
 the scoundrel were-PL the Leviticus-PL read
 'This scoundrel was read the riot act.'

In (618b) the accusative object *die Leviten* is raised to subject. The finite verb shows plural agreement. Therefore the examples in (617) cannot be explained on the basis of the non-transparency of *kartenspielen*.

Verbs: Passive, Double Infinitives, Scope The exceptional behavior of the sentences in (619) that was noted by Reis (1973) and Höhle (1978, p. 170) can be explained along the same lines. These sentences are passive variants of what seems to be an AcI construction with *lassen*, but as the examples in (620) show, the passivization of *lassen* sentences usually is impossible.

- (619) a. Der Hammer wurde fallen gelassen.
 the hammer was fall let
 'The hammer was dropped.'
- b. Die beiden wurden warten gelassen.
 the both were wait let
 'The two of them were left to wait.'
- c. Karl wurde einfach stehen gelassen.
 Karl was just stand let
 'Karl was just left standing there (on his own).'
- d. Das Licht wurde brennen gelassen.
 the light was burn let
 'The light was left on.'

⁶See Reis, 1985, p. 153 on similar data with the *kriegen* passive.

- e. Die Leiche wurde dort liegen gelassen.
 the corpse was there lie let
 'The corpse was left (lying) there.'
- (620) a. * Karl wurde beten gelassen.
 Karl was pray let
 Intended: 'Karl was allowed to pray.'
- b. * Karl wurde eintreten gelassen.
 Karl was enter let
 Intended: 'Karl was allowed to come in.'
- c. * Karl wurde den Hund streicheln gelassen.
 Karl was the dog stroke let
 Intended: 'Karl was allowed to stroke the dog.'
- d. * Der Hund wurde streicheln gelassen.
 the dog was stroke let
 Intended: 'The dog was allowed to be stroked.'

This contrast can be explained if one analyzes the verbs in (619) as complex verbs, as Reis (1973, p. 524) already noted.⁷ Höhle notes further that the verbs that allow passivization while embedded under *lassen* do not obligatorily occur in double infinitive constructions, i. e. with a so-called *Ersatzinfinitiv*. In perfect constructions, it is usually a participle that is embedded under *haben* ('have'), but when modals and AcI verbs are embedded under *haben*, they obligatorily appear in the infinitive form, as is shown by the examples in (621). Since there are two verbs in the infinitive form in sentences like (621), such constructions are called double infinitive constructions.

- (621) a. Sie haben Karl beten (*ge)lassen.
 they have Karl pray let
 'They let Karl pray.'
- b. Sie haben Karl eintreten (*ge)lassen.
 they have Karl enter let
 'They let Karl enter.'
- c. Sie haben Karl den Hund streicheln (*ge)lassen.
 they have Karl the dog stroke let
 'They let Karl stroke the dog.'
- d. Sie haben den Hund streicheln (*ge)lassen.
 they have the dog stroke let
 'They let somebody stroke the dog.'

⁷ But see Reis, 1976a, p. 68.

The perfect of the verbs in (619) is formed with *gelassen* instead of *lassen*, as (622) shows:⁸

- (622) a. Sie haben den Hammer fallen gelassen.
 they have the hammer fall let
 'They dropped the hammer.'
- b. Sie haben die beiden warten gelassen.
 they have the both wait let
 'They let the two of them wait.'
- c. Sie haben Karl einfach stehen gelassen.
 they have Karl just stand let
 'They just left Karl standing there (on his own).'
- d. Sie haben die Kinder schlafen gelassen.
 they have the children sleep let
 'They let the children sleep.'
- e. Sie haben das Licht brennen gelassen.
 they have the light burn let
 'They left the light on.'
- f. Sie haben die Leiche dort liegen gelassen.
 they have the corpse there lie let
 'They left the corpse (lying) there.'

There is some uncertainty about the use of the *Ersatzinfinitiv*. The Duden (1991) admits both forms of *fallenlassen* for verbs with the transferred reading. I do not find all of the examples in (622) totally acceptable. However, the sentences in (623), which have the transferred reading, are fine.

- (623) a. Bereits Ende 1998 hatte die Behörde in der gleichen Angelegenheit
 already end 1998 had the authority in the same matter
 ein Bußgeldverfahren fallen gelassen.⁹
 a fining.system dropped let.
 'The authority had dropped a fining system in the same matter as early as 1998.'
- b. Anna Skljaretskaja vom Vagrus Verlag erklärte am Freitag, sie habe
 das Projekt wegen der Lage auf dem Balkan fallengelassen.¹⁰
 'Anna Skljaretskaja of the Vagrus publishing house declared on Friday that she has dropped the project because of the situation in the Balkans.'

⁸I changed the pronoun *wir* ('we') that was used in Höhle's examples to *sie* ('they').

⁹taz, 27.01.2000, p. 18.

¹⁰taz, 29.03.1999, p. 28.

The same uncertainty can be observed with some other particle verbs that have a base verb for which an *Ersatzinfinitiv* exists.¹¹

- (624) Dafür hat man aber auch fünfmal ranmüssen.¹²
 there.for has one but too five.times PART.must
 'Five sessions were necessary for that.'

Although I prefer *rangemußt* in (624), the sentence is not totally out.

If the verbs in (619) and (623) together with *lassen* are analyzed as particle + verb combinations, the difference in passivizability and perfect formation is explained. Further evidence for this view is that the adverbs in (625) have scope over the complex verb instead of *fallen* ('to fall') only.

- (625) Der Hammer wurde schnell / oft fallen gelassen.
 the hammer was fast often fall let
 'The hammer was dropped fast/often.'

This is completely analogous to the cases where the verbs are written together.

- (626) Karl hat Maria nicht sitzenlassen.
 Karl has Maria not sit.let
 'Karl didn't leave Maria.'

If one tries to impose the narrow scope reading on a sentence like (626), the verb takes on its literal meaning. So we are faced with the same situation as with *Bus fahren* vs. *radfahren*. The orthographic rules do not conform to the syntactic facts.¹³

After this discussion of criteria for being a particle verb, I now discuss one of the proposed criteria, namely the frontability of the particle, in more detail.

6.1.2 Fronting

Particles can be fronted, although this is often denied. There are different claims about frontability that will be explored in the following. I examine whether there are restrictions on the type of particle that influence frontability. Section 6.1.2.1 deals with cases of simple fronting, i. e. cases where just the particle is fronted and Section 6.1.2.2 deals with examples in which the particle is fronted together with other material.

¹¹Note that there is just one option for *ranlassen*.

(i) Sie hat ihn nicht rangelassen /* ranlassen.
 she has him not at.it.let
 'She didn't let him touch her/him/it. or She didn't let him get at her/him/it.'

¹²taz, 26.04.1993, p. 17.

¹³According to the new rules, combinations of verbs are always spelled separately. The spelling *sitzen bleiben* is ambiguous between the lexicalized and the compositional form.

6.1.2.1 Simple Fronting

In the following subsection, I first repeat claims that were made in the literature with regard to particle fronting and then examine fronting patterns that involve particles that are homonymous to elements of various syntactic categories.

After the discussion of the data I try to provide an explanation for the acceptability differences of fronting patterns that can be observed.

What Can be Fronted? Bierwisch (1963, p. 103) claims that particles like *ab* ('off'), *an* ('to'), *auf* ('on'), *aus* ('out'), *ein* ('in'), *über* ('over'), *unter* ('under') are not frontable. But as the examples in this section show, there are instances of particle fronting for many of these particles. The frontability is not a property of the particle but rather a property of the particle verb.

Haider (1990b, p. 96; 1993, p. 280; 1997a, p. 35–36; 1997b, p. 86–87, p. 93)¹⁴, Fanselow (1993, p. 68), Neeleman and Weermann (1993, p. 473), Kiss (1994, p. 100), Haider, Olsen, and Vikner (1995a, p. 17), Kathol (1996), Olsen (1997b, p. 307; 1997c, p. 21), and Eisenberg (1999, p. 306) deny the frontability of particles. These authors do not mention any exceptions and some of them take the non-frontability claim as evidence for ruling out certain sentence structures for German.

Zifonun (1999, p. 227) uses the non-frontability as a defining property of particle verbs. She explicitly excludes cases like (627) from the class of 'true' particle verbs since these verbs are entirely compositional and the particle also appears as pronominal adverb.

- (627) Herein kommen wir schon, aber wie heraus.
 there.in come we anyway but how there.out
 'We will get in, but how are we going to get out.'

However, on page 223 she states that all particle verbs that have a preposition other than *mit* as particle are 'true' particle verbs. As the data below will demonstrate, even particles that have the form of prepositions can be fronted. Non-frontability of the particle therefore cannot be a necessary condition for being a particle verb.

Engel (1977, p. 213; 1994, p. 192) claims that only particles that correspond to copula particles like those in (628) can be fronted.

- (628) a. Das Licht ist an.
 the light is on
 b. Die Tür ist zu.
 the door is closed

The corresponding examples with the particle fronted are given in (629):

¹⁴The sentence (667b) contains a particle together with an argument of the verb in fronted position. This sentence was taken from the main text of a paper by Haider. Haider (1993, p. 203) discusses frontings of copula particles like in (629) and an example with *feststehen* parallel to (641a).

- (629) a. An sollst du das Licht machen.
on shall you the light make
'You shall switch on the light.'
- b. Zu sollst du die Tür machen.
close shall you the door make
'You shall close the door.'

Grewendorf (1990, p. 106) claims that only those particles which assign a theta role can be fronted. Stiebels and Wunderlich (1992, p. 3) give the following examples and claim that fronting is only possible if the particle occurs together with resultatives or directionals.¹⁵

- (630) a. (Ganz) zu hat sie die Tür geschlagen.
completely shut has she the door hit
'She slammed the door completely shut.'
- b. (Weit) hinaus ist der Ball geworfen worden.
far out is the ball thrown got
'The ball was thrown far out.'

Similarly, Webelhuth and Ackerman (1999) developed an LFG analysis that seeks to explain what kind of particles can be fronted. They claim that only particles that have a resultative meaning can be fronted.

There are some authors, however, who realize that the fronting of particles is possible in a variety of cases that do not fall under those described above (Reis, 1976a, p. 68; Lötscher, 1985, p. 211; Hoeksema, 1991b; Bennis, 1991; Hoberg, 1997; Lüdeling, 1997).

Since it is so often claimed that particles are non-frontable, an extensive discussion of data will be provided in the remainder of this subsection. In what follows, I discuss particles that are homonymous to nouns, verbs, adjectives, and prepositions.

The examples in (631) contain particles in fronted position that are related to nouns.

¹⁵I find sentence (630a) rather strange. The reason for this is that it is a part of the meaning of the verb *zuschlagen* that the door is closed afterwards. So there is no way to leave the door partially open while slamming it.

Note furthermore that while (630b) can be uttered to establish a contrast, (630a) cannot. The verb *aufschlagen*, which could be used to express this contrast, is usually not used for the opening of doors. It can be applied to books though. If one uses (i) this would imply some beating.

- (i) Er hat die Tür aufgeschlagen.
he has the door open.beaten
'He rammed the door open.'

Stiebels (1996, p. 160–161) notes a difference in frontability with different base verbs. She notes that particle frontings in particle verb constructions where the base verb is a support verb like *machen* are better since the verb is semantically almost empty.

- (631) a. *Bus* würde Karl gerne *fahren*.
 bus would Karl with.pleasure ride
 'Karl would like to go by bus / to ride a bus.'
- b. „Liebe Freundinnen und Freunde, meine Damen und Herren“, redet er sein Publikum an, das ihm respektvoll applaudiert.
Feuer jedoch *fängt* offenbar keiner.¹⁶
 fire however catches clearly nobody
 '“Dear friends, Ladies and Gentlemen”, thus he addresses his audience, gaining a round of respectful applause. However, it is clear that nobody is carried away.'
- c. Die Volkspartei SPD, von ihrer Geschichte her eigentlich zuständig für die Lage der „Grauen“, besteht überwiegend aus Büroangestellten, Lehrern und Akademikern.
Schicht hat von denen keiner *gearbeitet*.¹⁷
 PART(shift) has of those nobody worked
 'None of them has worked shifts.'
- d. *Schlange stehen* bereits Hans Jürgen Syberberg, der noch 1990 von der Entscheidungskraft der SS-Leute an der Rampe von Auschwitz schwärmte, und Botho Strauss, der singende Brandenburger Bock, der das Höhere Faseln ebenso beherrscht.¹⁸
 'Hans Jürgen Syberberg, who was still raving in 1990 about the SS men's decisiveness at the ramp of Auschwitz and Botho Strauss, the singing Brandenburg stud who is also well-versed in stilted gibberish, are already queuing up.'

In (632) the particles correspond to verbs.¹⁹

- (632) a. *Verloren geht* dabei *keiner*, [...] ²⁰
 lost gets there.during nobody
 'Nobody gets lost during this.'
- b. *Verloren gingen* danach *auch die Spiele gegen die*
 lost went there.after also the games against the

¹⁶Süddeutsche Zeitung, 09.04.1998, p. 3.

¹⁷Spiegel, 48/1999, p. 305. From an article about sleeping disorders, in which problems of shift-workers are discussed.

¹⁸Wiglaf Droste, taz, 27.02.1998, p. 20.

According to the orthographic rules, *Schlange stehen* is spelled discontinuously. Like *Bus fahren* / *mit dem Bus fahren*, *Schlange stehen* ('to stand in a queue', 'to queue up') is derived from *in einer Schlange stehen*. I treat *Schlange stehen* as a particle verb. See also Wunderlich, 1987a, p. 98.

¹⁹Stiebels and Wunderlich (1994, p. 962) list *verlorengehen* ('get lost', 'lose'), *stiftengehen* ('to hop it'), *spazierengehen* ('to go for a walk', 'stroll'), and *flötengehen* ('to go west') as particle verbs.

²⁰Mannheimer Morgen, 01.07.1998, Lokales; Wenn Ruben die Eskimorolle zeigt.

Humboldt-Realschule und das Benz-Gymnasium.²¹

Humboldt.secondary.school and the Benz.high.school

'After that, the games against the Humboldt secondary school and the Benz high school were also lost.'

Since these particle verbs resemble ordinary verbal complexes, it is not really surprising that such examples can be found.

In (633) the particles correspond to adverbs.

- (633) a. *Weiter macht er aber doch.*²²

PART(further) makes he but anyway

'But he carries on anyway.'

- b. *Auseinander gehen die Meinungen über Grundsätzliches in der*
PART (apart) go the opinions about fundamental.(things) in the
Grüne-Politik, vor allem aber auch um die rot-grüne
green politics before all but also around the red-green
*Koalition.*²³
coalition

'Opinions differ on fundamental issues in green politics, but above all also on the red-green coalition.'

In (634) and (635), the particle corresponds to a pronominal adverb.

- (634) *Heraus sprang ein junger Offizier.*²⁴

out jumped a young officer

'A young officer jumped out.'

In (634) we have a particle verb in the broader sense, but the examples in (635) are 'true' particle verbs.

- (635) a. *Papier ist geduldig, und raus kommt sowieso nichts dabei.*²⁵

paper is patient and PART(out) comes anyway nothing this.at

'Anyone can write drivel, and it doesn't lead to anything anyway.'

- b. *„Wir wollten ein Rennpferd entwickeln, und heraus kam ein*
we wanted a racehorse to.develop and out came a
*Kamel.*²⁶
camel

'We wanted to develop a racehorse and ended up producing a camel.'

²¹Mannheimer Morgen, 13.03.1998, Lokales; Basketballteam auf Erfolgswelle.

²²taz, 13.07.1999, p. 20.

²³NEGRA corpus.

²⁴Uszkoreit, 1987, p. 100.

²⁵taz berlin, 28./29.11.1998, p. 25.

²⁶Spiegel, 50/1999, p. 88.

- c. *Raus kam* der „Schwindel“ erst gestern: Etwa 20 Demonstranten protestierten vor dem Tor der niederbayrischen Kaserne gegen die Arrestierung.²⁷

‘The fraud was only revealed yesterday: about 20 demonstrators protested against the arrest in front of the gates of the barracks in northern Bavaria.’

- d. *Dagegen* ist zu halten, daß die moderne Mathematik eine PART (against.this) is to hold that the modern mathematics a reine Strukturwissenschaft ist, die nichts mit Quantifikation zu pure structure.science is which nothing with quantification to tun hat.²⁸
do has

‘As an argument against this, it has to be said that modern mathematics is a pure structure science which has nothing to do with quantification.’

The adverb in (635c) can be used predicatively as in (636).

- (636) Jetzt ist es raus.
now it is out
‘It is out now.’

This is not the case for the *rauskommen/herauskommen* in (635a) and (635b). These verbs are used metaphorically. The same is true for *dagegenhalten*. The original meaning of *halten* is not present anymore.

The cases in (637) are interesting since they are quite frequent.

- (637) a. *Dazu* kommt der Krawalltourismus.²⁹
PART(there.to) comes the riot.tourism
‘In addition to that there is riot tourism.’
b. *Hinzu kommen* die in Haider (1992a) formulierten Bedenken gegen die Postulation von AGR-Obj im Deutschen.³⁰
‘In addition to that there are the doubts against the postulation of an AGR-Obj for German that were formulated in Haider (1992).’
c. *Hinzukommt*, daß Partikel-Verb-Kombinationen durchaus produktiv sind, ...³¹
‘In addition to that, particle verbs are productive.’

²⁷taz, 06.08.1998, p. 9.

²⁸In the main text of Heringer, 1973, p. 93.

²⁹taz berlin, 08./09.05.1999, p. 25.

³⁰In the main text of Fanselow, 1993, p. 12.

³¹In the main text of Grewendorf, 1990, p. 116. On page 119 in the same paper there is another *hinzukommt* example. Other examples with the same spelling can be found in the main text of Fourquet, 1974, p. 100.

- d. [...], *hinzu kommt* eine reflexive Ellipse: [...]³²
 'There is also a reflexive ellipsis.'
- e. *Hinzu kommt*, daß zwei Dative aus diesen Klassen in einem Satz nicht zusammen auftreten können, ...³³
 'In addition to that, it is impossible to have two datives from these classes in one sentence.'

At first glance, it might appear that *dazukommen* and *hinzukommen* should be treated as 'true' particle verbs since a change in valence and selectional restrictions in comparison to the simplex verb *kommen* can be observed. The verb *kommen* as it is used in *Peter kommt*. ('Peter comes.') allows neither for abstract entities as subject, nor for clausal subjects. If *kommen* is used with a clausal complement, a different meaning results that cannot be used together with the pronominal adverb to derive the meaning of utterances like (637a) or (637c) compositionally.

- (638) a. ?? Der Krawalltourismus kommt.
 the riot.tourism comes
 'There will be riot tourism.'
- b. * Daß Partikel-Verb-Kombinationen durchaus produktiv sind
 that particle.verb.combinations quite productive are
 kommt.
 comes

However, there is another variant of *kommen* that obligatorily takes a locative PP and a NP (639a–c) or a sentential complement (639d).

- (639) a. Das Bild kommt an die Wand / hinter den Schrank.
 the picture comes on the wall behind the cupboard
 'The picture is to go on the wall / behind the cupboard.'
- b. Zu den Tomaten kommen noch Gurken.
 to the tomatoes come still cucumbers
 'Cucumbers as well as tomatoes.'
- c. Zu diesen Merkwürdigkeiten kommen jene, auf die ich schon
 to these oddities come those on which I already
 [...] hingewiesen habe.³⁴
 indicated have
 'To these oddities come those that I have already pointed out.'
- d. Zu dieser Magenverstimmung aus frühster Jugend kam, daß sich Herr
 Taziet den ohnehin verdorbenen Magen restlos verdorben hatte, als

³²In the main text of Zifonun, 1999, p. 220.

³³In the main text of Olsen, 1997a, p. 310.

³⁴In the main text of Haider, 1986a, p. 19.

er, ans Krankenbett gefesselt, gezwungen gewesen war, «wiederholt Kohlstrünke» zu essen, [...]»³⁵

‘To this childhood indigestion came that Mr Taziet had upset his already upset stomach as he had been forced to eat cabbage stalks repeatedly when he was bed-ridden.’

So, it is reasonable to assume that the *hinzukommen* examples are instances of the pattern in (639) with the pronominal adverb filling the slot of the PP complement. Therefore the verbs in (637) should not be regarded as ‘true’ particle verbs.

In (640)–(641) the particles are related to adjectives.

- (640) a. *Leicht fiel* sie ihm nicht.³⁶
 easy fell she him not
 ‘It was not easy for him.’
- b. *Schwerfiel* dagegen dann das Abschiednehmen, [...]»³⁷
 hard.fell there.against then the saying.goodbye
 ‘In comparison saying goodbye was hard.’
- c. *Schwer fällt* hingegen eine generelle Beurteilung der Angebote,
 hard falls in.contrast a general judgment of.the offers
 wie sie Media Markt, Saturn und Konsorten – und inzwischen auch
 as they Media Markt, Saturn and co and meanwhile also
 Lebensmittelketten – derzeit fast wöchentlich herausbringen.³⁸
 food.chains currently almost weekly bring.out
 ‘In contrast, it is difficult to make a general assessment of the offers that are currently brought out almost on a weekly basis by Media Markt, Saturn and co, and meanwhile even by various supermarket-chains.’
- d. *Verlustig geht* ihnen damit auch die Kontrolle über
 lost goes them that.with also the control over
 Geldmenge, Inflation und Zinsen.^{39,40}
 money.amount inflation and interest
 ‘With that they also lose control over the sums of money, inflation and interest.’

³⁵Jochen Schmidt, *Triumphgemüse*, Verlag C. H. Beck oHG, München, 2000, p. 77.

³⁶St. Galler Tagblatt, 25.03.2000, Ressort: TB-OST; Exponiert.

³⁷Mannheimer Morgen, 02.06.1999, Lokales; Abschiednehmen fällt schwer.

³⁸c’t, 12/2000, p. 189.

³⁹taz, 23.09.1998, p. 8.

⁴⁰Dictionaries like the *Handwörterbuch der deutschen Gegenwartssprache* (Kempcke, 1984) and Wahrig, 1966 list *verlustig* as an adjective that takes a genitive complement. In (640d) a dative appears instead of the subject (*ihnen*) and the genitive is realized as the subject of *verlustig gehen*. *verlustig gehen* in (640d) reminds one of the use of *verloren gehen*. See example (632a).

- e. Der Mann, den die argentinische Spezialeinheit Sonnabend in einem Luxushotel festnahm, ist Thomas Drach, mutmaßlicher Kopf jener Bande, die vor zwei Jahren den Hamburger Sozialwissenschaftler aus seinem Haus entführte und 33 Tage gefangenhielt. *Frei kam* Reemtsma erst nach Zahlung von 30 Millionen Mark.⁴¹

'The man who was arrested by the Argentinian Special Branch on Saturday is Thomas Drach, the presumed leader of the gang that kidnapped the Hamburg social scientist at his home keeping him prisoner for 33 days. Reemtsma was only released after 30 Million DM had been paid.'

In (640e) an adjective is combined with *kommen* ('to come'). There are also similar constructions with *kommen* with PPs like *zu Tode* ('to death') / *in Not* ('in need') / *in Schwierigkeiten* ('in difficulties') / *ins Schwimmen* ('in swimming' = 'to lose one's grip') *kommen* or *unter den Hammer kommen* ('to come under the hammer' = 'to be auctioned off') / *unter die Haube kommen* ('to come under the bonnet' = 'to get married'), but these patterns are not productive anymore. Many of the PP + *kommen* combinations have an idiomatic reading.

The verb *feststehen* in the following examples is a lexicalized form.

- (641) a. *Fest steht* aber auch, daß der Täter nicht mehr in der
PART(solid) stands but also that the culprit no longer in the
Nähe des Tatorts ist.⁴²
vicinity the scene of the crime is.
'But it is also certain that the culprit is no longer in the vicinity of the scene of the crime.'
- b. *Fest scheint* auf jeden Fall *zu stehen*, daß ...⁴³
PART seems on any case to stand that
'In any case, it seems to be certain that ...'
- c. *Fest scheint* auch *zu stehen*, daß nicht nur der zu verbalisierende Sachverhalt, sondern auch die Stellungnahme des Sprechers zum Sachverhalt in den jeweiligen Satzpaaren identisch sind.⁴⁴
'It also seems to be certain that not only the facts that are to be verbalized, but also the speaker's opinion on the matter are identical in the respective pairs of sentences.'

The particle can neither be exchanged for another adjective or adverb (642a), nor can it be omitted (642b). The particle cannot predicate over a sentential comple-

⁴¹taz, 31.03.1998, p. 1.

⁴²tv-news, Tagesschau, 21.03.1998.

⁴³Reis (1976a, p. 68) discusses this sentence in the context of the raising verb *scheinen* ('seem'), but she explicitly mentions the fact that a particle is fronted.

⁴⁴In the main text of Engel, 1977, p. 219.

ment (642c).⁴⁵

- (642) a. * Wacklig steht, daß ...
wobbly stands that
- b. * Daß nicht nur der zu verbalisierende Sachverhalt, sondern auch die
Stellungnahme des Sprechers zum Sachverhalt in den jeweiligen
Satzpaaren identisch sind, steht.
Intended: 'That ... stands.'
- c. * Daß nicht nur der zu verbalisierende Sachverhalt, sondern auch die
Stellungnahme des Sprechers zum Sachverhalt in den jeweiligen
Satzpaaren identisch sind, ist fest.
Intended: 'That ... is certain.'

Since embedding under raising verbs like *scheinen* ('seem') is possible, Zeller's assumption (1999, p. 65) that *Fest steht, daß* can be analyzed as a fixed phrase is questionable.

The particles in (643) are related to prepositions:

- (643) a. Ob er seine Strafe dort absitzen muß, war gestern ebenso unklar wie
die Frage, ob er die gesamten elf Monate weggeschlossen wird.
Vor *hat* er das jedenfalls.⁴⁶
PART (before) has he this in.any.case
'Whether he has to serve his sentence there was as unclear yesterday
as the question whether he will be locked up for the complete eleven
months. But he does plan this.'
- b. *Entgegen kamen* sich Koalition und Opposition in der Frage
towards came self coalition and opposition in the question
um die Verkehrsberuhigung der Titusstraße.⁴⁷
around the traffic.soothing of.the Titus.street
'Coalition and opposition accommodated each other in the question
of traffic reduction in Titus street.'
- c. *Entgegen kam* der EuGH den Streitkräften, indem er der Regierung die
Entscheidung überlässt, welche Verwendungsbereiche sie von dem

⁴⁵Note that in certain contexts it is possible to use *stehen* ('stand') and *fest* ('solid') separately.

(i) Daß Peter den Vortrag hält, steht / ist fest.
that Peter the talk holds stands / is solid
'It is certain that Peter will hold the speech.'

These predicates are restricted to a certain context. They cannot be used to derive the semantics of *feststehen* in a compositional way.

⁴⁶taz, 15.07.1999, p. 19, about Dieter Kunzelmann, who was hiding from the police for more than a year and came back on his birthday to go to prison.

⁴⁷NEGRA corpus.

Gleichbehandlungsgebot ausnehmen wollen.⁴⁸

‘The European Court of Justice accommodated the troops by leaving it to the government to decide which areas to exclude from the equal treatment ruling.’

- d. *Auftritt* im blauen Anzug der König, [...] ⁴⁹

PART.steps in.the blue suit the king

‘The king appears in a blue suit.’

- e. *Auf fällt*, daß ... ⁵⁰

PART falls that

‘It is noticed that ...’

The following sentences show some more frontings of particles that are related to prepositions. The examples in (644) are from novels and those in (645) – (646) from poems.

- (644) a. – da warf es endlich das Gestell mit dem Spielzeug um: und das Glockenspiel läutete Ostern ein, *auf schrie* die Ziehharmonika, die Trompete mag wem was geblasen haben, alles gab gleichzeitig Ton an, ... ⁵¹

‘Then at last the toy-stand was thrown to the ground. The glockenspiel caused a mighty hullabaloo, the accordion shrieked, the trumpet blew itself, everything set the tone simultaneously.’

- b. Es klopfte, *eintrat* der Studienrat. ⁵²

it knocked in.steps the teacher

‘There was a knock on the door. The teacher came in.’

The particle *auf* in (644a) marks the sudden begin of an event. The *ein* in (644b) is related to the preposition *in* (Olsen, 1997b, p. 307).

Other meanings of *auf* can be seen in (645). In (645a–b,d) the *auf* stands for an event that is directed upwards. The *auftauchen* in (645d) is used metaphorically. The *auf* in (645c) again stands for the beginning of an event.

- (645) a. *Aufsteigt* der Strahl ... ⁵³

up.rises the jet

‘The jet rises.’

⁴⁸taz, 12.01.2000, p. 1.

⁴⁹Spiegel, 26/2001, p. 163.

⁵⁰Duden, 1991, p. 62.

⁵¹Günter Grass, *Die Blechtrommel*, München: Deutscher Taschenbuchverlag, 1993, p. 272.

⁵²Walser, *Ohne einander*, p. 51, quoted from Hoberg, 1997, p. 1621.

⁵³Conrad Ferdinand Meyer. *Der römische Brunnen*. Cf. Haftka, 1981, p. 721.

- b. *Aufblickt* der Löwe, der im Schlaf gelegen ...⁵⁴
 up.looks the lion who in.the sleep lay
 'The lion who has been sleeping looks up.'
- c. *Aufglüht* der Komet ...⁵⁵
 PART.glowes the comet
 'The comet lights up.'
- d. *Auftaucht* ein Bild aus längst vergangener Zeit ...⁵⁶
 up.dives a picture from long past time
 'A picture from times long past appears.'
- e. *Auf tat* sich das Licht: so trennte Scheu sich Finsternis von
 open did itself the light: so separated shy itself darkness from
 ihm, ...⁵⁷
 him
 'The light unfolded itself: So darkness parted shyly from him.'
- f. *Auf blühen* Papierwiesen // Leuchtend und grün, // Da stehen
 up flower paper.meadows glowing and green there stand
 drei Kühe // Und singen kühn:⁵⁸
 three cows and sing boldly
 'Vibrant green paper meadows burst into bloom, three cows stand
 there and boldly they croon.'
- (646) Einer fragte, siehst Du was. // *Durch* sagte ich *seh* ich.⁵⁹
 one asked see you something through said I see I
 'Someone asked 'Can you see anything?' // 'I can see through', I said.'

In (647) the particle *los* is fronted. In general, this particle marks the beginning of an event (*losfahren* ('start to drive'), *losrennen* ('start to run'), *losschreien* ('start to shout')).⁶⁰ In (647) the verb with *los* is a lexicalized form. The core meaning of *gehen* is not present anymore.

- (647) a. *Los ging* es schon in dieser Woche.⁶¹
 PART went it already in this week
 'It already started this week.'

⁵⁴Mosen. *Ahasver*. The examples (645b) – (645d) were found with the help of Dühmert, 1969.

⁵⁵Zettel. *Komet*.

⁵⁶M. R. Stern.

⁵⁷Goethe. *Wiederfinden*. Berliner Ausgabe, Volume 3, p. 109, Berlin: Aufbau-Verlag, 1960.

⁵⁸Jakob van Hoddiss. *Andante*, In Karl Otto Conrady (Ed), *Das große deutsche Gedichtbuch*. München: Artemis & Winkler Verlag, 3rd edition, 1994, p. 444.

⁵⁹Steffen Mensching. *Erinnerung an eine Milchglasscheibe*, In Karl Otto Conrady (Ed), *Das große deutsche Gedichtbuch*. München: Artemis & Winkler Verlag, 3rd edition, 1994, p. 925.

Thanks to Barbara Schmidt, who found this example.

⁶⁰Cf. Engel, 1988, p. 440.

⁶¹taz, 10.11.1995, p. 4.

- b. *Los ging* das 1985, da haben wir uns unseren Proberaum bei Stefan Schüler in der Liebigstraße im Friedrichshain ausgebaut und haben angefangen zu proben.⁶²

'It started in 1985, we built our rehearsal room in Stefan Schüler's house in Liebigstraße in Friedrichshain and started to practice.'

Finally, the Duden (1996, p. 33) discusses the spelling of *fehlschlagen* in connection with particle fronting. Corpus examples of this fronting pattern can be found. Some examples are given in (648):

- (648) a. *Fehl* *schlug* auch der Versuch, über die örtliche
PART (fail) beat also the attempt over the local
Kinderärztin die Identität des Mädchens zu erfahren.⁶³
children.doctors the identity of.the girl to find.out
'The attempt to identify the girl by questioning the local paediatricians failed.'
- b. *Fehl* *schlug* der Weltrekordversuch des dänischen
PART (fail) beat the world.record.attempt of.the Danish
Weltmeisters Wilson Kipketer (26), der die 800 m in 1:42,59
world.champion Wilson Kipketer 26 who the 800 m in 1:42,59
gewann.⁶⁴
won
'The Danish world champion Wilson Kipketer failed in his attempt to break the world record, but won the 800m in 1:42,59.'

Fehl is a word that only appears in fixed expressions in Modern Standard German.

Many of the examples above contain fronted particles that do not predicate over another element in the clause or in the argument structure of the respective verbs (for instance the examples with *auffallen* ('to notice') and *fehlschlagen* ('to fail')). Therefore these examples show that restricting the class of frontable particles to predicates is not empirically correct.

Having shown that particles that are homonymous to verbs, nouns, adjectives, adverbs, and prepositions can be fronted in principle, I want to discuss reasons for and restrictions on such frontings in the next subsection.

Why Are these Frontings Possible? The frontability seems to depend on the semantic content of the particle and the content of the verb. The more content a particle has, the better the fronting is. As was discussed above, most researchers agree about the cases in which a particle that can also appear in copula constructions is fronted.

⁶²Toster in an Interview in Ronald Galenza and 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.

⁶³Frankfurter Rundschau, 30.08.1997, p. 22.

⁶⁴Züricher Tagesanzeiger, 12.08.1996, p. 37.

One can observe that even particles that cannot appear as predicates in copula constructions can be fronted if they are contrasted (Haftka, 1981, p. 720–721). Hoeksema (1991b) and Bennis (1991) discuss the fronting of particles in Dutch. Their examples have been translated into German by Lüdeling (1997, p. 231):

- (649) Auf geht die Sonne im Osten, aber unter geht sie
 PART (up) goes the sun in.the east but PART (down) goes she
 im Westen.
 in.the west
 ‘The sun rises in the east, but sets in the west.’

A similar example has been provided by Hoberg (1997, p. 1622):

- (650) Auf geht die Sonne heute um 6.36 Uhr (, unter um 17.50 Uhr).
 ‘The sun will rise at 6:36 am today and set at 5:50 pm.’

Examples like (651a) are rather odd, but if a contrast is established, as in (651b), the sentence is felicitous.

- (651) a. ?* Um färbt Karl den Stoff.
 PART dyes Karl the cloth
 Intended: ‘Karl is dyeing the cloth a different color.’
 b. Nicht um färbt Karl den Stoff sondern ein.
 not PART dyes Karl the cloth but PART(in)
 ‘Karl is not dyeing the cloth a different color. He is dyeing it for the first time.’

Uszkoreit (1987, p. 101) claims that the fronting of semantically non-autonomous particles is blocked even if it establishes a semantic contrast. He tries to prove this claim with the following sentence.

- (652) * Teil kann er immer nehmen, mit dem Abnehmen sieht’s
 PART can he always take with the weight.losing looks.it
 schon schwieriger aus.
 already more.difficult PART
 Intended: ‘He can take part, but it is more difficult for him to lose weight.’

However, the reason for this ungrammaticality is that the meaning of the verbs in (652) is totally unrelated. Imagine a context where an actor has to gain 10 kilos to have the right shape for a particular role in a movie. In a conversation, one speaker claims that he has read that the actor has to lose 10 kilos to get the role. Then the reply in (653) would be possible.

- (653) Nein, nicht ab muß er nehmen sondern zu.
 no not PART must he take but PART
 ‘He has to gain weight, not lose it.’

So the generalization seems to be that the fronting of semantically non-autonomous particles is possible if a contrast is established between two particle verbs that have the same verb but different particles which add information to the core meaning of the verb. The verb *färben* ('dye') has a meaning that is related to the meaning of *umfärben*. This is not the case for *einfallen* ('remember'). The meaning of *fallen* is *fall*. This is the reason for the ungrammaticality of (654).

- (654) * Nicht auf ist mir die Tatsache gefallen sondern ein.
 not PART is me the fact fallen but PART
 Intended: 'I did not notice the fact, I remembered it.'

That the particle *an* of *anfangen* as used in (655) can hardly be fronted is due to the non-compositionality of *anfangen*.⁶⁵

- (655) a. Es fängt zu regnen an.
 it starts to rain PART
 'It is starting to rain.'
 b. * An fing es zu regnen.
 PART started it to rain

Since *anfangen* is non-transparent, it is impossible to establish a contrast between particles or base verbs.

Examples like (643)–(648) are not very frequent. They cannot be explained as contrastive readings. Hoberg (1997, p. 1621) assumes that the particles are fronted to allow nominal constituents to occupy the rightmost position in a clause, which is sometimes desired for reasons of information structuring. The fact that frontings like (644b)—repeated here as (656a)—are unacceptable if the particle verb is non-

⁶⁵ I caught myself saying (i).

- (i) An haben wir damit gefangen, daß ...
 PART(on) have we there.with caught that
 'We got started on this by talking about ...'

The sentence was uttered to explain to someone who entered the room why the people in the room were talking about a strange topic. I asked the two people involved in the conversation for judgments of (i). Both considered (i) normal. The information structuring in (i) is different from that in (655a). The subject in (655a) is an expletive pronoun, whereas the subject in (i) is a referential pronoun. In (655a) the *Vorfeld* is filled with a semantically empty element. If the speaker does not want to front the pronominal adverb of (i), fronting of the particle is the only option since a positional *es* as in (657) can hardly be used in sentences that contain referential pronouns (see Erdmann, 1886, § 94).

The example in (ii) is a corpus example involving a fronted *an*:

- (ii) Im ersten Übermut und in einem Anfall von Größenwahn steckte ich mir hundert Mark ein und lud den Dicken und den Kleinen auf die berliner Kirchweih. *Anfing* es bei Richard Alexander. (Tucholsky Gesammelte Werke. Bd. 3, p. 327, Rowohlt Verlag)
 'Full of high spirits and in an attack of megalomania I took 100 deutschmarks and invited the fat one and the small one to go to the Berlin Kirchweih. It started at Richard Alexander.'

finite is explained by her assumption since in (656b), in which *eintreten* is non-finite, the NP is not positioned at the rightmost position.

- (656) a. *eintrat* der Studienrat.⁶⁶
 in.steps the teacher
 ‘The teacher came in.’
 b. *Ein war der Studienrat getreten.
 in was the teacher stepped
 Intended: ‘The teacher had entered.’

However, this explanation cannot account for fronting of particles in sentences where the particle verb takes a sentential complement. As sentential complements can be extraposed easily, an expletive positional *es* as in (657) could be used to fill the *Vorfeld*.

- (657) Es wurden ihm beide Hände weggerissen.⁶⁷
 it-POS were him both hands away.torn
 ‘Both his hands were torn off.’

When using this expletive, (641a) would be reformulated as:⁶⁸

- (658) Es steht aber auch fest, daß der Täter nicht mehr in der
 it-EXPL stands but also PART that the culprit no longer in the
 Nähe des Tatorts ist.
 vicinity the scene of the crime is.
 ‘But it is also certain that the culprit is no longer in the vicinity of the
 scene of the crime.’

Zeller (1999, p. 64) explains the contrasts in (659) via focus assignment.⁶⁹

- (659) a. ?* Ab ist Nixon 1974 getreten.
 PART is Nixon 1974 stepped
 Intended: ‘Nixon resigned in 1974.’
 b. ? Ab trat Nixon 1974.
 PART stepped Nixon 1974
 c. Abgetreten ist Nixon 1974.
 PART.steps is Nixon 1974

⁶⁶Walser, *Ohne einander*, p. 51, quoted from Hoberg, 1997, p. 1621.

⁶⁷taz, 06.10.1997, p. 12.

⁶⁸It is unclear whether the *es* in (658) is a positional *es* or an antecedent of *it*-extraposition. Antecedents of *it*-extraposition are not expletive. But the actual distinction of both possibilities is not relevant for the rest of the argument.

⁶⁹See also Uszkoreit (1987, p. 100) for the observation that many particle frontings are better when the verb is in second position, i. e. adjacent to the particle.

In (659b), particle and verb are adjacent and the complete verb is focused. The sentence (659b) could be continued with *und er starb 1994* ('and he died in 1994'), which would establish a contrast between the whole verb *abtreten* ('to resign') and *sterben* ('to die'). Since this focus on the whole verb cannot be established in (659a) as easily as in (659b), where the two elements of the verb are adjacent, (659a) is marginal and (659c), in which the complete verb is fronted, is preferred. In the perfect construction in (659c), the complete verb is fronted and one continuous element can be focused.

While Zeller's assumptions explain most of the data that were discussed above, the sentences (631c), (641c), and (635d)—repeated here as (660)—remain unexplained.

- (660) a. *Auto* kann er nur selten *fahren*.⁷⁰
 car can he only seldomly drive
 'He can drive only seldom.'
- b. *Schicht* hat von denen keiner *gearbeitet*.⁷¹
 PART(shift) has of those nobody worked
 'None of them has worked shifts.'
- c. *Fest* scheint auch *zu stehen*, daß nicht nur der *zu* verbalisierende Sachverhalt, sondern auch die Stellungnahme des Sprechers zum Sachverhalt in den jeweiligen Satzpaaren identisch sind.⁷²
 'It seems to be certain that ...'
- d. *Dagegen* ist *zu halten*, daß die moderne Mathematik eine reine
 this.against is to hold that the modern mathematics a pure
 Strukturwissenschaft ist, die nichts mit Quantifikation zu tun
 structure.science is which nothing with quantification to do
 hat.⁷³
 has
 'As an argument against this, it has to be said that modern mathematics is a pure structure science which has nothing to do with quantification.'

Of course, (i) in footnote 65 on page 277 is also problematic. These sentences show that the adjacency of particle and verb is not a necessary condition for fronting. In (660b), the particle verb is embedded under the perfect auxiliary *haben* ('have'), in (660c) it is embedded under *scheinen* ('seem'), and in (660d) it is embedded under the modal *sein* ('be'). In (660b), it is clear that the contribution of the noun is focused. In (660c) and (660d) aspect of the lexicalized meanings of

⁷⁰Uszkoreit, 1987, p. 101.

⁷¹Spiegel, 48/1999, p. 305.

⁷²In the main text of Engel, 1977, p. 219.

⁷³In the main text of Heringer, 1973, p. 93.

feststehen and *dagegenhalten* are focused. That frontings of idiom parts are possible was shown by Fleischer (1982, p. 55), Uszkoreit (1987, p. 107), and Nunberg, Sag, and Wasow (1994). The examples in (661) show frontings of idiom parts that are similar to (660) in that the verbal parts of the idioms are embedded under perfect auxiliaries and modals.

- (661) a. *Den Vogel* aber hat die Münchner Messegesellschaft *abgeschossen*⁷⁴
 the bird but has the Munich trade.fair.company PART(off).shot
 'But the Munich trade fair company was by far the best.'
- b. *Den Vogel* dürfte die Chicagoer Firma USG Interiors
 the bird may the Chicago company USG Interiors
abgeschossen haben.⁷⁴
 PART(off).shot have
 'The Chicago company USG Interiors was probably the best.'
- c. *Eine Rolle* habe auch *gespielt*, dass er erstmals verletzungsfrei in
 a role had also played that he first.time injury.free in
 die Saison gegangen war.⁷⁵
 the season went was
 'It was also significant that he began the season without any injuries for the first time.'

The verb in the left sentence bracket is a perfect auxiliary (661a,c) or a modal (661b). So, as with the particle verb frontings in (660), there is no adjacency between heads and complements in idiomatic expressions.

Having discussed cases where just the particle occupies the *Vorfeld*, I now turn to data where the particle is fronted together with other material.

6.1.2.2 Complex Fronting

It is usually assumed that German is a verb-second language. This means that the position before the finite verb (the *Vorfeld*) can be occupied by exactly one constituent. In the following, I will discuss cases of particle fronting where the *Vorfeld* seems to be occupied by two constituents. There are six possible relations between the particle or the verb and the other fronted constituent:

- the second fronted constituent is a modifier of the particle
- the second fronted constituent is a complement of the particle
- the second fronted constituent is a modifier of the base verb (for productive particle verb combinations)
- the second fronted constituent is a complement of the base verb (for productive particle verb combinations)

⁷³Mannheimer Morgen, 26.08.1989, Wirtschaft; Tick-Tack-Tec.

⁷⁴Mannheimer Morgen, 31.05.1989, Weltwissen; Raucher in den USA auf dem Weg ins ...

⁷⁵taz, 28.08.1999, p. 18.

- the second fronted constituent is a modifier of the particle verb (for non-productive particle verb combinations)
- the second fronted constituent is a complement of the particle verb (for non-productive particle verb combinations)

These possibilities will be examined in the following sections.

Fronting of Complements and Particles Von Stechow and Sternefeld (1988) claim that particles can sometimes even be fronted together with arguments of the verb and tried to exemplify this with the following sentence:

- (662) Die Tür auf hat er gemacht.⁷⁶
 the door-ACC open has he-NOM made.
 ‘He opened the door.’

This sentence can be a reply to the question *Was hat er gemacht?* (‘What did he do?’). (662) is an instance of the causative *machen* that can appear with different predicates, as for instance with *müde* as in (663).

- (663) Der Alkohol machte ihn müde.⁷⁷
 the alcohol made him tired

Both *auf* and *müde* can be used in copula constructions with *sein* (‘be’), as the sentences in (664) show.

- (664) a. Die Tür ist auf.
 the door is open
 b. Er ist müde.
 he is tired

The *machen* + predicate construction is an instance of a general pattern in which the subject of a predicate is realized as an object of the matrix verb.⁷⁸ These constructions were discussed in Chapter 2.1.10 and an analysis was provided in Chapter 2.2.8. The fronting in (662) is a fronting of a predicate together with its subject. Such constructions have been discussed extensively in the literature on partial verb phrase fronting. Similar examples with adjectival and verbal predicates are shown in (665) and (666), respectively.

- (665) a. Viel los war nicht.⁷⁹
 much-NOM loose was not
 ‘There wasn’t much happening.’

⁷⁶von Stechow and Sternefeld, 1988, p. 476.

⁷⁷Helbig and Buscha, 1970, p. 543.

⁷⁸On *machen* + predicate see also Plank, 1985, p. 160–161 and the discussion in Chapter 5.1.7.

⁷⁹Max Goldt, *Die Kugeln in unseren Köpfen*. München: Wilhelm Heine Verlag. 1997, p. 200.

- b. „Der Teufel los ist hier ja nachts“, sagt sie mit
the devil-NOM loose is here yes during.the.night says she with
verschwörerischer Stimme.⁸⁰
conspirational voice
‘“All hell is let loose here at night” she says in a conspiratorial
voice.’
- c. Alles klar ist dagegen in Mitte.⁸¹
everything-NOM clear is there.against in Mitte
‘However, everything is clear in Mitte.’
- d. Das Maß an Exotik voll macht Wladimir Semago,
the measure-ACC of exotic full makes Wladimir Semago-NOM
Kandidat einer linken Splittergruppe namens „Geistiges Erbe“,
candidate of.a left splinter.group named Spiritual Heritage
der noch bis vor kurzem Mitglied der kommunistischen
who still until before short member of.the communist
Partei und Besitzer eines Spielkasinos war.⁸²
party and owner of.a play.casino was
‘More than enough of the exotic is provided by the candidate for
a left-wing splinter group called “Spiritual Heritage”, Wladimir
Semago, who until recently was a member of the communist party
and owner of a casino.’
- (666) a. Viel passieren kann ihnen nicht.⁸³
much-NOM happen can them-DAT not
‘Not much can happen to them.’
- b. Ein Fehler unterlaufen ist meinem Lehrer noch nie.⁸⁴
a mistake-NOM undergo is my teacher-DAT yet never
‘My teacher has never yet made a mistake.’
- c. ? Den Sänger jodeln läßt der König.⁸⁵
the singer-ACC yodel lets the king-NOM
‘The king lets the singer yodel.’
- d. Das Herz geklopft und geschauert hat dem Kind.⁸⁶
the heart beaten and shuddered has the child
‘The child’s heart beat and it shuddered.’

⁸⁰taz berlin, 15.05.2002, p. 24.

⁸¹taz berlin, 29.11.2002, p. 21.

⁸²taz, 14.12.1999, p. 13.

⁸³News Magazine, Tagesthemen, 23.11.1995.

⁸⁴Haider, 1982, p. 13.

⁸⁵Oppenrieder, 1991, p. 57.

⁸⁶Wegener, 1990, p. 98.

- e. Die Hände gezittert haben ihm diesmal nicht.⁸⁷
 the hands-NOM shook have him-DAT this.time not
 'This time his hands were not shaking.'

Frontings of predicates together with their subject are not very frequent and are often judged marginal.⁸⁸

This discussion has shown that the example in (662) should not be accepted as an instance of the case where a particle is fronted together with a complement, but rather be treated as an instance of predicate fronting in which a predicate is fronted together with its subject. However, the examples in (667) contain particles and other syntactic material in the *Vorfeld* and the particles belong to true non-transparent particle verbs:⁸⁹

- (667) a. Mit der Schwarzmalerei *einher* gehe die sinkende Sterbe- und
 with the pessimism along goes the sinking die and
 Geburtenfreudigkeit.⁹⁰
 birth.willingness
 'This pessimism goes hand in hand with a reduction in the desire to die or reproduce.'
- b. Damit *einher* geht eine Reduktion der Satzstruktur
 there.with PART goes a reduction of.the sentence.structure
 des Komplements.⁹¹
 of.the complement
 'This goes hand in hand with a reduction of the sentence structure of the complement.'
- c. Damit *einher* geht die Betonung der grundsätzlich gradienten Natur aller sprachlichen Erscheinungen – gegen die übliche Annahme

⁸⁷Höhle, 1997, p. 114.

⁸⁸Note in passing that the examples (666d) and (666e) are frontings of participles together with their definite subject. Kratzer (1984, p. 45–46) and Haider (1990b) observed a definiteness effect for sentences with subject + participle in the *Vorfeld*.

- (i) a. Ein Fehler unterlaufen würde ihr nie.
 a mistake-NOM undergo would her-DAT never
 'She would never make a mistake.'
- b. *Dieser Fehler unterlaufen würde ihr nie.
 this mistake-NOM undergo would her-DAT never
 'She would never make a mistake.'

While the difference in acceptability in (i) is pretty clear, approaches like the one suggested by Wurmbrand (2001) that rule out definite subjects plus participle in the *Vorfeld* on syntactic grounds have to be rejected as too strong in the light of examples like (666d) and (666e).

⁸⁹van de Felde (1978, p. 136) provides another example for the fronting of *damit einher* from a scientific text.

⁹⁰Spiegel, 49/1997, p. 254.

⁹¹In the main text of Haider, 1986b, p. 82.

(auch) kategorischer grammatischer Regeln – und, damit zusammenhängend, die Lockerung bzw. Aufhebung der o. a. Rahmendistinktionen.⁹²

‘This comes hand-in-hand with the stress on the fundamentally gradient nature of all linguistic phenomena—against the usual acceptance of (sometimes) categorical grammatical rules—and connected to that, the loosening or even abolition of the basic distinctions.’

- d. Damit *zusammen hängt* auch, daß bestimmte Konstituenten
there.with together hangs also that certain constituents
leichter voranstellbar sind.
easier frontable are

‘The fact that certain constituents can more easily be placed before others is also connected to this.’

- e. Damit *zusammen hängt* auch ein großer Abstand zu den Nationalsozialisten, die, kaum an die Macht gekommen, die politischen Freunde des Vaters verhaften.⁹³

‘This is related to a considerable difference from the National Socialists, who, hardly having come to power, have (the) father’s political friends arrested.’

Wahrig (1966) lists *einher* as an adverb with a meaning similar to *daher* (‘from there’), *heran* (‘right up to sth.’), and *umher* (‘around’). This adverb can appear together with verbs of motion like *brausen* (‘rush’), *fahren* (‘drive’), and *gehen* (‘go’). But the examples in (667a–c) are clearly not of this kind. In (667a–c) a lexicalized non-transparent form of *einhergehen* is used. At first glance it might appear that the examples in (667) might be instances of adverbial phrases, but note that all examples given above are either ungrammatical or have a totally different meaning without the material before the finite verb.

- (668) a. Eine Reduktion der Satzstruktur des Komplements geht.
a reduction of.the sentence.structure the complement goes
‘A reduction of the sentence structure of the complement is okay / possible.’
b. * Daß bestimmte Konstituenten leichter voranstellbar sind hängt.
that certain constituents more.easy frontable are hangs
Literally: ‘That certain constituents can more easily be placed before others is hanging.’

⁹²In the main text of Reis, Marga. 1986. Die Stellung der Verbargumente im Deutschen. Stilübungen zum Grammatik-Pragmatik-Verhältnis. In *Proceedings des 5. Lunder Symposiums „Sprache und Pragmatik“*, 12.–16. Mai 1986, p. 5.

⁹³NEGRA corpus.

Of course, one could claim that *gehen* behaves like *wohnen* ('live'), which obligatorily selects a locative adverbial (Steinitz, 1969, Chapter 2) or—following Kaufmann (1995a, p. 119) (who cites Bierwisch)—a predicative complement:

- (669) a. Karl wohnt in Berlin / dort / gut.
 Karl lives in Berlin there well
 b. * Karl wohnt.
 Karl lives

But in the case of *einhergehen*, there may be no alternation of the element occurring with *gehen*; only *einher* is possible. The only option to explain that *gehen* in (667) has to appear with *einher* is to analyze it in the way idioms are analyzed.⁹⁴ The head has to subcategorize for some material that contains a certain lexeme. In (670), *aufbinden* subcategorizes for an object that may be modified.

- (670) jemandem einen (großen) Bären aufbinden
 somebody a great bear PART (on).tie
 'to tell somebody a tall tale'

This is accounted for by subcategorizing for something that contains *Bär* instead of subcategorizing a phrase with the phonological form *einen Bären* directly. However, if one follows this approach for (667), it remains mysterious why (671b) is marked whereas the serialization of the adverb in (671a) is not marked at all.

- (671) a. Damals gingen dorthin viele Schüler.
 at.that.time went there many pupils
 'Many pupils went there at that time.'
 b. ?? Damit gingen einher viele Verschlechterungen.
 this.with went PART many worsenings
 'This went hand in hand with many worsenings.'
 c. weil damit keine Verschlechterungen einhergingen.
 d. ?* weil damit einher keine Verschlechterungen gingen.

The *einher* is not serialized like other adverbs. Adverbs can be placed between objects and subjects, which is not the case for particles like *einher*. They have to be placed in the right sentence bracket. (671b) therefore is an instance of NP-extraposition, which is marked in German.⁹⁵ See also Section 6.1.3 for linearization data with particles that are homophonous to elements of other syntactic categories. Having shown that *einher* in (667) is not an adverb, I now turn to the question of whether the elements that appear in the *Vorfeld* together with the particle are adjuncts/complements of the verb or whether they are dependent on the particle

⁹⁴For an analysis of idioms in HPSG see Erbach, 1992; Krenn and Erbach, 1994 and also Sailer, 2000 and Riehmann, 2001 for different approaches.

⁹⁵See Müller, 1999a, Chapter 13.1 on NP-extraposition.

only. Olsen (1999a,b) suggests that in examples like (672a) the fronted sequence is a constituent.

- (672) a. Durch den Park durch fährt die Bahn.
 through the park through drives the train
 ‘The train drives through the park.’
 b. Die Bahn fährt durch.
 the train drives through
 ‘The train drives through something.’

In these constructions, a PP with a preposition of a form that corresponds to the particle provides further information about the element that remains implicit if just the particle verb is used. The PP *durch den Park* is analyzed as an optional dependent of *durch*. However, the situation with verbs that have a transferred meaning is different: It is hardly possible to omit the PP, as (673) shows.

- (673) a. ? Eine Reduktion der Satzstruktur des Komplements geht
 a reduction of the sentence structure the complement goes
 einher.
 PART
 ‘A reduction of the sentence structure of the complement happens.’
 b. * Daß bestimmte Konstituenten leichter voranstellbar sind hängt
 that certain constituents more easy frontable are hangs
 zusammen.
 together
 Literally: ‘That certain constituents can more easily be placed be-
 fore others hangs together.’
 c. * Auch ein großer Abstand zu den Nationalsozialisten hängt
 also a big distance to the national socialists hangs
 zusammen.
 together
 Literally: ‘Also a big distance to the national socialists hangs to-
 gether.’

The only example I could find for *einhergehen* without a PP is (674).

- (674) Im Gegensatz dazu ist die Inkorporation einer Präpositionalbedeutung
 in opposite there.to is the incorporation of a prepositional meaning
 mit einhergehender Argumentvererbung für Partikelverben nicht
 with along.going argument.inheritance for particle.verbs not
 typisch.⁹⁶
 typical
 ‘In contrast to this, the incorporation of a prepositional meaning with co-
 inciding argument inheritance for particle verbs is not typical.’

⁹⁶In the main text of Olsen, 1997c, p. 11.

On the basis of (674), it can be argued that *einhergehen* takes a subject and the *mit*-PP modifies either the particle or the complete verb *einhergehen*. For instances of the latter pattern see the examples in (675) below.

Turning to the remaining cases with *zusammenhängen*, there are two possible explanations for the ungrammaticality of (673b,c): Either one assumes that the PP is a complement of the particle verb, then (667d) and (667e) are cases of multiple constituents in the *Vorfeld*, or one has to find a way to ensure that the particle obligatorily selects a PP. I will opt for the second possibility. The obligatoriness of the PP argument will be explained as follows: Adverbs like *zusammen* refer to at least two entities or a mass. Since the *daß* clause neither refers to more than one entity nor to a mass, the adverb has to be further specified and a second entity has to be added.

Concluding this section, it can be said that particles may be fronted together with a complement just in case this element depends on the particle. The fronting of complements of idiomatic particle verbs together with the particle is not attested.⁹⁷

Fronting of Adjuncts and Particles (675) shows examples in which a particle is fronted together with an adverb, adjective, or participle. As was already mentioned, the standard assumption about constituent order in German is that exactly one constituent can appear in front of the verb (see Chapter 1.9.2). If one follows this assumption, the adverbials in (675) must be analyzed as a modifier of the particle.⁹⁸

- (675) a. Gut *zurecht kommt* derjenige, der das Leben mit all seinen Überraschungen annimmt und dennoch verantwortungsvoll mit sich umgeht.⁹⁹

‘Those who accept life with all of its surprises and still behave responsibly towards themselves will cope without any problems.’

⁹⁷Zeller (1999, p. 66) discusses the example in (i.b).

- (i) a. Das Kleid da hinten sieht besser aus.
the dress there behind sees better PART (out)
‘The dress over there looks better.’
b. ?? [Besser aus] sieht das Kleid da hinten.
better PART (out) sees the dress there behind

The examples in (i) are subject predicative constructions. The predicate that is embedded under *aussehen* is fronted together with the particle. If examples like (i.b) are possible, then they are instances of frontings where a complement that does not depend on the particle but on the complete particle + verb combination is fronted together with the particle.

⁹⁸Of course, there is the option that both particle and adverb depend on a common invisible head. This option is explicitly excluded by many authors. For discussion see Müller, 2002b and Section 6.2.3.

⁹⁹Balance, Broschüre aus der TK-Schriftenreihe zur gesundheitsbewußten Lebensführung, Techniker Krankenkasse. 1995.

- b. Ich bin alleinstehende Mutter, und so gut *klar komm* ich nicht.¹⁰⁰
 I am single mother and so good clear come I not
 'I am a single mother and I don't cope particularly well.'
- c. Nicht *einkalkulierte* er die Lehre von der Duplizität der
 not PART(in).calculated he the doctrine of the duplicity of.the
 Ereignisse.¹⁰¹
 events
 'He did not take into account the doctrine of the duplicity of events.'
- d. vollständig *ein rissen* Bauarbeiter die Küche¹⁰²
 fully PART (in) tore workers the kitchen
 'The workers tore the kitchen down completely.'
- e. Nicht *umhin konnte* Peter, auch noch einen Roman über das
 not PART could Peter also still a novel about the
 Erhabene zu schreiben.¹⁰³
 sublime to write
 'Peter couldn't help writing a novel about the sublime as well.'
- f. Die Zeitschrift ›Focus‹ hat vor einiger Zeit auch die Umweltdaten
 deutscher Städte miteinander verglichen. Dabei *heraus kam* u. a., daß
 Halle an der Saale die leiseste Stadt Deutschlands ist.¹⁰⁴
 'Some time ago the magazine Focus also compared the environmental
 data of German towns. The results included the discovery that Halle
 an der Saale is Germany's quietest town.'
- g. *Los* damit *geht* es schon am 15. April.¹⁰⁵
 PART there.with goes it already at 15 April
 'It already starts at 15th of April.'
- h. „Wir werden alles tun, um den Amateursport in Mannheim zu er-
 halten“, versprach Adler-Geschäftsführer Harold Herrmann gestern.
 Ganz *klar stellte* er aber auch, „daß wir keine Altlasten überneh-
 men“.¹⁰⁶
 '“We will do everything we can to keep amateur sports going in
 Mannheim”, Adler manager Harold Herrmann promised yesterday.
 But he also made it clear “that we will not pay any outstanding debts”.'

The examples in (675) are frontings of a 'true' particle together with an adjunct, and the examples in (676) are examples of frontings of particles in a 'broader sense' together with adjuncts.

¹⁰⁰Radio program, 02.07.2000, I thank Andrew McIntyre for this example.

¹⁰¹Becher, Ulrich. *Die ganze Nacht*. Hamburg, 1955. p. 50, quoted from Ulvestad, 1975, p. 381.

¹⁰²Frankfurter Rundschau 14.07.1984, p. 11, quoted from Fehlisch, 1998, p. 234.

¹⁰³Grewendorf, 1990, p. 90.

¹⁰⁴Max Goldt, *Die Kugeln in unseren Köpfen*. München: Wilhelm Heine Verlag. 1997, p. 18.

¹⁰⁵taz, 01.03.2002, p. 8.

¹⁰⁶Mannheimer Morgen, 15.07.1998, Sport; MERC ist noch nicht vom Eis.

- (676) a. Immer noch mit Abstand *vorn* *liegt* Reiseunternehmer Kuoni.¹⁰⁷
 always still with distance in.front lies travel.agent Kuoni
 'The travel agent Kuoni is still in the lead by a wide margin.'
- b. Den Umschwung im Jahr 1933 stellt Nolte als „Volkserregung“ und „Volksbewegung“ dar. (...) Nicht *hinzu setzt* Nolte Zeugnisse republiktreuer Sozialdemokraten und Zentrumsleute, die im Januar 1933 von lähmendem Entsetzen befallen (...) waren.¹⁰⁸
 'Nolte described the change in 1933 as "general excitement" and a "people's movement". Nolte does not take into account reports by social democrats and the center party who were dedicated to the republic and who were stricken with horror in January 1933.'
- c. Erschwerend *hinzu kommt* der Leistungsdruck, dem auch
 more.difficult.making PART comes the success.pressure which also
 die Research-Abteilungen unterliegen.
 the research.departments underlie
 'What makes it even more difficult is the pressure to do well which even the research departments are subjected to.'

The sentences in (630) given by Stiebels and Wunderlich are also examples in which a particle and an adjunct are fronted. But while in (630) the adjunct scopes over the fronted particle, the adjuncts in (675)–(676) scope over the complete verb. There are three possibilities to analyze examples like those in (675)–(676): Firstly, one can assume that the complete verb was part of the *Vorfeld* and is scrambled back somehow, or that the verb is scrambled out of the VP before the VP is fronted, or secondly one can assume that the semantics of the complete verb is present in the particle and that the adjunct attaches to the particle. The two options are illustrated in (677).

- (677) a. [Gut zurecht _i] kommt; derjenige.
 well PART comes the.one
 b. [Gut zurecht_{zurechtkommen}] kommt derjenige.

In the GB paradigm, the first option is always argued against and I will not argue for it. The second approach is not without problems either since it does not extend to idioms like the ones in (678).

- (678) a. [Gänzlich] [unter den Tisch] fallen die Sozialversicherungsbeiträge,
 totally under the table fall the social.insurance.contributions
 wenn [...] ¹⁰⁹
 if
 'The social insurance contributions are totally lost if ...'

¹⁰⁷Clément and Thümmel, 1975, p. 126.

¹⁰⁸Die Zeit, 19.03.1993, p. 82, quoted from Hoberg, 1997, p. 1633.

¹⁰⁹<http://www.kaufundspare.de/verbrauchertipps/2001/010326a.htm>.

- b. [Ganz] [auf der Strecke] bleiben grundlegende Umbauten, welche
 totally on the route stay basic rebuildings which
 ein schnelleres Evakuieren sicherstellen sollten, sowie
 a faster evacuation secure should as.well.as
 Mindestanforderungen an die Sicherheitsausbildung der
 least.requirements at the security.training of.the
 Besatzung.¹¹⁰
 crew

‘Basic rebuilding measures which would secure faster evacuation and basic requirements for the security training of the crew are totally neglected.’

For idioms like (678a), it is implausible to assume that *unter den Tisch* contains the meaning of the complete idiom.

The third option is to assume that the examples in (675) are instances of multiple frontings. That such multiple frontings are possible with constituents of various syntactic categories is demonstrated in Müller, 2002b (See also the discussion of (200) on page 93). In Müller, 2002b, I assume an empty verbal head that is part of the predicate complex and that has the properties of the most deeply embedded verb. For (675a) one gets the analysis in (679):

(679) [Gut zurecht]_i kommt derjenige _i.

Having shown that particles may be fronted separately or with other material, I now turn to examples in which the *Vorfeld* is occupied by the base verb while the particle is stranded.

6.1.2.3 The Impossibility of Fronting the Base Verb

A non-finite particle verb cannot be fronted without its particle.¹¹¹ This is demonstrated by the sentences in (680), which contain particles that are related to different categories.

- (680) a. * Fahren wird Karl Bus / Rad.
 drive will Karl bus bicycle
 Intended: ‘Karl will ride a bus / a bicycle.’
 b. * Stehen werden sie Schlange.
 stand will they queue
 Intended: ‘They will queue up.’
 c. * Kommen wird er frei.
 come will he free
 Intended: ‘He will get free.’

¹¹⁰taz, 28.09.2000, p. 2.

¹¹¹See Höhle, 1982, p. 101, Haftka, 1981, p. 721, Olszok, 1983, p. 127, Lötscher, 1985, p. 212, and Uszkoreit, 1987, p. 104 for similar examples.

- d. *Lassen wird er das Buch zurück.
let will he the book behind
Intended: 'He will leave the book behind.'
- e. *Kommen wird Karl an.
come will Karl PART
Intended: 'Karl will arrive.'
- f. *Schlafen wird Karl ein.
sleep will Karl PART
Intended: 'Karl will fall asleep.'
- g. *Fangen will Karl das Buch zu lesen an.
catch wants.to Karl the book to read PART
Intended: 'Karl wants to start to read the book.'

Interestingly, examples with particle verbs in the broader sense seem to be slightly better.

- (681) ??Gehen wird Karl hinein, nicht rennen.
go will Karl there.in not run
'Karl will walk in, not run.'

The example in (681) seems to improve further if we replace the pronominal adverb by a full PP:

- (682) ?Gehen will Karl in das Haus, nicht rennen.
go will Karl in the house not run
'Karl will walk into the house, not run.'

The examples of particle fronting discussed in the previous section are parallel to examples where verbs or adjectives with or without dependents are fronted. The ungrammatical examples in (680) are parallel to those in (683).

- (683) a. *Müssen wird er ihr ein Märchen erzählen.
must will he her a fairytale tell
Intended: 'He will have to tell her a fairytale.'
- b. *Sein will Karl seiner Frau treu.
be wants Karl his wife faithful
Intended: 'Karl wants to be faithful to his wife.'
- c. *Gefunden hat er ihn klug.
found has he ihn smart
Intended: 'He considered him to be clever.'
- d. ??Schneiden müssen Sie das Fleisch klein!¹¹²
cut must you the meat small
Intended: 'You have to cut the meat into small pieces!'

¹¹²Oppenrieder, 1991, p. 127.

As has been discussed in the respective chapters, the generalization about the ungrammatical examples in (683) is that if parts of the predicate complex are fronted (alone or with adjuncts or complements), all parts of the predicate complex that are governed by fronted heads have to be fronted together with these heads. For instance, in (683a), *müssen* governs *erzählen*. If *müssen* is fronted, *erzählen* has to move as well. If particles are analyzed as dependents of the respective base verb and as parts of the predicate complex, the ungrammaticality of the sentences in (680) is explained. If one treats the particle as head—as was suggested by Trost (1991, p. 438)—, one cannot use this explanation for the ungrammaticality of (680).

Having shown that particle verb combinations are similar to other constructions that form a predicate complex as far as fronting is concerned, I now turn constituent order phenomena.

6.1.3 Linearization

In the following subsection, I will show that the particle is serialized in the right sentence bracket although intraposition of the particle can also be observed. Section 6.1.3.2 deals with the permutation of particle verb arguments in the *Mittelfeld* and in Section 6.1.3.3, I discuss particularly interesting linearization patterns from German dialects in which particle and verb are serialized discontinuously even in head-final contexts.

The discussion below is similar to the discussion in Chapters 2 and 5. However, while the phenomena discussed in previous chapters are clearly syntactic, the status of particle verbs is still under discussion. Many researchers suggest treating particle verbs as morphological objects. I will use the linearization data together with the fronting examples that were discussed in the previous subsection to argue for a syntactic analysis.

6.1.3.1 The Right Sentence Bracket and Intraposition into the *Mittelfeld*

Particles are serialized similarly to verbs and adjectives that are part of the predicate complex. They are located in the right sentence bracket.¹¹³ To see this consider the examples in (684):

- (684) a. Sie hat den Mann sofort gesehen, der zur Tür
 she has the man immediately seen who to.the door
 hereinkam.
 into.came
 ‘She immediately saw the man who came through the door.’
- b. Sie sah den Mann sofort an, der zur Tür hereinkam.
 she saw the man immediately PART who to.the door into.came
 ‘She immediately looked at the man who came through the door.’
- c. * Sie sah den Mann sofort, der zur Tür hereinkam, an.

¹¹³Cf. Drach, 1937, p. 55.

The examples in (684b,c) show that the extraposed relative clause has to be placed to the right of the particle. The position of the particle is the same as the position of the non-finite verb in (684a).

Further evidence for the assumption that particles occupy the right sentence bracket is provided by (685) which shows that nominal particles also occupy the right sentence bracket.

- (685) a. Deshalb fuhr er das Auto Probe.
 therefore drove he the car trial
 'That's why he took the car for a test drive.'
- b. ?? Deshalb fuhr er Probe das Auto.
 therefore drove he trial the car

As was discussed in connection with (671), the example in (685b) is a case of NP extraposition, which is marked in German. The argument can be strengthened by examples like (686). The control verb *vorschlagen* ('suggest') can appear discontinuously.

- (686) a. Karl schlägt der Frau vor, in die Stadt zu gehen.
 Karl beats the woman PART into the town to go
 'Karl suggests to the woman to go to town.'
- b. * Karl schlägt vor der Frau, in die Stadt zu gehen.

If serializations of the particle in adverb positions were possible, orders like those in (686b) should also be possible since they are possible with adverbs, as (687) shows.

- (687) a. Karl überredete die Frau gestern, in die Stadt zu gehen.
 Karl persuaded the woman yesterday into the town to go
 'Karl persuaded the woman to go to town yesterday.'
- b. Karl überredete gestern die Frau, in die Stadt zu gehen.

But this is not the case. (686b) is totally ungrammatical. This is explained by the assumption that the particle *vor* constitutes the right sentence bracket and that the linearization of *der Frau* and *in die Stadt zu gehen* in (686b) is an instance of multiple extraposition with an NP and a VP. NP extraposition as such is rather marked, but together with an extraposed infinitive, it becomes unacceptable.

This suggests that particles occupy the same position as that occupied by non-finite verbs in sentences that do not contain a finite particle verb, like (688).

- (688) Er hat den Hund geschlagen.
 he has the dog beaten
 'He beat the dog.'

The particle marks the right sentence boundary. If particle + verb combinations are licensed by the same grammar rule as the auxiliary + verb combination in (688), the facts can be explained easily.

The examples in (689) and (693) seem to contradict the assumption that particle and verb form a predicate complex since particles and verbs are not adjacent parts of the right sentence bracket in these examples.

- (689) Andrew Halsey ist auf dem Weg von Kalifornien nach Australien weit
 Andrew Halsey is on the way from California to Australia far
 ab vom Kurs gekommen.¹¹⁴
 off from.the course come
 ‘On the way from California to Australia Andrew Halsey strayed way off course.’

In (689) the meaning of the particle *ab* is further specified by a *von*-PP. Usually such further specifications can be provided by PPs with a preposition that corresponds to the particle, as in (690).¹¹⁵

- (690) a. Er legte die Folie auf den Projektor auf.
 he laid the transparency on the projector on
 ‘He placed the transparency on the overhead projector.’
 b. Er warf die Briefe in den Briefkasten ein.
 he threw the letters in the letter.box in
 ‘He posted the letters.’

There are no particle verbs in German that have a *von* as particle. *ab* is used instead (Fourquet, 1974; Stiebels, 1996, p. 86, p. 94). If the particle *ab* is further specified, a *von*-PP is used, as in (689).

Phrases of the form *weit ab + von*-PP can also appear as regular adjuncts as in (691) and to avoid the conclusion that particles may be separated from their head in verb-final contexts, it could be argued that (689) is an instance of the same construction.

- (691) Weitab vom Zentrum [...] eröffnete Alfred Bauer [...] am 6. Juni das
 Filmfest im alten Titania-Palast aus den 20er-Jahren.¹¹⁶
 ‘Far from the center Alfred Bauer opened the film festival in the old 20’s
 Titania Palace on 6 June.’

In (691) the phrase *weit ab vom Zentrum* (‘very far from the center’) specifies the location of *eröffnen* (‘to open’). However, that the *ab* in (689) is really a particle and not an adjunct as in (691) is clear if we compare (689) with (692) where the *ab + von*-PP has been omitted. The sentence without *ab* has a totally different meaning:

¹¹⁴taz, 10.04.1999, p. 20.

¹¹⁵See Olsen, 1997b on such constructions.

¹¹⁶taz berlin, 05.02.2000, p. 25.

- (692) Er ist auf dem Weg von Kalifornien nach Australien gekommen.
 he is on the way from California to Australia come.
 'He came on the way from California to Australia.'

This shows that *ab* in (689) really is a part of a particle verb. The particle is further specified by a *von*-PP and therefore the *ab* is not adjacent to *gekommen*. However, the phrase *weit ab vom Kurs* is adjacent to *gekommen*. Sentences like (689) are unproblematic for analyses that assume that particle and verb are combined in syntax.

In (693) the particles are separated from their verb by a locative PP.

- (693) Ich weiß, daß die Sonne auf im Osten und unter im
 I know that the sun PART(up) in.the east and PART(under) in.the
 Westen geht.¹¹⁷
 west goes
 'I know that the sun rises in the east and sets in the west.'

But as Lüdeling (1998, p. 58) notes, these examples are caused by focus split. That it is possible to intrapose certain parts of the predicate complex was also shown by the examples with adjectives in copula constructions in Chapter 2.1.9 and by the examples from object predicative constructions in Chapter 2.1.10. The examples in (563)–(564) in Chapter 5.1.12 showed that intraposition of resultative predicates in resultative constructions is also possible. So, this is another similarity between these four constructions.

Before turning to the permutation of arguments in the *Mittelfeld*, I want to briefly discuss Lüdeling's delimitation problem. Lüdeling (2001) argues that 'there is no theoretically significant class of constructions that one could call particle verbs' (p. 22). She assumes that preverb verb constructions (PVCs) where the preverb is neither N nor V form a natural class. On page 20 she gives the following examples: *leer trinken* ('to drink empty'), *nackt küssen* ('to kiss somebody naked'), *abfahren* ('to drive away'), *aufstellen* ('to put up'), *anlesen* ('to start reading'), *schnell lesen* ('to read quickly'), *hineingehen* ('to go into something'). She claims that it is justified to put these elements into one class since all preverbs have to be adjacent to the verb. She tries to prove this by examples like (694).

- (694) a. daß Dornröschen das Buch schnell liest.
 that Sleeping Beauty the book quickly reads
 'that Sleeping Beauty reads the book quickly.'
 b. * daß Dornröschen das Buch schnell morgen liest.
 that Sleeping Beauty the book quickly tomorrow reads

The sentence in (694b) shows that the manner adverb *schnell* can hardly precede the time adverb *morgen*, it does not show that adverbs in general have to be verb adjacent in German. And in fact this is not the case; consider (695).

¹¹⁷Lüdeling, 1998, p. 58.

- (695) daß Dornröschen schnell das Buch liest.
 that Sleeping Beauty quickly the book reads

In (695) the accusative object separates adverb and verb. Sentences like (695) differ from sentences in which the particle is serialized in the *Mittelfeld* in that the adverb is not necessarily focused. That the adjacency requirement does not hold for depictives either has been already shown in Chapter 4.1.4.3.

Lüdeling's examples can be classified without problems: Depictives and adverbially used adjectives like *schnell* syntactically behave like adverbs, i. e., they can be serialized rather freely in the *Mittelfeld*. The difference between adverbials like *schnell* and depictive secondary predicates is semantic in nature. Coherent verbal constructions, resultative constructions, copula constructions, and subject and object predicatives are grouped together with particle verbs since all of these constructions form a predicate complex. The elements of this group can be further distinguished by their meaning (resultative or not), by the main verb (copula or not, subject/object predicative verb or not), and the general syntactic properties of the constructions under consideration. All verbs that do not fit into the class of coherent verbal constructions, resultative constructions, copula constructions, or subject and object predicatives, whether syntactically or semantically, are particle verbs.

Having discussed adjacency requirements and the delimitation problem, I now turn to the permutation of arguments in the *Mittelfeld*.

6.1.3.2 Permutation in the *Mittelfeld*

The particle *an* combines with an intransitive verb like *lachen*, as used in (696a), and forms a transitive verb (696c). Arguments that are introduced by the particle (such as *ihn* in (696c)) can be permuted freely with the arguments of the base verb, as (696d) shows:

- (696) a. Niemand lacht.
 nobody laughs
 b. *Niemand lacht ihn.
 nobody laughs him
 c. weil niemand ihn anlacht.
 because nobody-NOM him-ACC PART (at).laughs
 'because nobody smiles at him.'
 d. weil ihn niemand anlacht.
 because him-ACC nobody-NOM PART (at).laughs

This is parallel to the complex constructions with adjectives, coherent constructions with verbs, subject and object predicative constructions, and resultative constructions.

Having discussed the linearization properties of particle verbs in Standard German, I now discuss linearization patterns from German dialects that differ from those of Standard German in an interesting way.

6.1.3.3 Particle Placement in German Dialects

Grewendorf (1990, p. 99) gives the German example in (697) where the particle verb *anfang* ('to start') appears discontinuously in a head-final context.

- (697) Heut im Traum sah ich sie wieder
 Und von allen Bergen ging solches
 Grüßen zu mir nieder
 Daß ich an zu weinen fing¹¹⁸
 that I PART to cry caught
 'I saw her in my dream again today, and the mountains gave me such a
 welcoming feeling that I started to cry.'

It is tempting to count this example as an intentional breach of the rules since it is quoted from a poem, but such orders are attested in some German dialects. Werner (1994, p. 356) gives the examples in (698), which are quoted from Sperschneider and were spoken in the northwest of Sonneberg/Thuringia.

- (698) a. a ... hot aa ze schimpfm gfang
 he has PART to get.angry caught
 'He started to get angry.'
 b. die ham ... auf zu arwettn ghört
 they have PART to work heard
 'They stopped working.'
 c. ham sa groud aa mit assn gfang
 have they just PART with eat caught
 'Did they just start to eat?'

In (698) the phase verbs *angefangen* ('started') and *aufgehört* ('stopped') appear discontinuously. The embedded verb intervenes between the base verb of the matrix verb and the particle that belongs to the matrix verb. Furthermore, Werner (1994) discusses sentences like those in (699) in which a particle verb is embedded under a modal (699a) or under a perfect auxiliary and a modal (699b,c). The particle verb appears discontinuously with the particle at the left periphery of the verbal complex.¹¹⁹

¹¹⁸Joseph von Eichendorff, *Erinnerung, Gedichte [Ausgabe 1841]*, Eichendorff-W. Vol. 1, p. 77.

¹¹⁹Similar constructions can be found in Dutch, where particle and verb also may be serialized discontinuously. Koster (1975, p. 126) provides the following example:

- (i) omdat Carol hem op kon bellen
 because Carol him PART can call
 'because Carol can call him.'

- (699) a. so ham sich die Leut oumüßploug¹²⁰
 so have self the people PART.must.struggle
 'people had to struggle so much'
- b. Wos da sich ölles aahotmüßhör!¹²¹
 what there self all PART.has.must.hear
 'All these things he had to listen to!'
- c. wall e in Brander vollstn ümhotwöllstimm
 because he the Brander completely PART.has.want.to.tune
 'because he wanted to change Brander's mind completely'

He argues that these orderings follow the pattern in (700).

- (700) a. weil er in die Stadt / fort geht.
 because he in the town away goes
 'because he goes to town / away.'
- b. weil er in die Stadt / fort hat müssen gehen.¹²²
 because he in the town away has must go
 'because he had to go to town / away.'

Particle verbs developed historically from adverb+verb combinations. The canonical position of adverbs is in front of the verbal complex. Most of these adverbs changed their meaning and the combinations became lexicalized. In the East Franconian/Thuringian dialect, the canonical order with respect to modals is preserved.

The fact that particle and verb may be separated even in head-final contexts both in Standard German and especially in German dialects is explained easily by a syntactic analysis.

Having discussed constituent order phenomena, I now turn to the question of whether particles can be iterated.

6.1.4 Iteration of Particles

It is not possible to have more than one particle per base verb (Stiebels and Wunderlich, 1994, p. 925; Neeleman, 1994, p. 271). This is demonstrated by the following examples: (701b,c) show the combination of the particles *los* and *an* with the verb *lachen*. *los* attaches to intransitive verbs and forms an intransitive verb. *an* attaches to intransitive verbs and forms a transitive verb. In principle, it should be possible to combine an *an* with the intransitive verb *loslachen*, but this is excluded as (701d) shows.

- (701) a. weil Maria lacht.
 because Maria laughs

¹²⁰Werner, 1994, p. 349.

¹²¹Werner, 1994, p. 355.

¹²²This is the order of the elements in the verbal complex in Thuringian. For Standard German it is *hat gehen müssen*.

- b. weil Maria loslacht.
because Maria PART.laugh
'because Maria starts to laugh'
- c. weil Maria Karl anlacht.
because Maria Karl PART.laugh
'because Maria smiles at Karl.'
- d. * weil Maria Karl anloslacht.
because Maria Karl PART.PART.laugh
Intended: 'because Maria starts to smile at Karl.'

The reading that (701d) would have is not semantically implausible. Therefore the ungrammaticality of (701d) has to have syntactic reasons. That structural factors are responsible for the ungrammaticality of particle iteration is also shown by McIntyre's examples (2001c, p. 26) in (702).

- (702) a. * herumangeben
around.show off
'show off around'
- b. herumprahlen
around.boast
'boast around'

The verbs *angeben* and *prahlen* are semantically similar. The reason for the ungrammaticality of (702a) is that *angeben* is a particle verb and hence cannot be combined with a further particle.

Stiebels and Wunderlich (1994, p. 926) analyze sentences like (703a) as back-formations. Zifonun (1999, p. 218) explains the partial acceptability of (703a) by the similarity to a construction with a prefix like *vórbestellen* and *áuserwählen*.

- (703) a. ? daß er diesen Aufsatz schon mal vórusdruckt.
that he this essay yet PART(before).PART(out).prints
'that he prints this essay in advance.'
- b. * Er druckt diesen Aufsatz schon mal vor aus.
he prints this paper yet PART PART

With the verb in initial position as in (703b), the similarity is destroyed and the sentence is not accepted. Therefore examples like (703a) are not counterexamples to the claim that only one particle can be combined with a verb.

In the following, I discuss how the particle verb formation interacts with the constructions that were discussed in previous chapters.

6.1.5 Particle Verbs and Heads that Select for Another Predicate

In Chapter 5.1, I demonstrated that resultatives cannot be iterated, and the same was shown for particle verbs in the previous section. In what follows, I will exam-

ine whether subject and object predicative constructions and resultative constructions can be combined with particle verbs.

6.1.5.1 Subject and Object Predicatives

There are particle verbs like *vorkommen* ('seem'), *aussehen* ('look'), and *einschätzen* ('estimate') that embed predicates:

- (704) a. Das kam ihm dumm vor.
 this came him silly PART
 'This seemed silly to him.'
- b. Er sieht gut aus.
 he looks good PART
 'He looks good.'
- (705) Er schätzt ihn als zuverlässig ein.
 he estimates him as reliable PART (in)
 'He thinks he is probably reliable.'

(704) shows subject predicate constructions and (705) is an example of an object predicate construction. The matrix verbs of these predicative constructions cannot be combined with resultatives, nor is the combination with particles in productive particle verb combinations possible.

6.1.5.2 Resultative Predicates

As Keyser and Roeper (1992, p. 97), Neeleman and Weermann (1993), Neeleman (1994, p. 271), Lüdeling (1998, p. 129–130), and others observed, resultative constructions are impossible with particle verbs. Many particle verbs cannot be combined with resultative predicates for semantic reasons, but sentences like (706c) cannot be ruled out on semantic grounds since it is entirely plausible that one gets tired by reading back and forth in a book. Nevertheless, sentences like (706c) are ungrammatical with the resultative reading.¹²³ *herum* is a particle that combines productively with intransitive verbs. The resulting particle verb is also intransitive. Hence, transitivization in a resultative construction like (706c) should be possible.

- (706) a. daß sich Karl müde liest.
 that self Karl tired reads
 'that Karl reads himself tired.'
- b. daß Karl herumliest.
 that Karl PART (around).reads
 Intended: 'that Karl reads aimlessly.'

¹²³There is a marginal reading in which (706c) is grammatical, but in this reading *herum* ('around') has a directional meaning similar to *durch* ('through') in *sich durchfragen* ('to ask one's way') or *hoch* ('high') in *hochdienen* ('to work one's way up'), and *müde* ('tired') is a depictive predicate.

- c. # daß sich Karl müde herumliest.
 that self Karl tired PART (around).reads
 Intended: 'that Karl gets tired by reading aimlessly.'

Neeleman and Weermann (1993) and Lüdeling (1998, p. 129–130) discuss apparent counterexamples like those in (707).

- (707) a. daß Jan die Tür grün anstreicht.
 that Jan the door green PART (on).paints
 'that Jan paints the door green.'
 b. daß Jan das Zimmer grün ausmalt.
 that Jan the room green PART (out).paints
 'that Jan paints the room green.'
 c. daß der Prinz das Fleisch kross anbrät.
 that the prince the meat crisp PART (on).fries
 'that the prince fries the meat crisp.'

They argue that in these sentences, *grün* and *kross* are not resultative predicates, but rather adverbially used adjectives. Therefore such examples do not constitute evidence against the claim that particles do not cooccur with resultative predicates.

After this section, which is the last one concerning syntactic properties of particle verbs, I now turn to data involving morphology and lexical properties of verbs that were also used to argue for an analysis of particle verbs as morphological or syntactic objects, respectively. In the next subsection, I discuss differences between prefix and particle verbs. In Section 6.1.7, I discuss data from German dialects that were used to support the assumption that particle verbs are words, and in Section 6.1.8, I discuss lexicalized particle verbs. In Section 6.1.9, I discuss differences in argument structure that can be observed when particle verbs are compared to their base verbs. Section 6.1.10 is devoted to the morphology of particle verbs and whether the insights that have been gained so far may be integrated with an analysis of the morphology data will be considered.

6.1.6 Prefix Verbs vs. Particle Verbs

Zeller (1999, p. 57) observed that in coordinated structures the base verb of a particle verb combination, but not the base verb of a prefixed verb, can be deleted.¹²⁴

¹²⁴Fanselow (1993, p. 70) claims on the basis of (i) that verbal pro forms may not be combined with a particle.

- (i) a. daß er Maria anrief und Maria Franziska aufrief.
 that he Maria PART.called and Maria Franziska PART.called
 'that he phoned Maria and Maria called the name of Franziska.'
 b. * daß er Maria angerufen hat und Maria Franziska auf.
 that he Maria PART.called has and Maria Franziska PART

He argues that this follows from the fact that particles are verb parts.

- (708) a. * weil Jens übertreibt und Hans untertreibt.
 because Jens PREF(over).forces and Hans PREF(under)
 Intended: 'because Jan exaggerates and Hans understates.'
- b. * weil Max die Franzosen überschätzt und Jan die
 because Max the French PREF(over).estimates and Jan the
 Brazilianer unterschätzt.
 Brazilians PREF(under)
 Intended: 'because Max overestimates the French and Jan underestimates the Brazilians.'
- c. * weil Martin den Wald durchfährt und Hans die
 because Martin the forest PREF(through).drives and Hans the
 Stadt umfährt.
 city PREF(around)
 Intended: 'because Martin drives through the forest and Hans around the city.'
- (709) a. weil Peter einsteigt und Hans aussteigt.
 because Peter PART(in).climbs and Hans PART(out)
 'because Peter gets in and Hans gets out.'
- b. weil Karl seine Freundin anlacht und Maria den Lehrer
 because Karl his girl.friend PART.laughes and Maria the teacher
 auslacht.
 PART
 'because Karl smiles at his girl friend and Mary laughs at the teacher.'
- c. weil Franz das Bild aufhängt und Maria das Poster abhängt.
 because Franz the picture PART.hangs and Maria the poster PART
 'because Franz hangs the picture on the wall and Mary takes the poster down.'
- d. weil Franz Klavier spielt und Maria Geige spielt.
 because Franz PART(piano) plays and Maria PART(violin)
 'because Franz plays the piano and Maria plays the violin.'

The same deletion process can be observed with parts of the verbal complex (710) and with resultative constructions (711).

- (710) a. [...] wobei das *bei*-Muster bereits stark lexikalisiert ist und in
 while the bei pattern already strong lexicalized is and in
 seiner Produktivität erloschen ist.¹²⁵
 his productivity gone.out is
 'while the bei pattern is already heavily lexicalized and not productive anymore.'

The difference between (i) and the grammatical examples in (709) is that *anrufen* is non-transparent and the *rufen* cannot be accessed whereas the simplex verbs in (709) are accessible.

¹²⁵In the main text of Olsen, 1997a, p. 325.

- b. daß Peter geschlafen hat und Karl gearbeitet ~~hat~~.
 that Peter slept has and Karl worked has
 'that Peter slept and Karl worked.'
- (711) weil Maria ihren Mann tot schlug und Peter seinen Hund
 because Maria her husband dead beat and Peter his dog
 bewußtlos ~~schlug~~.
 unconscious hit
 'Because Maria beat her husband to death and Peter beat his dog uncon-
 scious.'

This shows one more time that particles behave like parts of the verbal complex and like resultative constructions. An analysis of particle verbs that is parallel to the analyses presented in previous chapters and that treats prefix verbs as inseparable words can explain the data.

6.1.7 Nominalizations in German Dialects

Stiebels and Wunderlich (1994, p. 927) discuss the following data from two German dialects and argue that this data constitute evidence for a morphological analysis of particle verbs. The examples in (712) and (713) are from Riparian and Bavarian, respectively. *am* and *zum* are amalgamated prepositions. *am* together with the auxiliary *sein* expresses the progressive aspect. The *zum* is equivalent to the *zu* of the infinitive in Standard German. Stiebels and Wunderlich note that all NP complements have to appear before *am* and *zum*, respectively. According to Stiebels and Wunderlich, the prepositional elements *am* and *zum* take a nominalized infinitive and have to appear immediately before it. According to them, sentences like (712b) and (713b) in which a NP follows the *am/zum* are ungrammatical. Sentences like (712c) and (713c) in which the particle is separated from the verb are also judged ungrammatical.

- (712) a. Er ist sein Zimmer am aufräumen.
 he is his room at.the PART(up).clearing
 'He is tidying up his room.'
- b. * Er ist am sein Zimmer aufräumen.
 he is at.the his room PART(up).clearing
- c. * Er ist sein Zimmer auf am räumen.
 he is his room PART(up) at.the clearing
 'He is tidying up his room.'
- (713) a. Sie hod-s eam zum naaf-droong vagessn.
 she has.it him to.the up-carry forgotten
 'She forgot to carry it up for him.'

- b. * Sie hod-s zum eam naaf-droong vagessn.
 she has.it to.the him up-carry forgotten
 'She forgot to carry it up for him.'
- c. * Sie hod-s eam naaf zum droong vagessn.
 she has.it him up to.the carry forgotten
 'She forgot to carry it up for him.'

Stiebels and Wunderlich conclude that the particle is part of the word and therefore can and must appear after *am* or *zum*, respectively. However, when I heard Detmar Meurers speaking, I realized that this is not the complete story. He uttered (714) while we were talking about a linguistics journal.

- (714) Wir sind die grade am komplett Durchbestellen.¹²⁶
 we are them just at.the completely PART (through).ordering
 'We are ordering all of them now.'

In (714) an adverbial, i.e. syntactic material follows *am*. This means that either the nominalization of syntactic combinations is allowed in this position, i.e., *Komplett-Durchbestellen* is a noun, or—if just *Durchbestellen* or *bestellen* is the nominalization—that syntactic material is allowed after *am*. In any case, Stiebels and Wunderlich's argument is weakened.

Furthermore, examples like (715) show that nominal material can appear in such constructions.

- (715) Er ist ständig am Werbung für sich Machen.¹²⁷
 he is constantly at.the advertisement for self make
 'He is permanently indulging in self-promotion.'

I asked several speakers of Riparian and they considered sentences like (714) and (715) normal.

It is not clear to me what the exact restrictions on this construction are, but in the present context they are not important.¹²⁸ The examples in (714)–(715) are sufficient to show that these nominalizations are not relevant for claims about the status of particle verbs. Even if examples like (714)–(715) did not exist, the examples in (712) and (713) would not be evidence for particle verb combinations being non-syntactic, as was claimed by Stiebels (1996, p.44). As I will show in Section 6.1.10.2, nominalized verbal complexes, predicative constructions, and resultative constructions show the same order of internal material as nominalized particle verbs. The predicate complex forms a unit in nominalizations. The data in (712) and (713) therefore have to be regarded as additional evidence that particle verb combinations are similar to verbal complexes, predicative constructions, and

¹²⁶Detmar Meurers, Tübingen, 09.03.2000.

¹²⁷Uli Krieger, personal communication, 2000.

¹²⁸On some constraints see Bhatt and Schmidt, 1993.

resultative constructions, i. e. to other constructions that are regarded as syntactic combinations.

6.1.8 Non-Productive Particle Verb Combinations

Many particle verbs have a non-transparent reading. It follows that this has to be represented in the grammar/lexicon somehow, but it does not follow that particle verbs are words.¹²⁹ The point is that there are also other constructions that have non-regular meanings and that are clearly phrasal and take part in syntactic processes. For instance, the examples in (716) and (717) show that idiomatic expressions can appear in various forms of passive.¹³⁰ (716a) and (717a) show the active sentences. (716b) and (717b) are agentive passives, (716c) is a dative passive, and (716d) is a *lassen* passive.

- (716) a. Man liest den Regierenden in Bonn die Leviten.
 one-NOM reads the governors-DAT in Bonn the Leviticus-ACC
 'The rulers in Bonn are read the riot act.'
- b. Am 1. Mai werden den Regierenden in Bonn die Leviten
 at.the 1 May are the governors-DAT in Bonn the Leviticus-NOM
 gelesen.¹³¹
 read
 'On 1 May the rulers in Bonn will be read the riot act.'
- c. Ein Mann bekommt von seiner Frau die Leviten gelesen,
 a man-NOM gets by his wife the Leviticus-ACC read
 weil er beim Fernsehquiz versagte.¹³²
 because he by.the TV.quiz failed
 'A man is read the riot act by his wife because he did not do well in the TV quiz.'
- d. Gerhard Schröders Doppelgänger mußte sich in
 Gerhard Schröder's Doppelganger-NOM had.to self-DAT in
 Abwesenheit des Originals die Leviten lesen lassen.¹³³
 absence of.the original the Leviticus-ACC read let
 'Gerhard Schröder's Doppelganger had to have the riot act read to him as the original was not there.'
- (717) a. die Hunderttausende, die wochenlang auf die Straße
 the hundred.thousands who-NOM weeks.long on the road
 gegangen sind und einem verrotteten Regime den Garaus
 went are and a rotten regime-DAT the stop-ACC

¹²⁹See for instance Levitiene, 1966, p. 285 for the claim that non-transparent particle verbs must be words because of their non-transparency.

¹³⁰See also Höhle, 1978, p. 7 for passivizations of idioms.

¹³¹Mannheimer Morgen, 02.05.1998, Lokales; Kommentar Debattierclub.

¹³²Mannheimer Morgen, 09.10.1989, Feuilleton; Witzig und skurril, mit Charme und Hintersinn.

¹³³Mannheimer Morgen, 05.03.1999, Politik; „Derblecken“ auf dem Nockherberg.

gemacht haben¹³⁴

made have

'The hundred thousands who went on the streets for weeks on end to put a stop to a decayed regime.'

- b. in Heidelberg wird „parasitären Elementen“ unter den
in Heidelberg get parasitic elements-DAT under the
Professoren der Garaus gemacht¹³⁵
professors the stop-NOM made

'In Heidelberg "parasitic elements" among the professors are done away with'

For some idioms 'compositional' analyses have been suggested (Nunberg, Sag, and Wasow, 1994). Fischer and Keil (1996) assume a special interpretation for *Bären* and for *aufbinden*, when both constituents stand in a head-complement relation as in (718).

- (718) Sie bindet ihm einen (unglaublichen / großen) Bären auf.
she ties him a unbelievable big bear PART (on)
'She tells him a unbelievably tall tale.'

In Fischer and Keil's approach, the NP *einen Bären* introduces a discourse referent which makes it possible to explain why the adjective *unglaublich* may modify *Bär* and why a sentence like (718) can be continued with (719).

- (719) und er hat ihr die Lügengeschichte geglaubt.
and he has her the tall.tale believed
'and he believed the tall tale.'

The semantics of idioms where no involved phrase can be modified or referred to, like for instance *Garaus machen*, might be represented at the head.

Non-transparent particle verbs can be analyzed parallel to idioms like *Garaus machen*: The particle is a syntactic dependent of the base verb. The form of the particle is selected by the base verb and the semantics that is represented in the base verb corresponds to the meaning of the complete particle verb. But there might be cases that have to be analyzed along the lines suggested by Fischer and Keil (1996) for the *Bären aufbinden* examples. In any case, an analysis has to be provided for non-transparent idioms that are syntactically active. This analysis can be used for non-transparent particle verbs as a special case and hence the non-transparency of some particle verbs does not constitute evidence for their morphological status.

¹³⁴Bundestagsprotokolle (2. Hj. 1990), Sitzung Nr. 219, Bd. 154, p. 17359–17375, 90.08.08, p. 17364.

¹³⁵Mannheimer Morgen, 28.06.1999, Sport; Schrauben allein genügen nicht.

Having discussed arguments for the morphological status of particle verbs that refer to their non-transparency, I now turn to productive particle verb combinations where the argument structure of the complete particle verb differs from the argument structure of the base verb. The changes in argument structure have also been used to justify morphological analyses.

6.1.9 Productive Particle Verb Combinations and Argument Structure

According to Stiebels and Wunderlich, 1994, p. 930, there are five patterns of particle verb combinations of the form P + V:

1. P is a one-place predicate that can function as a verbal modifier,
2. P is a one-place predicate that can saturate a predicative argument position of V,
3. P is a two-place predicate that can saturate an argument position of V, given that the internal argument of P may remain implicit,
4. P is a two-place predicate that can undergo functional composition with V so that the internal argument of P becomes the direct object of the complex verb, or
5. P is a functor of V.

The first two options are realized by the so-called particle verbs in the broader sense with particles like *zusammen* ('together'), *hinauf* ('up'), or *herein* ('in'). The third option is possible for some prepositions *auf* ('up'), *vor* ('before'), but excluded for others (*für* ('for'), *neben* ('beside', 'next to')).¹³⁶

- (720) a. Sie springt auf.
 she jumps up
- b. Sie setzt den Hut auf.
 she puts the hat on
- c. * Sie springt neben.
 she jumps beside
- d. * Sie setzt den Hut neben.
 she puts the hat beside

Option four is not very frequent and rather restricted. The instances of this pattern are listed in the lexicon.

- (721) a. Sie malt die Figur an.
 she paints the statue PART
 'She paints onto the statue.'

¹³⁶Note that there are also particle verbs like *nebenordnen* ('coordinate') and *nebenschaften* ('connect in parallel'). The object of *neben* has to be realized as dative object of the particle verb. These particle verbs do not belong to pattern three.

- b. Sie gießt den Tee auf.
she pours the tea up
'She pours water on the tea.'
- c. # Sie malt die Figur auf.
she paints the statue up

The pattern (721b) does not extend to cases like (721c). (721c) cannot be understood as *She paints the figure*.

Examples like those in (722) basically also follow pattern four; only the semantics is different from that of the preposition.

- (722)
- a. Der Junge grinste.
the boy grinned
 - b. * Der Junge grinste den Lehrer.
the boy grinned the teacher
 - c. Der Junge grinste den Lehrer an.
the boy grinned the teacher PART (at)
'The boy grinned at the teacher.'

The particle expresses that the action denoted by the base verb is directed towards some person or object (Stiebels and Wunderlich, 1994, p. 956). The complement that represents the entity to which the action is directed is introduced by the particle.

An example for the fifth option is *an* in productive cases like *anlesen* ('read partly') and *ansmören* ('braise something lightly'). The particle functions as an Aktionsart marker contributing the interpretation that the action denoted by the base verb is not fully completed but only carried out to a certain degree. This form of *an* can be combined with transitive verbs only, the arguments of the base verb are inherited.

- (723)
- a. Sie las den Aufsatz an.
she read the paper PART
'She read some of the paper.'
 - b. Sie diskutierten das Problem an.
they discussed the problem PART
'They discussed the problem up to a certain degree.'

Some authors take the change in argument structure in examples like (722c) as evidence for a morphological status of particle verbs (see for instance (Levitiene, 1966; Booij, 2002, p. 29), but this argumentation should also apply to resultative constructions and one would not want to analyze resultative constructions with PP predicates as morphological objects. See also McIntyre, 2001b, p. 30 on this point. If one does not allow the change of argument structure in syntax, it follows that particle verb formation, like resultative predicate formation, should be licensed in

the lexicon, but it does not follow that the combination of particle and base verb has to happen in the morphology component.

Having shown that arguments that have been put forward for a morphological analysis of particle verbs are inconclusive, I now turn to the morphology of particle verbs and show that the data is compatible with an analysis that has been suggested for other constructions so far. It will turn out that the suggested analysis has an advantage over previous approaches since certain morpho-syntactic and morpho-semantic bracketing paradoxes do not appear.

6.1.10 Inflection, Derivation, and the Bracketing Paradox

Since inflectional affixes are sensitive to morphological properties of the elements they attach to, Bierwisch (1987) suggests that the inflectional material is combined with both the verbal stem of simplex verbs and the verbal stem of particle verbs. He argued that this leads to a bracketing paradox in the case of particle verbs since the semantic contribution of the inflectional information scopes over the semantic contribution of the complete particle verb. This paradox will be discussed in Section 6.1.10.1. In Section 6.1.10.2, I will discuss nominalizations and adjective derivation, which are also problematic because of various bracketing paradoxes. In Section 6.2.5, I will suggest a solution to these apparent paradoxes that assumes that inflectional and derivational prefixes and suffixes always attach to a form of a stem that contains the information about a possible particle already, but without containing a phonological realization of the particle. The particle is a dependent of the verb and is combined with its head after inflection and derivation. With such an approach, no special mechanisms for the analysis of particle verbs are necessary.

6.1.10.1 Inflection

Both particle and prefix verbs always have the same inflection class as their base verb. This means that the inflectional suffix has to have access to the morphological features of the stem. This is accounted for easily in an analysis in which inflectional material is combined with the stem before the particle is added, i. e. with a structure like the one in Figure 18a. Bierwisch (1987, p. 163) argues that the



FIGURE 18 Alternative Structures for *aufhören*

meaning of the verb *aufhören* ('end') is not transparent with regard to the combination of *auf* and *hör*-, but combinations of the form *auf-hör-t-est* and *auf-ge-hör-t*

are transparent with regard to the combination of the meaning *end* and the conceptual content of the inflectional affixes. He claims that one needs structures like the one in Figure 18b because of this, and hence he has a structural paradox. Bierwisch (1987, p. 165), Stiebels and Wunderlich (1994, p. 934), and Stiebels (1996, p. 46) suggest rebracketing mechanisms to derive the structure in Figure 18a from the one in Figure 18b. However, as I have shown in Section 6.1.8, the paradox is not a real one since the situation with idioms is similar as far as compositionality is concerned.¹³⁷ It is not justified to assume that a head that is part of an idiomatic expression is combined with all parts of the idiom before it is inflected. Thus, only the structure in Figure 18a is required; assuming that the semantics of non-transparent particle verbs is constructed parallel to the semantics of (a certain class of) idioms.

For transparent particle verb combinations I also assume the structure in Figure 18a. I assume that the inflectional affix attaches to a stem that contains the information that it will combine with a particle, i. e. a stem that is subcategorized for a particle. This stem has the meaning of the complete particle verb combination although the exact meaning is not fully instantiated until the particle combines with the (inflected) stem. Since the semantic information that will be contributed by the particle is accessible in the stem entry already, the ending can scope over it.

6.1.10.2 Derivation

Similar bracketing paradoxes seem to arise in derivational morphology. Some derivational affixes are sensitive to the argument structure of the head they combine with and some others are sensitive to the semantics of the heads they combine with, some affixes are sensitive to both kinds of properties. In the following sections, I will examine various forms of nominalization and adjective formation.

Many researchers have claimed that constructions that are clearly syntactic cannot take part in morphological processes. So for instance, Neeleman and Weermann (1993, p. 441, p. 471) claim that resultative constructions in Dutch cannot be input to nominalization. Neeleman and Weermann state that particle verbs are morphologically active while resultatives are not. They capture this proposed difference by assuming that particle verbs are part of morphology while resultative

¹³⁷Bierwisch (1987, p. 166) gives examples from compounding that suggest that rebracketing may be needed and, of course, there are famous examples of a similar kind from English; but for the cases at hand a rebracketing mechanism is not necessary as will be shown in Section 6.2.5.

Stump (1991) discusses a wide variety of morphosemantic mismatches in English, Breton, Georgian, and Sanskrit and suggests paradigm functions that allow inflectional or derivational material to attach to a head that is contained inside other material, i. e., he assumes a structure like the one in Figure 18b. On page 714 he remarks that in derivational paradigms in which the derived member belongs to a syntactic category distinct from that of the base member, the derived member generally fails to allow this kind of structure where the inflectional or derivational material attaches to the head. He remarks that nouns derived from particle verbs are exceptions (*hang on* → *hanger on*, *pass by* → *passer-by*). With my analysis, particle verbs can be analyzed without a paradox and therefore they do not constitute an exception to his generalization. I will discuss Stump's approach in Section 6.3.3 in more detail.

For an analysis of the *transformational grammarian* paradox see Spencer, 1988.

constructions are analyzed in syntax. Zeller (2001, p. 264) claims that productive resultative constructions do not enter derivational processes. He gives examples from *-er*-nominalizations, *-ung*-nominalizations, and *-bar*-derivations. As I will show in the following, many of the nominalizations are also possible with resultative predicate constructions, with object predicative constructions, and with *machen* + predicate constructions.

Nominalizations Particle verbs participate in the following suffix derivations: *-e*, *-er*, *-ling*, *-sel*, *-ung*, and the combined derivation *Ge-* *-e*, as shown in (724) (see Lüdeling, 1998, p. 101).

- (724) *-e*: Abnahme ('removal') ← abnehmen ('to take off, to remove')
 Vorhersage ('prediction') ← vorhersagen ('to predict')
- er*: Ansager ('announcer') ← ansagen ('to announce')
 Abnehmer ('buyer, client') ← abnehmen ('to take off', 'to buy')
- ling*: Ankömmling ('newcomer') ← ankommen ('to arrive')
 Eindringling ('intruder') ← eindringen ('to enter', 'to intrude')
- sel*: Anhängsel ('appendage') ← anhängen ('to hang on', 'to append')
 Mitbringsel ('little present') ← mitbringen ('to bring along')
- ung*: Abschreibung ('writing off') ← abschreiben ('to write off')
 Aufladung ('charge') ← aufladen ('to load', 'to charge')
- Ge-* *-e*: Herumgerede ('constant or repeated talking', 'babble') ← herumreden ('to talk/chat away', 'to babble')

-e, *-ling*, and *-sel* are only weakly productive or not productive at all. In the following, I will concentrate on the productive derivations with *-er*, *-ung*, and *Ge-* *-e*.

***ung*-Nominalizations** After the suffix *-er*, the suffix *-ung* is the most productive suffix in nominalization (Fleischer and Barz, 1995, p. 172). The nouns that are derived with *-ung* are feminine. In comparison to the nominalization of infinitival forms that will be discussed below, *-ung*-nominalizations allow plural formation and therefore can describe several single events (*Ladungen* ('loads'), *Schwankungen* ('fluctuations')). The nominalized infinitive can describe one continuum only (Fleischer and Barz, 1995, p. 175).

-ung-nominalizations can be formed with intransitive (725) and with transitive verbs (726).

- (725) a. Das Flugzeug landet.
 the plane lands
 'The plane is landing.'
- b. während der Landung des Flugzeugs
 during the landing of the plane

- (726) a. Der Lehrer behandelte dieses Problem ausführlich.
 the teacher dealt.with this problem detailed
 'The teacher dealt with this problem in detail.'
- b. die ausführliche Behandlung des Problems durch den Lehrer
 the detailed treatment of.the problem by the teacher

The nominalizations in (727)–(729) are *-ung*-nominalizations with productive particle verb combinations. These examples are derivations of the particle verbs *einfärben* ('to dye'), *einbetonieren* ('to cement-in'), *einölen* ('to rub with oil'), *einsargen* ('to put in a coffin'), *einrahmen* ('to frame'), *einkesseln* ('to surround'), *einkreisen* ('to circle') that are derived from the nominal bases *Farbe* ('color'), *Beton* ('cement'), *Öl* ('oil'), *Sarg* ('coffin'), *Rahmen* ('frame'), *Kessel* ('encircled area'), and *Kreis* ('circle'), respectively. The particle *ein* corresponds to the preposition *in*. For particle verbs with *ein* in general see the works cited in Olsen, 1998. The particle verbs that are the basis for the nominalizations in (727) belong to a class of verbs that can be used to describe actions where an object is covered with the substance of the base noun. In (728) the nominal base of the particle verb refers to a container. The verbs describe events of putting something into the container that is described by the nominal base. This pattern is productive (Fehlisch, 1998, p. 168). The example in (729) shows another *-ung*-nominalization that is derived from the particle verb combination *einmeißeln* ('to chisel in') which is derived itself from the nominal base *Meißel* ('chisel'). The derivation of particle verbs with *ein* and a nominal base that refers to a tool also follows a productive pattern (Fehlisch, 1998, p. 174, p. 189).

- (727) a. die bereits begonnene *Einbetonierung* des „Estonia“-Wracks¹³⁸
 the already begun in.cementing of.the Estonia.wreck
 'the cementing-in of the Estonia wreck that was already underway'
- b. die Einladung des Moderators zur *Einölung* der
 the invitation of.the presenter to.the in.oiling of.the
 catchenden Schwestern Inge und Jeanie¹³⁹
 catch-as-catch-can-wrestling sisters Inge and Jeanie
 'the presenter's invitation to rub the catch-as-catch-can-wrestling sisters Inge and Jeanie with oil'
- c. Nach einem Bericht einer Tageszeitung hatten Anwohner die
 after a report of.a daily.newspaper had inhabitants the
 Polizei alarmiert, als sie die rosarote *Einfärbung* des Panzers
 police alarmed as they the pink.red coloring of.the tank

¹³⁸taz, 20.06.1996, p. 2, DPA.

¹³⁹taz, berlin, 02.12.1994, p. 28, Matsch-Kultur in Hellersdorf.

bemerkten.¹⁴⁰

noticed

'According to a report from a daily newspaper, the locals had alarmed the police when they noticed that the tank had been painted pink-panther pink.'

- (728) a. daß eine *Einsargung* in Leichenhüllen keine Regelung ist,
that a in.coffin.putting in corpse.covers no arrangement is
die auf Aids-Tote anzuwenden sei.¹⁴¹
that on Aids.dead applicable is
'that aids victims should not be sealed-up before being put into their coffins.'
- b. die spiegelverkehrte *Einrahmung* von zwei Barks-Zeichnungen¹⁴²
the mirror.reversed framing of two Barks.drawings
'the reversed framing of two Barks drawings'
- c. Wieland hielt der Polizei vor, durch die *Einkesselung* eines aus
Wieland held the police before through the surrounding of.a from
Kreuzberg kommenden Demonstrationszuges auf der
Kreuzberg coming demonstration.procession on the
Schönhauser Allee die bis dahin friedliche Stimmung
Schönhauser Avenue which to there peaceful atmosphere
angeheizt zu haben.¹⁴³
heated to have
'Wieland accused the police of having provoked demonstrators coming from Kreuzberg by surrounding them on Schönhauser Allee; the atmosphere had been peaceful up until them.'
- d. wo die „*Einkreisung*“ des Kaiserreiches durch andere
where the surrounding of.the Kaiser.Reich through other
europäische Großmächte vor 1914 zur eigentlichen Ursache
European big.powers before 1914 to.the actual cause
des Ersten Weltkrieges erklärt wird.¹⁴⁴
of.the first world.war declared gets
'Where the fact that various other major European powers surrounded the Empire before 1914 is declared to be the actual cause of WW1.'

- (729) die in dem Entwurf vorgesehene *Einmeißelung* von 4,2 Millionen
the in the blueprint planned in.carving of 4.2 million

¹⁴⁰Mannheimer Morgen, 30.04.1991, Politik; Rosaroter Sowjet-Panzer erhitzt die Gemüter.

¹⁴¹taz, hamburg, 04.09.1993, p. 30.

¹⁴²taz, hamburg, 16.02.1995, p. 24.

¹⁴³taz, berlin, 03.05.1996, p. 21.

¹⁴⁴taz, 02.01.1995, p. 10.

Namen jüdischer NS-Opfer sei schwer ausführbar, [...] ¹⁴⁵
 names of Jewish NS.victims be difficult to.execute

‘In the blueprint it was planned to carve 4.2 million Jewish NS victims’
 names into the stone, but in practice this is difficult to execute.’

The data in (727)–(729) clearly show that Lüdeling’s claim (2001, p. 104) that *-ung*-nominalizations are only possible with listed preverb verb combinations is incorrect. ¹⁴⁶ Lüdeling tries to prove her claim by comparing the nominalizations *Groß/Kleinschreibung* (‘to spell/write a word with a capital/a small letter’) with * *Schwarzschrift* (‘to write in black ink’).

- (730) a. Der Prinz schreibt das Wort groß / klein.
 the prince writes the word large small
- b. Bei der Rechtschreibreform werde ich für konsequente
 at the orthography.reform will I for consequent
 Großschreibung / Kleinschreibung von Nomina stimmen.
 large.writing small.writing of nouns vote
 ‘In the orthography reform I will vote for the consequent capital-
 ization / writing in lower case of nominals.’
- c. § Kleinschreibung ist nötig, damit mehr auf die Seite paßt.
 small.writing is necessary COMP more at the page fits
 Intended: ‘It is necessary to write small so that more will fit on the
 page.’
- (731) a. Der Prinz schreibt das Wort schwarz.
 the prince writes the word black
- b. * *Schwarzschrift*
 black.writing

These examples show nothing about particle verb combinations in *-ung*-nominalizations since *groß*, *klein*, *schwarz* are normal adverbials and not particles (see page 295 on the delimitation problem). Lüdeling examines what she terms preverb verb combinations (PVC), preverbs including adverbs and adjectives adjacent to the verb. However, the cases with normal adverbials are not interesting for the present study. The contrast between (730) and (731) can be explained by semantic properties of *-ung*-nominalizations: *-ung*-nominalizations refer to a single event and in order to get more text on a page one would have to do several

¹⁴⁵taz, 07.07.1995, p. 5 AFP.

¹⁴⁶Lüdeling (2001, p. 84) defines listedness in the following way: A simple or complex linguistic expression is listed, iff all terminal nodes are associated with phonological information.

This definition means that the lexicon may consist of trees. Such a definition only makes sense for grammar models that assume operations on trees since without such operations it cannot be explained why parts of a listed expression can be extracted. One can define listedness in a more theory neutral way: A complex linguistic expression is listed, iff the phonological form of its parts is specified.

Kleinschreibungen. Instead of *Kleinschreibung*, the nominalization of the infinitive *Kleinschreiben* has to be used. The same is true for *Schwarzschriften*.

- (732) a. Das Kleinschreiben ist nötig, damit mehr auf die Seite paßt.
the small.writing is necessary COMP more on the page fits
'It is necessary to write small so that more fits one the page.'
- b. Das Schwarzschriften ist neuerdings wieder in Mode gekommen.
the black.writing is nowadays again in fashion come
'Writing in black is fashionable again.'

Paul (1920, p. 74) notes that many *-ung*-nominalizations are blocked if simpler forms are available and that they are sometimes blocked by nominalized infinitives. I think that this also influences the acceptability of examples like (730c) and (731b).

Lüdeling (2001, p. 104) observes that *-ung*-nominalizations are not possible with all resultatives and claims that it is only possible for listed, i. e. non-transparent combinations.¹⁴⁷ This would imply that all the resultative constructions that were input to the nominalizations in (733) have to be listed, a conclusion I am not ready to accept.¹⁴⁸

- (733) wegen der *Leerfischung* der Nordsee¹⁴⁹
because.of the empty.fishing of.the North.Sea
'because of over-fishing in the North Sea'
- a. Von „*Kaputterschließung*“ könne nicht die Rede sein.¹⁵⁰
of broken.development can not the speech be
'Over-development (to the point of destruction) is out of the question.'
- b. Der *Kaputtmilitarisierung* droht jetzt die
the broken.militarization threatens now the
Kaputtindustrialisierung zu folgen.¹⁵¹
broken.industrialization to follow
'(Destructive) over-militarization is now likely to be followed by (destructive) over-industrialization.'
- c. der „*Kaputtsanierung* vieler Standorte“¹⁵²
the broken.renovation many places
'the destructive over-renovation of many places'

¹⁴⁷ See also Zeller, 2001, p. 266, where this view is also adopted.

¹⁴⁸ In her talk on February the 4th, 2000 in Leipzig, Anke Lüdeling suggested two causes for listedness: Entities can be listed because of their idiosyncrasy or because of their high frequency. So this means that if the resultative construction *wach küssen* ('to kiss awake') is used in some context very frequently, this combination gets lexicalized and the formation of **Wachküssung* becomes possible.

¹⁴⁹ taz, 20.06.1996, p. 6.

¹⁵⁰ taz, 02.09.1987, p. 8.

¹⁵¹ taz, 19.04.1990, p. 5.

¹⁵² taz, 08.01.1988 p. 8.

- d. die *Kaputtschrumpfung* der DDR-Industrie¹⁵³
the broken.shrinking of.the GDR.industry
'the devastation of the GDR industry'
- e. Der DFB beschließt *Liga-Gesundsschrumpfung* [...] ¹⁵⁴
the DFB decides division-healthy-shrinking
'The DFB decides to shrink professional football to health.'
- f. für die *Gesundsschrumpfung* der ehemals staatlichen Betriebe¹⁵⁵
for the healthy.shrinking of.the former state.owned businesses
'for shrinking the former state-owned businesses to health'

Lüdeling (2001, p. 104) argues in a footnote that nouns like *Rotfärbung* and *Blaufärbung* are not counterexamples to her claim since these are compounds from the result reading of *Färbung* ('coloring') and *rot* ('red') or *blau* ('blue'). She claims that a process reading is not possible and provides the example (734).

- (734) * Die Rotfärbung von Dornröschens Haaren dauerte zwei Stunden.
the red.coloring of Sleeping Beauty's hair took two hours
Intended: 'Dyeing Sleeping Beauty's hair red took two hours.'

I think that the oddity of (734) is due to the context in which the compound version is indeed preferred. The *-ung*-nominalizations in (735) are all derived from resultatives:

- (735) a. Zur *Gelbfärbung* des Dotters stehen fünfzehn verschiedene
to.the yellow.dyeing of.the yolk stand fifteen different
Mittel als Futterzusatz bereit.¹⁵⁶
agents as feed.addition ready
'For dyeing yolks yellow, fifteen different substances are available as feed additives.'
- b. Zur *Gelbfärbung* von Weingummi und anderen Süßwaren ist
to.the yellow.dyeing of wine.gums and other confectionery is
Tartrazin der am meisten eingesetzte Farbstoff.¹⁵⁷
tartrazine the at most employed coloring
'Tartrazine is the coloring that is most often used to make wine gums and other sweets yellow.'
- c. Tomaten waren gestern die bevorzugten Wurfgeschosse von schätzungsweise 350 Studierenden, die vor der CDU-Zentrale am Wall gegen die geplante Neufassung des Bremischen Hochschulgesetzes demonstrierten (die Tomaten dürften jedoch auch als Antwort auf die

¹⁵³taz, 26.10.1995, p. 13.

¹⁵⁴taz, 27.04.1992, p. 17.

¹⁵⁵taz, 29.05.1991, p. 5.

¹⁵⁶taz, 14.08.1995, p. 3.

¹⁵⁷Mannheimer Morgen, 27.05.1988, p. 12.

Unterschriftenaktion zur doppelten Staatsbürgerschaft gewertet werden).

Die Polizei nahm die *Rotfärbung* der Fassade hin.¹⁵⁸
the police took the red.colouring of.the facade PART (there)

'Tomatoes were the favored missile of approximately 350 students who yesterday demonstrated against the planned revision of Bremen's University law at the Wall in front of the CDU headquarters (however, the tomatoes were probably also meant as an answer to the petition campaign against dual nationality). The police did not intervene while the façade was being colored red.'

- d. Der Großvater hatte das Vermögen der Familie mit dem
the grandfather had the fortune of.the family with the
Waid-Handel gemacht, einer einst nur in Thüringen vorkommenden
willow.trade made a once only in Thuringia occurring
Pflanze (isatis tinctoria) zur speziellen *Blaufärbung* von Stoffen.¹⁵⁹
plant isatis tinctoria to.the special blue.dyeing of fabrics
'The grandfather had made the family's fortune through trading in
willow, a plant, formerly only found in Thuringia, used for dyeing
fabric blue.'

Other examples of *-ung*-nominalizations from predicates that are probably not listed are the examples in (736) which are nominalizations of the causative *machen* + predicate. The combination of *machen* and predicate is also a syntactic one. It is an instance of the object predicative construction discussed in Chapter 2.1.10.

- (736) a. die Entfernung oder anderweitige *Unkenntlichmachung* des
the removal or otherwise unrecognizable.making of.the
Wandtransparents¹⁶⁰
wall.neon.sign
'the removal of the wall-mounted banner or any attempts to make it
unrecognizable'
- b. Dieser möchte gerne Parteivize werden, und also geht die
this.one would happily party.vice get and so goes the
Frage an Angela Merkel, was sie davon hält: „Eine
question to Angela Merkel what she there.of holds a
Deutlichmachung, dass er sich einbringen will.“¹⁶¹
clear.making that he self involve wants
'He would like to become the party's vice president, so the question

¹⁵⁸taz, bremen, 22.01.1999, p. 21.

¹⁵⁹taz, hamburg, 15.03.1995, p. 19.

¹⁶⁰taz, berlin, 21.06.1997, p. 26, *Landowsky ohne Brett vorm Kopf*.

¹⁶¹Quoted from Angela Merkel, taz, 03.20.2000 p. 6.

to Angela Merkel is: what does she think of it: “A demonstration that he wants to get involved.”’

Other *-ung*-derivations from *machen* + predicate that I found in the COSMAS corpus are: *Bewußtmachung* (‘to make s. o. aware of s. t.’), *Breitmachung* (‘to spread (oneself) out’), *Dienstbarmachung* (‘to make s. o. servile’), *Freimachung* (‘to put a stamp on s. t.’, ‘to free s. o. or s. t.’), *Fruchtbarmachung* (‘to make fertile’), *Glaubhaftmachung* (‘to make believable’), *Gleichmachung* (‘to make equal’), *Haltbarmachung* (‘to conserve’), *Irremachung* (‘to drive insane’), *Kenntlichmachung* (‘to make recognizable’), *Konsequentmachung* (‘to make consequent’), *Lächerlichmachung* (‘to ridicule’), *Nutzbarmachung* (‘to make useful/usable’), *Öffentlichmachung* (‘to make publicly known’), *Plausibelmachung* (‘to make plausible’), *Rückgängigmachung* (‘to reverse’), *Schiffbarmachung* (‘to make navigable’), *Schmackhaftmachung* (‘to make s. t. tempting’), *Seßhaftmachung* (‘to make s. o. sedentary’), *Sichtbarmachung* (‘to make visible’), *Störfreimachung* (‘to free from interference’), *Unfruchtbarmachung* (‘to sterilize’), *Unschädlichmachung* (‘to make harmless’), *Urbarmachung* (‘to clear land so that it can be cultivated’), *Verächtlichmachung* (‘to cause belittle s. t. / s. o.’), *Verständlichmachung* (‘to make comprehensible’), *Wehrhaftmachung* (‘to make s. o. or s. t. be able to defend itself’), *Wiederbewohnbarmachung* (‘to make s. t. habitable again’), *Wiedernutzbarmachung* (‘to make reusable’), and *Wiedersichtbarmachung* (‘to make visible again’). The nominalizations *Bekanntmachung* (‘to make known’), *Geltendmachung* (‘enforcement’), *Mobilmachung* (‘to mobilize’), and *Wiedergutmachung* (‘to make amends’) are lexicalized forms.

Fleischer and Barz (1995, p. 105) note that adjectives that are prefixed with *erz-*, *miß-*, *un-*, and *ur-* are not productive as the first constituent of nominal compounds. According to them, forms like *Unkenntlichmachung* (‘to make unrecognizable’, ‘to deface’) are derivations of verbal phrases. The *wieder-* *-machung* examples in (737) are interesting since they confirm this claim: They are instances of phrases in *-ung*-derivations.

- (737) a. Zweite Priorität hat die *Wiedernutzbarmachung* der
second priority has the again.useful.making of.the
Wertstoffe.¹⁶²
reusable.materials
‘Recycling the reusable materials is a second priority.’
- b. die *Wiedernutzbarmachung* brachliegender Industrieflächen¹⁶³
the again.useful.making fallow industry.areas
‘the redevelopment of industrial wasteland’
- c. in der mit Hilfe der Digitaltechnik vorgenommenen
in the with help of.the digital.technology carried.out

¹⁶²Mannheimer Morgen, 10.04.1991, Regionales; Gemeinsam über den Abfallberg?

¹⁶³Mannheimer Morgen, 29.03.1989, Politik; Mit drei Modellen gegen die Altlasten.

Widersichtbarmachung früherer Bauten¹⁶⁴

revisible.making earlier buildings

‘in the digital reconstruction of former buildings’

- d. so sieht die SPD das Dresden der Zukunft: – Unverzichtbarkeit der historischen Stadtsilhouette – keinerlei Bebauung der Elb-Flußlandschaft im Stadtgebiet – *Widersichtbarmachung* der ursprünglichen Einbettung der Stadt in die natürliche Umgebung – Sicherung, Aufbau und Pflege unserer kulturhistorischen Bausubstanz und der historischen Wohnviertel.¹⁶⁵

‘This is how the SPD sees the Dresden of the future: – the historical town silhouette will be essential, no development on the inner-city Elbe-bank region, the original harmony of the town within its natural environment will be recreated – safeguarding, restoration and upkeep of our cultural and historical architecture and residential areas.’

Fleischer and Barz (1995, p. 105) provide other examples of phrasal *-ung*-derivation: *Farbgebung* (‘to give s. t. color’), *Grundsteinlegung* (‘to lay the foundation stone’), *Indienststellung* (‘to hire’), *Zugrundelegung* (‘to make s. t. the basis of s. t.’). *Selbstzurschaustellung* (‘to behave like an exhibitionist’) is a more complex example. Paul (1919, p. 215) uses the word *Nebeneinanderstellung* (‘to compare’, ‘place side by side’) in the main text. Paul (1920, p. 132) notes that such nominalizations cannot be analyzed as compounds containing an *ung*-derived noun since nouns like * *Gebung*, and * *Legung* do not appear in isolation. *Stellung* (‘job’, ‘position’) does not have the semantics needed for the nominalizations *Indienststellung* and *Selbstzurschaustellung*.¹⁶⁶

With the assumption that *-ung*-nominalization can apply to phrases, examples like (425)—repeated here as (738)—can also be explained.

- (738) a. Sie sind ein Hinweis darauf, daß das Öl erhitzt und nicht kalt
they are an indication that.on that the oil heated and not cold
gepreßt wurde.¹⁶⁷

pressed got

‘They indicate that the oil was heated and not cold-pressed.’

- b. Denn die schonende *Kaltpressung* ist nur für Speiseöle von
for the gentle cold-pressing is only for edible.oils of
Bedeutung.¹⁶⁸

meaning

‘For the gentle cold-pressing method is only of significance for edible oils.’

¹⁶⁴Mannheimer Morgen, 02.06.1998, Lokales; *Widersichtbarmachung* der Klosterstadt.

¹⁶⁵Wendekorpus, SPD. Dresden aktuell. Sozialdemokratische Wahlzeitung; Dresden; Mai 1990, p. 3.

¹⁶⁶For Dutch examples of particle verb nominalizations with *-ing* see Groos, 1989, p. 55–56.

¹⁶⁷taz berlin, 19.11.1994, p. 43.

¹⁶⁸taz berlin, 19.11.1994, p. 43.

(738b) is a nominalization of a verb with a depictive predicate. In Chapter 4, I showed that the depictive predicate *kalt* has to be analyzed as an adjunct. The nominalization in (738b) can be analyzed as a nominalization of the combination of *kalt* and *press-*.

I have shown that productive particle verb combinations, resultative constructions, and *machen* + predicate can undergo *-ung*-derivation. This section hence concludes that listedness cannot be the criterion relevant for the possibility of *-ung*-nominalizations.

-er-Nominalizations *-er*-nominalizations are very productive. The nouns derived by *-er* are masculine. They refer to a person who performs the action that is described by the verb or to an instrument that is used to perform the action (Paul, 1920, p. 60). Those nouns that refer to persons can be divided into three groups: persons who act professionally (*Dreher* ('lathe operator'), *Gießer* ('caster'), *Lehrer* ('teacher')), persons who act habitually (*Denker* ('thinker'), *Herumtreiber* ('vagabond', 'good-for-nothing'), *Raucher* ('smoker')), and persons who act occasionally (*Finder* ('finder'), *Gewinner* ('winner'), *Leser* ('reader'), *Verlierer* ('loser')) (Fleischer and Barz, 1995, Chapter 2.3.2.4). For further meanings of *-er*-nominalizations see also Fleischer and Barz, 1995, Chapter 2.3.2.4.

The examples in (739) are *-er*-nominalizations of the causative *machen* + predicate, the one in (740) is an example of *-er*-nominalization of an object predicative construction, those in (741) are *-er*-nominalizations of resultative constructions, and those in (743) are *-er*-nominalizations of verbs together with a depictive predicate.

- (739) a. Ein *Kaputtmacher* der Vernunft ist [...] die Angst.¹⁶⁹
 a breaker of.the reason is the fear
 'Fear consumes reason.'
- b. Solche Fundamentalisten waren auch die *Kaputtmacher* der „Weimarer Republik“.¹⁷⁰
 'It was fundamentalists like this that were responsible for the decline of the Weimar Republic.'
- c. Der ambitionierte Klub aus dem Westend wurde vom Frontläufer zum *Kaputtmacher* des dänischen Klub-Fußballs.¹⁷¹
 'The ambitious Westendclub degenerated from being a winner to becoming the destroyer of Danish club football.'
- d. Fast, denn verziehen wird ihm das Lied „Wir“ nicht, worin er 1968 den langhaarigen *Kaputtmachern* eine hochkochende Volksseele an-

¹⁶⁹Die Zeit, 10.10.1986, p. 88.

¹⁷⁰Leserbrief, taz, 09.10.1993, p. 18.

¹⁷¹taz, 29.08.1992, p. 27.

brutzelte, die zum NPD-Parteitag das Maggi in der Suppe war.¹⁷²

‘Almost, for he will never be forgiven for his song “Wir” (us); which sparked off an explosive national soul in the long-haired hooligans in 1968, and that, in turn, provided the icing for the NPD’s (German nationalist party) party conference cake.’

- e. Schlesinger schafft im Seehafen Rostock als *Festmacher*.¹⁷³
Schlesinger works in.the sea.harbor Rostock as moorer

‘Schlesinger works in the moorage at Rostock harbor.’

- f. die Melancholie der doppelt genähten *Festmacherseile*¹⁷⁴
the melancholy of.the double sewn mooring.ropes
‘the melancholy of the double-sewn mooring ropes’

- g. Weil wir glaubten, der Nagel täte es auch, weil wir – ja
because we thought the nail would.do it too because we yes
– weil wir frevelten und nicht zu ihm griffen. Zu ihm – dem
because we sinned and not to him reached to him the
großen *Festmacher*, dem Fischerdübel.¹⁷⁵
great tight.maker the Fischer.rawlplug

‘because we thought the nail would be good enough, because we, yes, because we sinned and did not use it. It, the great attachment implement, the Fischer rawlplug.’

- h. einem Auschwitz-erst-möglich-Macher¹⁷⁶
a Auschwitz.first.possible.maker
‘someone the likes of which made Auschwitz possible’

The examples (739e) and (739f) show the meaning that was also discussed by Lüdeling (1998, p. 103): A *Festmacher* in a harbor is somebody whose job it is to moor boats or a rope with which boats are moored. (739g) shows that *Festmacher* also can be used in other contexts, for instance referring to a rawlplug.

The example (739h) shows that complex nominalizations that include the accusative object of the *machen* constructions, i. e. the subject of the embedded predicate, are possible. Note that this sentence and other sentences that will be discussed below show that Hoeksema’s constraint on Dutch nominalizations (1991a, p. 705) which rules out nominalizations in which both a predicate and an NP argument is part of a nominalization should not be formulated in a grammar of German.

The example in (740) is a nominalization of an object predicative construction. The object that is predicated over (*Krieg* ‘war’) is also realized as the first part of

¹⁷²taz, 01.06.1989, p. 21.

¹⁷³taz, 16.08.1997, p. 12.

¹⁷⁴taz, bremen, 29.09.1995, p. 23.

¹⁷⁵Fritz Eckenga, taz, 11.06.1999, p. 20.

¹⁷⁶Wiglaf Droste, taz, 10.03.2000, p. 20.

a compound.

- (740) unserer Kriegsgutfinder¹⁷⁷
 our war.good.finder
 ‘our people who find war good’

The examples in (741) are *-er*-nominalizations of resultative constructions.

- (741) a. Der *Totschläger* war Soldat¹⁷⁸
 the dead.beater was soldier
 ‘The killer was a soldier.’
- b. Dabei attackierten sie in wechselnder Beteiligung unter anderem
 there.at attacked they in changing participation under others
 den Gastwirt mit einem sogenannten *Totschläger* und einer Flasche
 the landlord with a so-called cudgel and a bottle
 Rotwein.¹⁷⁹
 red.wine
 ‘During this they took it in turns to attack, amongst others, the land-
 lord, with a so-called killer (cudgel) and a bottle of red wine.’
- c. mit [...] dem *SFB-Gesundbeter* Winfried Göpfert¹⁸⁰
 with the SFB.healthy.prayer Winfried Göpfert
 ‘with Winfried Göpfert, the SFB’s (Sender Freies Berlin, radio sta-
 tion) faith-healer’
- d. Ex-Bierflaschenleertrinker¹⁸¹
 ex.beer.bottles.empty drinker
 ‘somebody who used to always drink all the contents of his beer bot-
 tles’

Like *Festmacher*, *Totschläger* may refer either to a person who beats other people to death (741a) or to an instrument that can be used for beating other people to death (741b).

The data above show that Zeller’s claim (2001, p. 264) that *-er*-nominalizations of resultatives are impossible is not correct. That nominalizations with resultatives are possible is not really surprising if we look at examples like *Klamotten-am-Vortag-Rausleger* (‘person who puts their clothes out on the day before’), *Alle-die-mich-kennen-Grüßer* (‘person who says “hello to everyone I know” on the radio/TV’), and *Aspirin-vor-dem-Schlafengehen-Einnehmer* (‘person who takes an Asprin before going to bed’). These nominalizations clearly take phrases as input. This shows that the ‘No Phrase Constraint’ does not hold for *-er*-nominalizations.

¹⁷⁷Wiglaf Droste, taz, 23.11.2001, p. 20.

¹⁷⁸taz, bremen, 24.05.1996, p. 24.

¹⁷⁹taz, hamburg 21.07.1999, p. 22, *Skins* verurteilt.

¹⁸⁰taz, 25.08.1989, p. 20.

¹⁸¹taz, 13./14.01.2001, p. 32.

These words were taken from an article in the *Spiegel* (14/2000) dealing with swearwords. The article describes a game of a radio station where swearwords are collected. The initial pattern for these swearwords is said to have been provided by Harald Schmidt (a German late night talk-show host), who used the word *Warm-duscher* ('person who takes warm showers') during the soccer championship in 1998. Note that many of the examples I gave above are from the eighties or the early nineties, i. e. before Schmidt's making the pattern popular. A phrasal *-er*-nominalization that is also dated earlier is (742).

- (742) Du bist ein richtiger auf-Parties-Einschlafer!¹⁸²
 you are a real at.parties.asleep.faller
 'You're a right at-parties-asleep-faller.'

This example by Kaufmann (1995a, p. 166) also shows how *-er*-nominalizations like *Einschlafer* that are bad in isolation can be made acceptable. *er*-nouns make reference to the situation denoted by their base verb. The referent is characterized only by its participation in the event. Participation in an event is a suitable characterization of an object only if either the referent displays the characteristic property in a specific situation that can be identified by the speaker and the audience, or the referent displays the characteristic property habitually, i. e. is regularly involved in such an event (Kaufmann, 1995b, p. 398). Since *to fall asleep* is not a property that discriminates between people, the noun as such is strange. The same is true for *Aufsteher* ('up-getter', 'riser') without an appropriate context (Kaufmann, 1995b, p. 398). Lüdeling (1998, p. 104) provides a context where the property of getting up discriminates between people and therefore can be used without further specification: The situation is a hospital where a certain group of patients is allowed to get up during the day while the others have to stay in bed. In this situation it is possible to refer to a member of the first group as *Aufsteher* ('person who gets up') and to a member of the second group as *Liegenbleiber* ('person who does not get up').

Since *-er*-nominalization can take a phrasal input it comes as no surprise that depictive predicates can be part of such nominalizations.

- (743) a. Das Angebot für *Nacktbader* ist bescheiden:¹⁸³
 the offer for nude.bathers is modest
 'The possibilities for nude bathers are limited.'
- b. einem Biedermann, in dem er den ekstatischen *Nackttänzer* einer
 a bourgeois in whom he the ecstatic naked.dancer of.a
 durchzechten Nacht wiedererkennt¹⁸⁴
 through.drunk night recognizes
 'a bourgeois man whom he recognizes as the naked dancer he had encountered during a night of drinking'

¹⁸²Kaufmann, 1995a, p. 166.

¹⁸³taz, berlin, 06.07.1994, p. 20.

¹⁸⁴taz, berlin, 21.02.1995, p. 24.

Lüdeling (2001, p. 102) discusses the noun *Nacktschläfer* ('somebody who (usually) sleeps naked').

Ge- -e-Nominalizations The *Ge-* -*e*-nominalization is the only discontinuous or combinatorial noun derivation in German; it consists of the prefix *Ge-* and the suffix *-e*. The suffix *-e* can be used optionally following the unstressed syllables *-er*, *-el*, *-en* where it is usually suppressed for phonological reasons (*Rumgeeeiere*¹⁸⁵ vs. *Rumgeeier*¹⁸⁶) (see Olsen, 1991, p. 351). *Ge-* -*e*-derivation is quite productive for transitive as well as for intransitive simplex verbs. Deverbal *Ge-* -*e*-nouns have the meaning of 'constant/repeated V-ing' and they usually have the connotation that the constant V-ing is somehow negatively evaluated.

Particle verbs also allow for *Ge-* -*e*-derivation. It is interesting that the *ge-* separates particle and base verb.

- (744) a. ihre Abneigung gegen das bescheuerte *Angemache* auf den
her dislike against the stupid harassment on the
Verbindungsstraßen zwischen Simon-von-Utrecht-Straße und
connecting.streets between Simon-von-Utrecht-Straße and
Reeperbahn¹⁸⁷
Reeperbahn
'her dislike of being harassed on the streets between Simon-von-Utrecht-Straße and Reeperbahn'
- b. dem musikalischen *Eingeschleime* bei Mutti¹⁸⁸
the musical PART (in).sliming at mummy
'the musical attempts to ingratiate oneself with mummy'
- c. Nach den antisemitischen Ausfällen im November, dem
after the anti-Semitic attacks in.the November the
unsäglichen *Ausgekotze* darüber in Eurer internen Nabelschau
unspeakable out-spewing that.over in your internal navel.show
reicht es mir jetzt¹⁸⁹
passes it me now
'After your anti-Semitic statements in November and the unspeakable ensuing self-absorbed drivel on that subject, I have finally had enough.'
- d. Ohne Schwule kein Sex aufm Klo, ohne Neger kein
without gays no sex on.the toilet without negroes no

¹⁸⁵Frankfurter Rundschau, 05.12.1998, p. 1.

¹⁸⁶Frankfurter Rundschau, 29.09.1998, p. 3.

¹⁸⁷taz, hamburg, 24.12.1993, p. 37.

¹⁸⁸taz, hamburg, 27.03.1997, p. IV.

¹⁸⁹Dr. Sabine Wendt, Marburg/Lahn, reader's letter, taz, 04.01.1989, p. 16.

Angegrapsche, ohne Türken keine Junkieszene.¹⁹⁰

groping without Turks no junkie.scene

'Without gays no sex in the toilets, without blacks no groping, without Turks no junkie scene.'

- (745) a. wer das *Angebrülle* von Norbert auf der Bühne
 who the PART (at).screaming from Norbert on the stage
 erlebte¹⁹¹
 experienced
 'those who experienced the shouting at Norbert on stage'
- b. *Rumgeballer*¹⁹²
 PART (around).shooting
 'shooting around'
- c. dieses *Rumgebiege* nach rechts oder links¹⁹³
 this PART (around).bending to right or left
 'this bending around to the right and to the left'
- d. das *Rumgeheule* der FDP¹⁹⁴
 the PART (around).shouting of.the FDP
 'the FDP's whining'
- e. Hauptsache das *Herumgerenne* wird ab und an von Toren
 main.thing the PART (around).running gets off and on from goals
 unterbrochen.¹⁹⁵
 interrupted
 'The main thing is that the running around is interrupted by the occasional goal.'

The examples in (744) are *Ge-*-*-e*-derivations from listed particle verbs¹⁹⁶, those in (745) are derived from productive particle verb combinations. *Ge-*-*-e*-nominalizations of particle verbs with the particle *herum* ('around') are quite frequent. The *an* of *Angebrülle* ('at-shouting') is Stiebels' *an*₅ (1996, Chapter 7.4.1). According to Stiebels, this pattern is highly productive.

Ge--*-e*-derivation from resultative constructions also seem to be possible, although, as Lüdeling (1998, p. 109) remarks, they are not very frequent. Fleischer and Barz (1995, p. 208) give the example in (746).

¹⁹⁰ article about a theater play about Nazi-skins, taz, hamburg, 02.02.1995, p. 23.

¹⁹¹ taz, 15.10.1993, p. 16.

¹⁹² taz, hamburg, 01.02.1996, p. II.

¹⁹³ taz, Magazin, 07.03.1998, p. 8.

¹⁹⁴ taz, 07.01.1998, p. 3.

¹⁹⁵ taz, 01.02.1999, p. 16.

¹⁹⁶ See Stiebels, 1996, p. 105 on verbs like *angrapschen* ('to grope'), *anpacken* ('to grap'), *anrühren* ('to touch'), *antatschen* ('to paw at s. t./s.o.'), and *antippen* ('to tap').

- (746) Totgeschlage
beating.to.death

(747) is a constructed example of a *Ge-* *-e*-nominalization of an object predicative construction.

- (747) ? Dein ewiges *Schöngefinde* anderer Frauen geht mir auf die
your eternal beautiful.finding of.other women goes me on the
Nerven!
nerves
'It gets on my nerves that you are always finding other women beautiful!'

It shows that the predicate that is embedded by *finden* can be separated by the prefix *ge-* from its head. (748) is an example from the World Wide Web:

- (748) das Pfingstmarkt-toll-Gefinde¹⁹⁷
the Whitsun.market.fantastic.finding

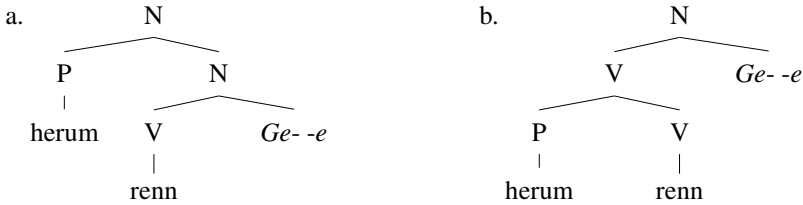
Concluding the discussion of *Ge-* *-e*-nominalization, it can be said that it applies to particle verbs that belong to a productive pattern and also to resultative and object predicative constructions.

As Lüdeling (1998, p. 109) notes, the interesting thing about these *Ge-* *-e*-nominalizations is that there again seems to be a bracketing paradox: If one combines the stem *renn-* with *Ge-* and *-e* one gets *Gerenne*, which means 'repeated or constant running', or more technically 'repeated running events'. However, *Herumgerenne* means 'repeated instances of aimless running events'. The 'aimless' part of the meaning is contributed by *herum*.¹⁹⁸ This meaning of *Herumgerenne* would be expected if the *Ge-* *-e* were combined with the whole particle verb combination.

Lüdeling considers for a moment an account in which an abstract predicate is added to the semantic contribution of *rennen*, but dismisses this suggestion since, according to her, this solution would not extend to listed particle verb combinations. I do not understand this argumentation since the non-transparent forms are always the unproblematic ones in terms of scope relations. A lexical item that is subcategorized for a particle can be listed in the lexicon and the meaning contribution of the complete non-transparent particle verb is represented in this lexical item. See Section 6.1.8 on non-transparent particle verb combinations. Lüdeling suggests the analysis in Figure 19b. It is unclear how the prefix *ge-* is supposed to get in-between the particle and the verb without the assumption of rebracketing. In what follows, I will assume the structure in Figure 19a. I assume that the stem *renn-* that is used to derive *Herumgerenne* already contains the information that it combines with a particle, although the exact semantic and syntactic contribution

¹⁹⁷<http://www.forum.goosh.de/druckversion.cgi?forum=7&topic=5>, 26.05.2002.

¹⁹⁸This is not the only meaning that *herum* has. For other meanings see McIntyre (2001a,b).

FIGURE 19 Alternative Structures for *Herumgerenne*

of the particle is still underspecified. The *Ge- -e*-nominalization can therefore access the semantic contribution that will be instantiated by the particle and the right scope relations can be established.

Note that I do not claim that nouns like *Herumgerenne* are the result of compounding the *Ge- -e*-nominalization of the simplex verb *renn-* with *herum* since—as McIntyre (2001c, p. 22) shows—double particles like *herum* do not appear in normal compounds with a nominal head: While the verb *herumkritisieren* exists, there is no compound **Herumkritik*.

Nominalizations of Infinitival Forms The examples in (749) show nominalizations that correspond to the object predicative in (160b) and the examples in (733) and (752) are nominalizations of constructions with depictives and resultative constructions, respectively.

- (749) a. Das *Gutfinden* von Harald Juhnke zieht sich durch sämtliche
 the good.finding of Harald Juhnke pulls itself through all
 gesellschaftliche Sphären, [...] ¹⁹⁹
 social spheres
 ‘Appreciation of Harald Juhnke traverses all social spheres, ...’
 b. das nicht unbedingt die Prämisse zum *Gutfinden* dieses
 that not necessarily the premise for.the.finding of.this
 Albums sein muß ²⁰⁰
 album be must
 ‘which does not necessarily have to be the premise for liking this al-
 bum’

The data in (749) clearly falsify Rosengren’s claim (1995, p. 102) that object predicatives do not appear in nominalizations. She makes the same claim for depictives, but as the data that was discussed in Chapter 4.1.1 on page 187 show, various forms of verb nominalizations together with depictive predicates are also possible. The sentences in (750) and (751) are examples of a nominalization of an infinitive together with a depictive.

¹⁹⁹taz hamburg, 22.05.1995, p. 23.

²⁰⁰taz, 29.10.1993, p. 16.

- (750) Auch wenn das *Nacktbaden* vielerorts längst Gang und Gebe
 even if the naked.bathing (in).many.places long usual
 ist, bleibt das *Nacktojoggen* verboten.²⁰¹
 is remains the naked.jogging forbidden
 'Even if nude bathing has been common in many places for a long time,
 naked jogging is still forbidden.'

The sentences in (751) are examples with the noun *Rohessen* which was claimed to be non-existent by Koch and Rosengren (1995, p. 13):

- (751) a. [...] trotz ihrer Größe schmecke sie sehr gut, eigne sich aber
 despite.of her size tastes she very good suits self but
 nur zum Rohessen.²⁰²
 only for raw.eating
 'despite its size, it tastes very good, but it should only be eaten raw.'
 b. Er eignet sich auch zum Rohessen, zum Beispiel zu Carpaccio.²⁰³
 he suits self also for raw.eating for instance with Carpaccio
 'It can also be eaten raw, for instance together with Carpaccio.'

In (752) we have instances of infinitive nominalizations of resultative constructions.

- (752) a. zum sauberen *Leerdrücken* von Tuben²⁰⁴
 to.the clean empty.pressing of tubes
 'for squeezing the last scrap out of tubes'
 b. Sich-Austoben bis zum Letztmöglichen, die Beschwörung des
 self.let-off.steam until the last.possible the conjuring of.the
 Irrationalen, das *Kaputtspielen* jeglicher Ordnung – dies scheinen
 irrational the broken-playing of.all order this appear
 die Hauptziele in der Musik nicht nur dieser ungarischen Band zu
 the main.aims in the music not only of.this Hungarian band to
 sein.²⁰⁵
 be
 'To bring letting-off steam to its ultimate limit, to conjure up the ir-
 rational, to lull all order into destruction, these appear to be the main
 goals of this Hungarian band and others producing similar music.'

²⁰¹taz, 05.11.2000, p. 20, dpa.

²⁰²Frankfurter Rundschau, 21.08.1998, p. 25.

²⁰³Züricher Tagesanzeiger, 02.10.1996, p. 19.

²⁰⁴taz, 25.03.1993, p. 20.

²⁰⁵Mannheimer Morgen, 16.10.1989, Feuilleton; Am Rande des Wahnsinns.

- c. Auch der Trainer muß sich dem Prinzip des *Gesundalterns*
also the trainer must self the principle of.the healthy.aging
unterwerfen.²⁰⁶
under.throw
'The trainer too must subject himself to the principle of aging oneself healthy.'
- d. beim *Gesundbeten* des Dollar²⁰⁷
during.the healthy.praying of.the dollar
'during the faith-healing of the dollar'
- e. In Indien und China finden Heilrituale im Tempel statt, in Sri Lanka
spielen Dämonen beim „*Gesundbeten*“ eine Rolle.²⁰⁸
'In India and China healing rituals are performed in the temple, in Sri Lanka demons are involved in the faith-healing.'
- f. Jones wandte sich obskurem *Gesundbeten* zu und verstieg sich in den
Wahn, seinen Gefolgsleuten Gottersatz zu sein.²⁰⁹
'Jones got involved with obscure faith-healing and mistook himself to be his followers' God.'

In many examples in (749)–(752) the complements of the verb are realized in the way that is known from other nominalizations: Accusative objects can be realized by genitive NPs or *von*-PPs.

The nominalization of verb + modal combinations follows the same pattern as the nominalizations discussed so far. Compare the sentences in (753) with the respective sentences in (754):

- (753) a. weil er schlafen will.
because he sleep wants
'because he wants to sleep.'
 - b. weil er gut schlafen kann.
because he good sleep can
'because he can sleep well.'
 - c. weil er Recht haben will.
because he law have will
'because he wants to be right.'
- (754) a. das Schlafen-Wollen
the sleep.want
'the wish to sleep'

²⁰⁶taz, 02.12.1991, p. 13.

²⁰⁷taz, 28.08.1987, p. 8.

²⁰⁸taz Hamburg, 29.10.1992, p. 24.

²⁰⁹taz, 07.03.1989, p. 12.

- b. das Gut-Schlafen-Können
the good.sleep.can
'the ability to sleep well'
- c. das ständige Recht-Haben-Wollen
the always law.have.want
'the wish to be always right'

Corpus examples of nominalizations of predicate complexes are given in (755).

- (755) a. Menschen [...], deren unbedingtes *Gut-Sein-Wollen* beinahe in
humans whose absolute good.be.wanting.to almost in
eine Katastrophe mündet²¹⁰
a catastrophe flows
'People whose desperation to be good almost culminates in a catastrophe'
- b. daß Frauen Qualitäten haben, aufgrund ihres *So-erzogen-Seins*,
that women qualities have on.grounds their so.brought.up.being
und ihres So-Seins, die Männer nicht haben²¹¹
and their so.being that men not have
'that women, due to the way they are brought up and the way that they are, possess certain qualities that men do not.'

These nominalizations are entirely regular and one would not want to list the verbs in the lexicon that can appear as complements of the modals.

Having shown that it is not reasonable to assume listedness to be a criterion for nominalization and having discussed an apparent bracketing paradox with *Ge-* *-e-* nominalizations, I now turn to adjective derivation.

Adjective Derivation Particle verb combinations participate in adjective derivations with the suffixes: *-bar*, *-ig*, and *-lich*. The following examples are provided by Lüdeling (1998, p. 110):

- (756) *-bar*: auffindbar ('discoverable') ← auffinden ('to discover')
zusammenklappbar ('collapsible') ← zusammenklappen ('to fold up')
- ig*: nachgiebig ('yielding', 'compliant') ← nachgeben ('to give in', 'to yield')
auffällig ('striking', 'conspicuous') ← auffallen ('be striking', 'conspicuous')
- lich*: nachdenklich ('thoughtful', 'pensive') ← nachdenken ('to think', 'to reflect')

Only *-bar* is productive.

²¹⁰Mannheimer Morgen, 20.10.1989, Lokales; Vom Chaos hinter der Ordnung.

²¹¹taz, 18.03.1989, p. 10.

-bar-Derivation *-bar*-derivation applies to transitive or ditransitive verbs, i. e. to verbs that have an accusative object. The logical subject of the verb is suppressed and the accusative object is promoted to the subject of the adjective. Sometimes the logical subject of the verb is expressed by a PP. There are also a few *-bar*-adjectives like *brennbar* ('flammable') that have an intransitive base verb, but these are listed in the lexicon (Riehemann, 1998) and not derived by the productive rules. The *-bar*-suffix adds a modal meaning, usually possibility, but sometimes also necessity. The *-bar*-adjectives are similar to the modal infinitives with *sein* that were discussed in Chapter 3.1.5.

The *-bar*-derivation also applies to particle verb combinations:

- (757) a. Die Durchsuchungen seien bereits gelaufen, die Sache nicht mehr
 the searches be already run the matter not longer
anfechtbar.²¹²
 contestable
 'The inquests have already been completed and the matter can no longer be contested.'
- b. Die Zusatzgeräte sind an jede elektronische
 the additional.machines are at every electronic
 Schreibmaschine *anschließbar*.²¹³
 typewriter PART (on).connectable
 'The additional equipment can be connected to any electric type-writer.'
- c. doch sind seine Erkenntnisse auch auf die neuere Geschichte
 but are his discoveries also on the newer history
anwendbar.²¹⁴
 applicable
 'But his discoveries can also be applied to more recent history.'
- d. Der Catcher war nur noch wenige Minuten *ansprechbar*, auch
 the catcher was only still few minutes PART (to).talkable also
 ein Notarzt konnte ihn nicht mehr retten.²¹⁵
 an emergency.doctor could him not more save
 'But the catcher responded only for a few minutes, not even an emergency doctor could save him anymore.'
- e. Als Ulrike Meinhoff noch Journalistin war, veröffentlichte sie ein
 when Ulrike Meinhoff still journalist was published she a

²¹²taz, 18.08.1999, p. 16.

²¹³taz, 12.06.1987, p. 5.

²¹⁴taz, taz-mag, 17.07.1999, p. 4–5.

²¹⁵taz, bremen, 15.12.1993, p. 20.

Buch mit dem Titel „Die Würde des Menschen ist *antastbar*“.²¹⁶
 book with the title The Dignity of Man is offendable

‘When Ulrike Meinhoff was still a journalist she wrote a book with the title “The Dignity of Man is not Invulnerable”.’

The examples in (757) are *-bar*-derivations with particle verbs that have a non-transparent meaning.

Lüdeling (2001, p. 108) remarks that most of the *-bar*-derivation are derivations of listed particle verb combinations. She compares coordinated structures with *-bar*-derivations of particle verb combinations that have both a non-transparent and a transparent reading and concludes that only the derivations from non-transparent particle verbs are well-formed. She discusses the examples in (758) and (759) which show that *anbaubar* can only be formed with the fully lexicalized variant *to cultivate* although the passive of *anbauen + können* with the meaning *to build onto, to add* in the first part of (758b) is grammatical. A similar contrast holds for (759a) and (759b).

- (758) a. Können in Deutschland Bananen angebaut werden oder sind sie
 can in Germany bananas cultivated be or are they
 hier nicht anbaubar?
 here not growable
 ‘Is it possible to cultivate bananas in Germany or can’t they be grown here?’
- b. * Kann der Schuppen hier angebaut werden oder ist er hier nicht
 can the shed here added be or is it here not
 anbaubar?
 add+able
 Intended: ‘Can the shed be built as an extension here or can’t an extension be built here?’
- (759) a. Kann dieser Kandidat aufgestellt werden oder ist er nicht
 can this candidate nominated be or is he not
 aufstellbar?
 nominate+able
 ‘Is it possible to put up this candidate or can he not be put up?’
- b. ?? Kann der Weihnachtsbaum hier aufgestellt werden oder ist er
 can the Christmas.tree here up.put be or is it
 hier nicht aufstellbar?
 here not up.put+able
 Intended: ‘Can the Christmas tree be put up here or is it impossible to put it up here?’

²¹⁶taz, bremen, 28.04.1999, p. 24.

While these data are interesting, the interpretation is not correct. The only thing it shows is that the use of the *-bar*-derivations of a productive form seems to be strange if a *-bar*-derivation from a non-transparent particle verb is also available. The examples in (760)–(769) show that *-bar*-derivation is also possible with transparent particle verb combinations. Some of the patterns are productive. I classified the following sentences according to Stiebels' classification (Stiebels, 1996).

The *an* in (760) is Stiebels' *an*₁ (Stiebels, 1996, Chapter 6.1.2).

- (760) a. zur bereits erwähnten Montagehalle, in der jeder sein
to.the already mentioned assembly.shop in which everyone his
anheftbares Namenskärtchen erhält²¹⁷
PART (on).pinnable name.card receives
'to the aforementioned assembly shop where everyone gets their own
pin-on name tag'
- b. wenn [...] diese nebst persönlichen Daten in eine
when these next.to personal data in an
anklembare Plastikfolie verschweißt worden ist, erst dann
PART (on).clippable plastic.foil welded got is first then
ist der Zutritt erlaubt [...]²¹⁸
is the entrance allowed
'after those are laminated into a clip-on badge along with other personal data, only then are you allowed to enter'

This form of *an* is used with (causative) contact verbs and other verbs of fastening. Examples are *ankleben* ('to stick (on)') and *annähen* ('to sew (on)').

Stiebels' *an*₂ (Stiebels, 1996, Chapter 6.1.2) is combined with motion verbs: *anjagen* ('to race up'), *anhüpfen* ('to jump up'), *anschleichen* ('to sneak up'), *anrennen* ('to run up'). These verbs are intransitive and therefore do not allow the *-bar*-derivation. The *an* in (761) is Stiebels' *an*₃ (Stiebels, 1996, Chapter 7.1.2).

- (761) a. Und Moral ist *anerziehbar*.²¹⁹
and moral is PART (to).educable
'And morals can be taught.'
- b. daß Frauen Qualitäten haben, [...] die offensichtlich auch nicht so
that women qualities have that evidently also not so
schnell anlernbar oder *antrainierbar* sind.²²⁰
fast PART (to).learnable or PART (to).trainable are
'That women possess certain qualities that can evidently also not be
learned or acquired by training that quickly.'

²¹⁷taz, 30.01.1995, p. 15.

²¹⁸taz, 24.01.1989, p. 14.

²¹⁹taz, 22.08.1997, p. 14.

²²⁰taz, 18.03.1989, p. 10.

Examples of particle verbs of this class are shown in (762).

- (762) a. Er trainiert den Kindern gutes Benehmen an.
 he trains the children-DAT good behavior-ACC PART (to)
 'He teaches the children good behavior.'
 b. Sie haben den Kindern Pünktlichkeit anezogen.
 they have the children-DAT punctuality PART (to).taught
 'They instilled punctuality into the children.'

According to Stiebels (1996, p. 130), combinations with *an* are not productive for knowledge transfer verbs, although new forms may be constructed by analogy.

The *an* in (763) is Stiebels' *an*₄ (Stiebels, 1996, Chapter 7.3.5).

- (763) a. der *anknipsbare* Leuchtglobus²²¹
 the PART (on).switchable glow.globe
 'the light-up globe'
 b. einer Hinterglaslandschaft mit *anknipsbarer* Sonne.²²²
 a verre.égglomisé.landscape with PART (on).switchable sun
 'a verre églomisé landscape with a light-up sun'

This version of *an* corresponds to a resultative predicate.

- (764) Das Licht / das Radio / der Ofen ist an.
 the light the radio the oven is on

It can appear together with *machen* ('make') and verbs like *drehen* ('turn') and *schalten* ('switch').

- (765) a. Er macht das Radio an.
 he makes the radio on
 b. Er schaltet das Radio an.
 he switches the radio on

The *an* in (766) is Stiebels' *an*₅ (Stiebels, 1996, Chapter 7.4.1).

- (766) a. „Die Kneipen, Theater und Geschäfte müssen *anfahrbar*
 the pubs theaters and shops must PART (to).drivable
 bleiben.“²²³
 remain
 'The pubs, theaters and shops must remain accessible by car.'
 b. Flughafen Schönefeld jetzt bei jedem Wetter *anfliegebar*²²⁴
 airport Schönefeld now at all weather PART (to).flyable
 'Airport Schönefeld can now be accessed by plane in any weather.'

²²¹taz, berlin, 27.03.1990, p. 24.

²²²taz, 17.09.1992, p. 14.

²²³taz, 05.06.1997, p. 22.

²²⁴taz, berlin, 04.02.1992, p. 22.

- c. Im ebenfalls unter dieser Adresse *ansteuerbaren*
in.the equally under this address PART (to).steerable
Diskussionsforum²²⁵
discussion.forum
'in the discussion forum which can also be accessed under this address'
- d. Dauerläufer, die in der Defensive ackern, ständig
continuous.runners who in the defensive slug.away always
anspielbar sind und dennoch genug Spielwitz haben, [...] ²²⁶
to.playable are and nonetheless enough game.wit have
'Those who never stop running, slug away in the defense, are always ready for the ball, and who still have enough skill,'
- e. Mit dem „City-Ruf“ von [...] sind sie von jedem Telefon aus
with the City-Call from are they from each telephone out
anfunktbar.²²⁷
PART (to).radioable
'With the [...] City-Call they can be reached from any telephone.'

This *an* expresses that the action that is described by the base verb is directed to a thing or a person. The particle can be combined with intransitive agentive verbs. This pattern is highly productive. Examples are verbs of uttering (767) and verbs that are used to express emotions (768).

- (767) a. Er quatscht sie an.
he gabs her PART (to)
'He chats her up.'
- b. Sie schrien ihre Nachbarn an.
they shout their neighbors PART (to)
'They shout at their neighbors.'
- c. Die Katze faucht Andreas an.
the cat hisses Andreas PART (to)
'The cat spits at Andreas.'
- (768) a. Sie lacht ihn an.
she laughs him PART (to)
'She smiles at him.'
- b. Er schmachtet die große Diva an.
he gazes.lovingly the great diva PART (at)
'He gazes at the great diva adoringly.'

²²⁵taz, 08.07.1999, p. 13.

²²⁶taz, 22.02.1999, p. 16.

²²⁷taz, bremen, 09.03.1989, p. 18.

- c. Er staunt den Akrobaten / den Dom an.
 he marvels the acrobat the cathedral at
 'He marvels at the acrobat / the cathedral.'

Stiebels also considers verbs like *anfunken* ('to contact by walkie-talkie'), *anblinken* ('to flash (at)'), *anleuchten* ('to shine (at)'), *anstrahlen* ('to beam at somebody/something'), and *anscheinen* ('to shine at') that describe the transfer of optical or acoustic signals as members of this *an*-class.

The *an* in (769) is Stiebels' *an*₆ (Stiebels, 1996, Chapter 5.2.3).

- (769) Das Konzept sei zwar „grundsätzlich *andenkbar*“.²²⁸
 the concept be actually in.principle PART.thinkable
 'In principle, it is possible to start thinking about the concept.'

This version of *an* is the most productive one of the particles and prefixes Stiebels examined in her study. The *an* expresses a partiality of the action that is described by the main verb. It can be combined with verbs that describe incremental or decremental processes, which makes an early termination plausible. The group of *an*-verbs can be divided into those where the *an* expresses a spatial relation: *anbohren* ('to begin to bore a hole'), *anknabbern* ('to nibble'), *anlecken* ('to (begin) to lick'), *annagen* ('to (begin) to gnaw'), and those where the *an* is a progressive marker: *andrucken* ('to start to print'), *anlesen* ('to begin to read'), *ansingen* ('to begin to sing').

Concluding the discussion of *-bar*-derivations with particle verbs with *an*, it can be said that it is possible with transparent particle verbs, including verbs that follow productive particle verb combination patterns.

Having established that particle verb combinations that are the result of a productive process can take part in *-bar*-derivations, I am faced with another apparent bracketing paradox: There are particles that only combine with intransitive verbs and add another argument. On the other hand, *-bar* only combines with transitive verbs productively. If one assumes the structure in Figure 20a on the facing page with *fahr-* being the stem of the intransitive version of *fahren*, one has to explain why *-bar* can combine with intransitive verbs. Furthermore, the modal operator that is contributed by *-bar* scopes over the complete meaning of the particle verb. In the light of pairs like (770), the structure in Figure 20a seems implausible since there is no way of deriving the meaning of the second word from the meaning of the first:

- (770) a. *schaffbar* ('do-able') → *wegschaffbar* ('possible to be got rid of', 'disposable')
 b. *greifbar* ('reachable') → *angreifbar* ('possible to be attacked')
 c. *stellbar* ('possible to stand/set up') → *darstellbar* ('possible to be represented', 'representable'), *einstellbar* ('possible to set', 'employable'), *herstellbar* ('possible to manufacture'), *vorstellbar* ('imaginable')

²²⁸taz, 06.11.1997, p. 2.

Even worse, a *bar*-adjective without particle does not exist for the examples given in (771).

- (771) a. *gleichbar* ⇔ *ausgleichbar* ('possible to even out')
 b. *weisbar* ⇔ *nachweisbar* ('possible to prove')

At first glance, Figure 20b seems to be the only option. Bierwisch (1987) and Stiebels and Wunderlich (1994) assume a uniform analysis for inflectional and derivational morphology of particle verbs whereby the inflectional and derivational material attaches directly to the verbal stem, i. e. the structure in Figure 20a. Since an analysis that treats inflection and derivation in a uniform way rather than stipulating different structures for various morphological phenomena on a case by case basis is to be preferred, I also assume the structure in Figure 20a since this is the structure that I assumed for inflection in Section 6.1.10.1. While this may

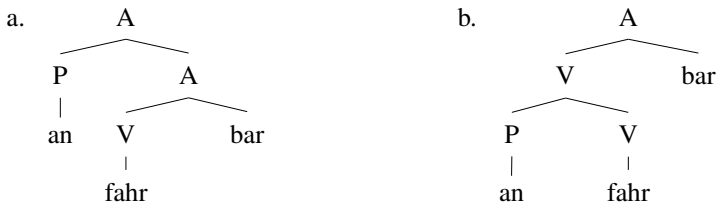


FIGURE 20 Alternative Structures for *anfahrbar* ('reachable by car')

seem to be problematic for the reasons mentioned above, it is not problematic in constraint-based theories. I assume that the stem in Figure 20a contains a slot for the particle that will be added in a later step. The valence and the semantics of the whole combination is represented at the stem of the particle verb so that *-bar* may access it.

Having dealt with inflection and derivation and various bracketing paradoxes, I now want to discuss the problem of non-existing bases.

6.1.10.3 Non-Existing Bases

It has been noted by many researchers that there are particle verbs that have a base verb that cannot be used without the particle (for instance *anstrengen* ('to strain') and **strengen*).

Similarly there are particle verb formations (772a) and derivations (772b,c) where the derived base never appears without particle.

- (772) a. *Dose* ('tin'), *eindosen* ('to tin'), but **dosen*²²⁹
 b. *rauben* ('to steal'), *ausrauben* ('to rob'),
Ausraubung ('robbing'), but **Raubung*²³⁰

²²⁹See Fehlich, 1998, p. 162 for a long list of denominal particle verbs with *ein* where no simplex base verb exists.

²³⁰Fleischer and Barz, 1995, p. 173.

- c. *ausbreiten* ('to spread out'), but **breiten*,
Ausbreitung ('out-spreading'), but **Breitung*²³¹

Similar examples have been discussed in the previous subsection about *-bar*-derivation. Such data is explained by an analysis in which the derivation applies to the linguistic object that represents the particle verb. So if the *-ung*-nominalization applies to a lexical representation for *raub-* that contains the information that there will be a particle, the constraints that block the derivation of **Raubung* from the simplex base *raub-* do not apply to this lexical entry and the derivation succeeds. For the same reason, it is not necessary to list **strengen* in the lexicon as a verb that could appear without a particle: The lexicon contains a lexical entry for the verb stem *streng-* that selects the particle *an*. The stem is inflected and after inflection it is combined with the particle. With such an approach examples like (772) do not pose a problem.

Before I conclude the discussion of syntactic and morphological properties of particle verbs, I want to make some brief remarks about the visibility of the morphological structure.

6.1.10.4 Visibility and Modularity

Neeleman and Weermann (1993, p. 471–473) treat particle verbs as morphological objects. To explain why iterated particles, iterated resultatives and the combination of particles and resultative predicates are impossible, they formulate the *Complexity Constraint* which rules out certain structures (see Chapter 7.1 for a more detailed discussion of this constraint). Since this constraint operates both on syntactic structures (resultatives) and—according to them—on morphological structures (particle verbs), they conclude that morphological structures must be visible in syntax.

Stiebels and Wunderlich (1994, p. 917) criticized this assumption as far too general. They give the examples in (773), which show that syntax cannot 'see' morphological negation elements.

- (773) a. Er war mit seinem Computer nicht zufrieden, sondern wollte
 he was with his computer not satisfied but wanted
 einen neuen.
 a new
 'He was not satisfied with his computer, but wanted a new one.'
- b. *Er war mit seinem Computer unzufrieden, sondern wollte einen
 he was with his computer unsatisfied but wanted a
 neuen.
 new
- c. Alkohol hemmt ihn nicht, sondern macht ihn reizbar.
 alcohol inhibits him not but makes him irritable
 'Alcohol does not inhibit him, but makes him irritable.'

²³¹Paul, 1920, p. 75.

- d. * Alkohol enthemmt ihn, sondern macht ihn reizbar.
 alcohol frees.from.inhibitions him but makes him irritable

Morphological negation always has word-internal scope and is therefore not visible for a connector like *sondern* ('but').

Stiebels and Wunderlich propose an analysis where particles are part of morphological structures and they restrict the visibility of elements in syntax to the base verbs and these particles. The visible elements are marked by a stipulated feature MAX+. When the verb is positioned in the initial position, the two morphological objects enter the syntax component separately. When the particle verb enters derivation, the MAX value is changed to '–' and the particle verb cannot be split anymore.

In the approach that I will formalize in the next section, no morphological structures are visible in syntax. If particles are complements and parts of the verbal complex, it is clear that they are syntactic objects. They are only combined with their base verb in the morphology component when a derivation has taken place. The derivation structures are not visible in syntax. If the base verb is just inflected without prior derivation, the particle is simply a normal complement that is part of the predicate complex.

Complex syntactic expressions can be combined with other elements via compounding (*das alte Scheiße-schwimmt-oben-Prinzip*²³² ('the old shit swims on the top principle')).²³³ The discussion of *-er* and *-ung*-nominalizations showed that the 'No Phrase Constraint' does not hold for derivation either. In terms of visibility, this means that morphology must be able to take syntactic objects as input both for compounding and for derivations. However, there is no need to look inside such syntactic objects. No access to the internal syntactic structure is required. Thus it is possible to see syntax and morphology as two separate modules of grammar that share a certain vocabulary (Di Sciullo and Williams, 1987).

6.1.11 Conclusion of the Data Section

To sum up, one can conclude that particles behave in a way that is known from other elements in the predicate complex. All classes of particles can be extracted and positioned in the *Vorfeld*. The restrictions on these frontings are not syntactic, but depend on contrast, and discourse structure. The particle can also appear separated from a verb in final position if it is contrasted (focus split) or if an element that further specifies the meaning of the particle intervenes. In dialects of German, the particle always appears at the left periphery of the verbal complex. So, particle verbs can be discontinuous even in head-final contexts. This strongly suggests that particles have a syntactic life of their own.

On the other hand, we are faced with the evidence from derivational morphology. Particles can appear in the middle of complex entities that are derived by morphological processes.

²³²taz, 01.11.1999, p. 15.

²³³See also Schmidt, 2000 for examples.

Inflectional affixes like *ge-* *-t* in *auf-ge-hör-t* (‘ended’) and derivational affixes like *Ge-* *-e* in *Herum-ge-renn-e* (‘repeated instances of aimless running events’) attach to the stem of the verb, although they scope over the meaning of the complete particle verb combination. A uniform treatment of both inflection and all derivations of particle verbs, i. e. an approach where the affixes always attach to the verbal stem before the combination of particle and verb, is to be preferred over an approach that assigns structures on a case by case basis. An analysis that assumes that inflection and derivation applies to stems that contain the information about particles to be added later makes the right predictions without any bracketing paradox and copes with the problem of non-existing bases.

6.2 The Analysis

Given the data in Section 6.1, it seems reasonable to treat particles as elements that take part in complex formation.²³⁴ In the following subsections, I provide the basic lexical entries for non-transparent particle verbs, and I discuss a lexical rule that allows a template to be derived for some prototypical particle verbs that are the result of productive particle verb combinations. Analyses for the verb position, for the fronting of particles and for the verbal complex in Franconian/Thuringian is provided. I deal with both inflection and derivation of particle verbs, resultatives, and subject and object predicates.

6.2.1 Lexical Entries for Nontransparent Particle Verbs and Verb Position

(774) shows the relevant aspects of the LOCAL value of the lexical entry for the non-transparent particle verb *vorhaben* (‘to plan’). The semantic contribution of

(774) (*vor*) *hab-* (‘to plan’, non-transparent particle verb):

CAT	[	SUBCAT	⟨ NP[<i>str</i>] _[1] , NP[<i>str</i>] _[2] ⟩
		XCOMP	⟨ PART[<i>vor</i>] ⟩
CONT	[	ARG1	[1]
		ARG2	[2]
		<i>vorhaben</i>	

the particle verb is not computed compositionally from the meaning of the verb and the particle when they are combined in the sentence, but is represented as the CONT value of the stem. The form of the particle that has to be combined with the (inflected) stem is fully specified in the lexical entry as the XCOMP element.

I follow Olsen (1999b, p. 238) and McIntyre (2001b, p. 44) in assuming that particles like *vor* are not prepositions, but are related to prepositions by lexical

²³⁴Tilman Höhle suggested using the same rule for the combination of particle and verb as for the verbal complex in his 1976 dissertation. The chapter of his dissertation that deals with this issue was published as Höhle, 1982. Höhle deals mainly with morphological problems. The syntactic properties of the particle verb constructions are not explored in detail.

redundancy rules. Hence, the element in XCOMP is not of category P or PP, but PART. Figure 21 shows the analysis for the example (775), in which the verb is in final position.

- (775) weil er das vorhat.
 because he that PART(before).has
 'because he plans to do this'

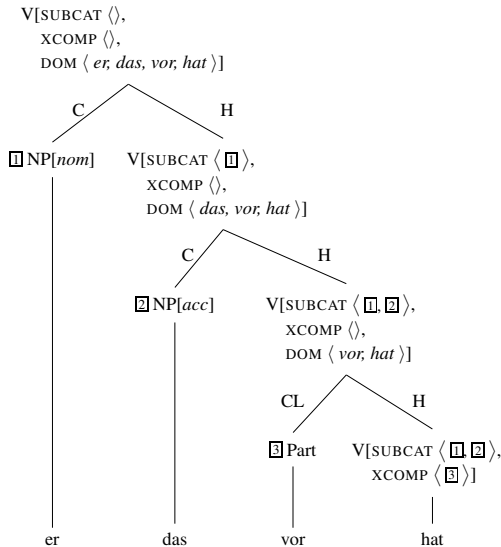


FIGURE 21 Analysis of *weil er das vorhat*.

Since *vorhat* is finite, the subject is represented as a member of the SUBCAT list. Particle and verb are combined in a head-cluster structure and then the accusative object and the subject are combined with the head in further projections licensed by the Head-Argument Schema.

For the sentence (776), in which the verb is in initial position, I assume the analysis shown in Figure 22 on the next page.

- (776) Hat er das vor?
 has he that PART(before)
 'Does he plan to do this?'

The tree shows dominance relations. The constituents do not appear in surface order in such trees. The surface order of the elements is represented in the constituent order domain (DOM) of each node. The dominance structure is entirely the same, only the serialization of the main verb differs.

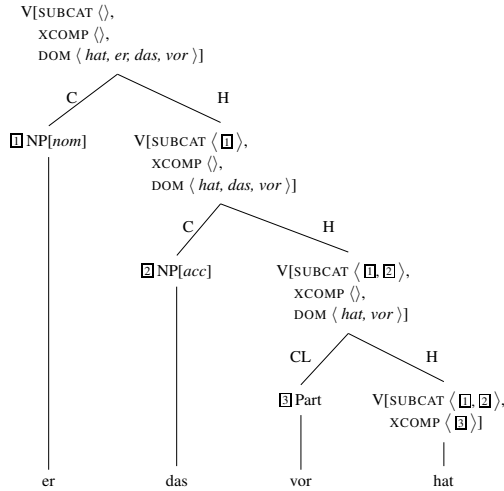
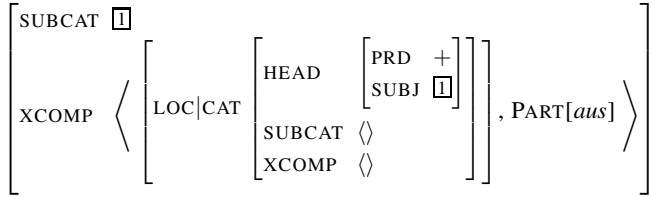


FIGURE 22 Analysis of *Hat er das vor?*

For subject predicative verbs like *aussehen* ('to look') and *vorkommen* ('to seem to somebody to be'), I assume that they select both the particle and the embedded predicate via XCOMP.

(777) (*aus*) *seh-* ('to look', subject predicative particle verb):



For the analysis of sentences like (704a) and (704b)—repeated here as (778a) and (778b)—I assume that a complex head for *vorkommen* or *aussehen* is combined with the predicate.

- (778) a. Das kam ihm dumm vor.
 this came him silly PART
 'This seemed silly to him.'
- b. Er sieht gut aus.
 he looks good PART
 'He looks good.'

Having explained the basic assumptions about particle verb combinations and the representation of non-transparent particle verbs, I now turn to particle verbs that follow a productive pattern.

6.2.2 Lexical Items for Productive Particle Verb Combinations

A large group of particle verbs is transparent and can be analyzed compositionally. The most detailed study of the semantics of German particle/prefix verb combinations was done by Stiebels (1996). She examined several meanings of the particles *an* and *auf*. She uses indices to distinguish certain meanings of these particles. I have already used her indices in the discussion of *-bar*-derivation in the data section. In what follows, I will give some sample analyses of transparent particle verbs that are representative for certain classes of particle verb combinations.

(779) shows examples where the particle is an aspectual marker. The particle does not change the valence of the verb.

- (779) a. Er lacht.
 he laughs
 b. Er lacht los.
 he laughs PART
 ‘He starts to laugh.’
 c. *Er lacht sie los.
 he laughs her PART

(779c) shows that it is impossible to have an additional NP complement that is not selected by the base verb as is possible in resultative constructions. (780a,b) show that transitive verbs cannot be combined with the particle *los* if the object is expressed.

- (780) a. *Er liest das Buch los.
 he reads the book PART
 Intended: ‘He starts to read the book.’
 b. Er liest los.
 he reads PART
 ‘He starts to read.’

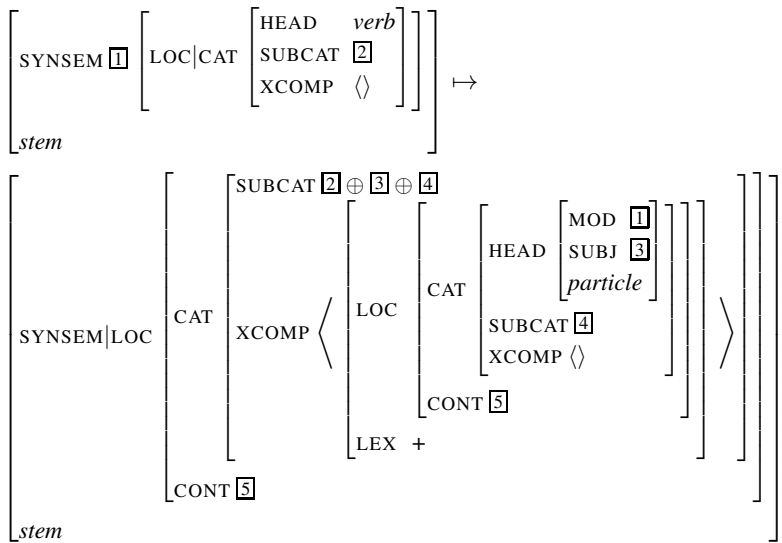
The particle *an*₅ behaves differently:

- (781) a. Er lacht sie an.
 he laughs she PART (to)
 ‘He smiles at her.’
 b. *Er lacht sie.
 he laughs her

It adds an argument. The base verb must be intransitive and agentive (Stiebels and Wunderlich, 1994, p. 950). This contrast suggests that the particle is responsible for the argument structure of the complex verb. *an*₅ adds an argument, but *los* does not. Both particles can combine with intransitive verbs only. Furthermore, the particle selects the semantic class of the base verb. It is not adequate to analyze the particle as the head of the particle verb since the particle is embedded

under the verb in the predicate complex, as was argued above. I therefore suggest treating particles like *los* and *an* as lexical adjuncts. Since they are adjuncts, they can impose their selectional restrictions on the head they combine with and can modify the meaning of their head. Since they are analyzed as lexically introduced dependents, they can contribute to the argument structure of the lexical object. This contribution is done by argument composition, a technique that was demonstrated in Section 2.2.1 where I introduced the analysis of verbal complexes. As was shown in Section 1.7, adjuncts select the head they modify via the MOD feature. Since MOD has a *synsem* object as its value, both syntactic and semantic properties of the modified head can be selected. On the other hand, the data in Section 6.1 suggested treating the particle as an element of the verbal complex. I will unify these two insights and analyze the particles in (779b) and (781a) as subcategorized modifiers. The lexical rule in (782) takes a verb with the empty list as XCOMP value as input and produces a new lexical item that subcategorizes for a particle.

(782) Lexical Rule for Productive Particle Verb Combinations:



The lexical rule in (782) is very similar to the rule for resultative constructions that was given in (576) on page 241. The difference is that the format of the input sign is not restricted by the rule except for the restriction of the XCOMP value. The rule applies to all verbs with an empty XCOMP value. Predicate complex forming verbs are excluded as input to the rule since their XCOMP value is not empty. This correctly predicts that the iteration of particles is not possible. Note that my account does not predict that particle verbs which embed another predicate do not exist. In fact, various types of such verbs do exist. Examples are the subject predicative *vorkommen* ('to seem to somebody to be') and *aussehen* ('to look')

in (778) and also the phase verb *anfangen* ('to start') that will be discussed in Section 6.2.4. These verbs are not derived via productive rules. They are listed as such in the lexicon.

Whether a verb that is licensed by the rule in (782) is actually used in an analysis depends on the presence of a particle that can be combined with this verb. The valence requirements of the output verb are determined by the particle: The SUBCAT and SUBJ value of the particle are attracted by the output verb. The rule licenses verbal stems that select particles that modify the base verb semantically. This is indicated by the structure sharing of the MOD value of the particle and the SYNSEM value of the input verb ($\boxed{1}$).²³⁵

Particles like those in (780) and (781) have the form of adjuncts. They select their head via MOD. The entry for *los* is shown in (783).

(783) *los* (aspectual marker):

CAT	HEAD	MOD	V[SUBCAT \langle NP[<i>str</i>] \rangle , CONT $\boxed{1}$]	
		SUBJ	$\langle \rangle$	
		<i>particle</i>		
CONT	SUBCAT	$\langle \rangle$		
	XCOMP	$\langle \rangle$		
	SOA	$\boxed{1}$		
		<i>begin</i>		

This particle modifies an intransitive verb (SUBCAT = \langle NP[*str*] \rangle) and encapsulates the semantics of this verb ($\boxed{1}$) under the relation it contributes ('begin'). When lexical items that are licensed by the lexical rule in (782) are combined with the particle, they take the semantic contribution from the particle. This is ensured by the structure sharing $\boxed{5}$ in (782). The particle does not introduce its own arguments. Therefore the value of its SUBJ list and its SUBCAT list is the empty list.

As an example, consider what happens if the lexical rule applies to the entry of the base verb *lachen* ('to laugh').

(784) *lach-* ('laugh', intransitive verb):

CAT	SUBCAT	\langle NP[<i>str</i>] <u>1</u> \rangle
	XCOMP	$\langle \rangle$
CONT	AGENT	<u>1</u>
		<i>lachen</i>

²³⁵The rule in (782) is in a certain way similar to the Adjunct Introduction Lexical Rule that van Noord and Bouma (1994) use: Like in van Noord and Bouma's rule, an adjunct is introduced into a valence feature list. See Chapter 4.3 for a discussion of this rule.

of (the finite verb) *loslachen* also contains exactly one element, and *loslachen* is thus an intransitive verb.

Since the particle verb lexical rule identifies the MOD value of the particle with the SYNSEM value of the base verb ([5] in Figure 23), the particle *los* can access properties of the base verb it attaches to and can hence also impose constraints on the length of the SUBCAT list of the base verb. It can therefore be ensured that *los* attaches to intransitive verbs only.

Now consider the representation of semantic information in the analysis of *loslachen*, which is shown in Figure 24. The particle verb lexical rule applies to

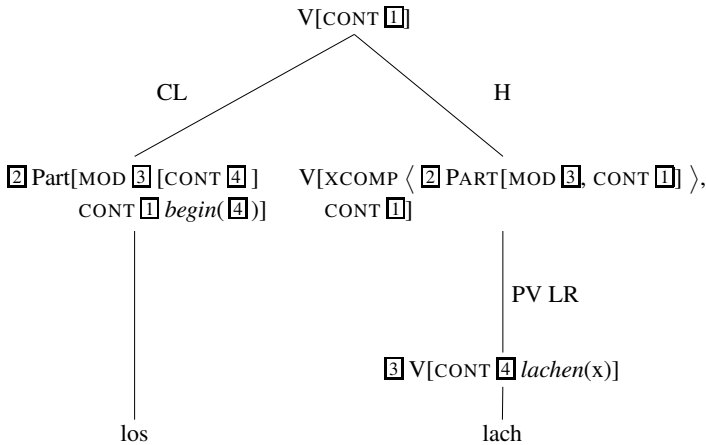


FIGURE 24 Combination of *los* and *lachen* (semantic information)

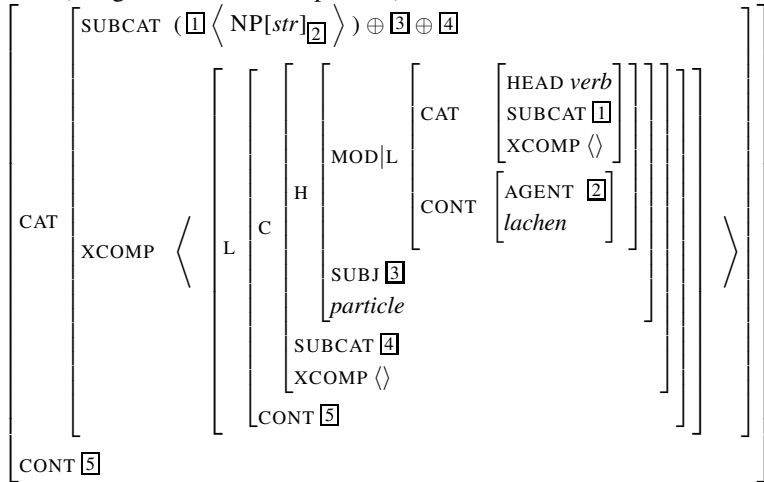
lach- and licenses a lexical item that selects a particle the MOD value of which is identical to the input of the rule ([3] in Figure 24). Therefore this particle can access the semantic information contributed by the base verb. The output of the lexical rule has a CONT value that is identical to the CONT value of the particle ([4]). The actual value is not constrained by the feature structure of the lexical item that selects the particle. The only thing one knows at this point is that there will be a particle and that it will contribute some meaning. In the next step, the verb that selects for the particle is combined with the particle. This combination is licensed by the Head-Cluster Schema which was given on page 87. The Semantics Principle ensures that the meaning contribution of the head in the head-cluster structure is identical to the meaning contribution of the mother, hence [1] is the CONT value of the complete particle verb. The actual value of [1] is determined by the particle. In the case of *los*, the particle contributes the *begin* relation. The argument of the *begin* relation is the semantic contribution of the base verb: *lachen(x)*. The particle can access the meaning contribution of the base verb since the MOD value of the particle is identified with the SYNSEM value of the base verb ([5]). In the lexical

entry (783) for *los* it is specified that the CONT value of the modified element is the argument of the *begin* relation. The full semantic contribution of the particle in Figure 24 is therefore *begin(lachen(x))* where x is linked to the agent of *lachen*. Since this meaning contribution is identified with the meaning of the verb selecting for the particle and also with the meaning of the complete particle verb, the meaning of the complete verb is also *begin(lachen(x))*.

I now turn to the complete analysis, unifying syntactic and semantic aspects discussed above. Readers who only want to get the general idea may skip the following and continue to read below (787).

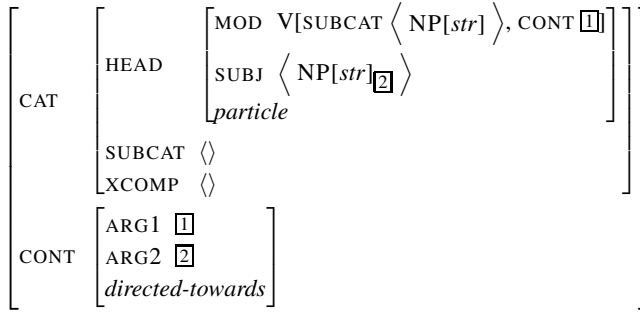
The result of the application of the particle verb lexical rule in (782) to the lexical entry for *lach-* in (784) is shown in (785):

(785) *lach-* ('laugh' + selection for particle):



This item has to be inflected in order to be usable in syntax. The result of the inflection will be a lexical item that is very similar to (785): For finite verbs, only the phonological form is changed, i. e., inflectional material is concatenated with the phonological representation of the stem, and information about the verb form (VFORM) and agreement is added. For non-finite verbs, the subject is removed from the SUBCAT list, as was discussed in Chapters 1.6 and 3.2.4. Alternatively, (785) may be used in derivations. In the following, I will use the entry in (785) to explain the combination of particle and verb. When a form of the entry in (785) is combined with the particle in (783), the structure under CAT|XCOMP gets instan-

(788) *an*₅ (direction):



The additional argument—an NP bearing structural case—is represented as an element in the SUBJ list. This element is linked to an argument of the *directed-towards* relation ($\boxed{2}$). The other argument of this relation is identified with the content provided by the base verb.

Figure 25 shows the valence representations in the analysis of the combination of the particle *an* with a finite form of *lachen*. This figure is parallel to Figure 23

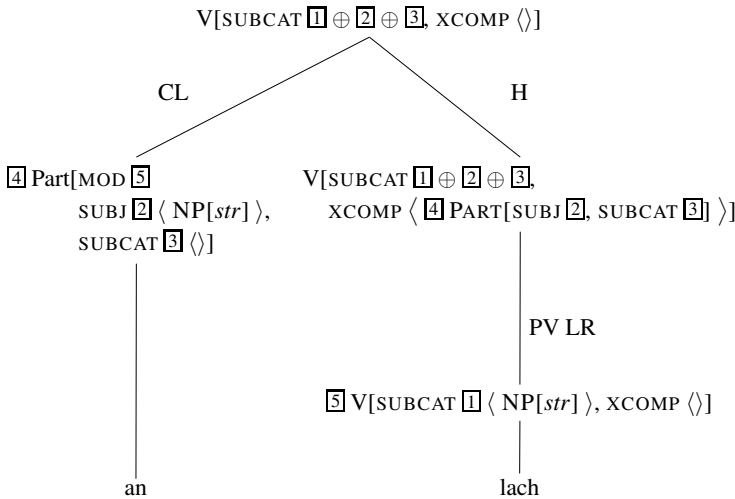


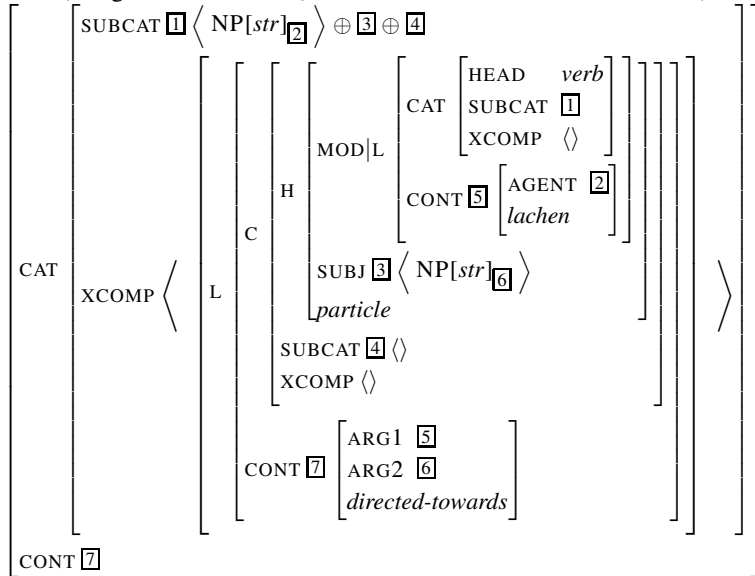
FIGURE 25 Combination of *an* and *lachen* (valence information)

on page 346 which showed the analysis of *loslachen*. The only difference is that *an* has an element in SUBJ. Therefore $\boxed{2} \oplus \boxed{3}$ is a list that contains exactly one element. The verb *anlachen* has two NP[*str*] in its SUBCAT list, i. e., it is a transitive verb.

The composition of the meaning of *anlachen* is completely analogous to the meaning composition for *loslachen* which was shown in Figure 24 on page 347.

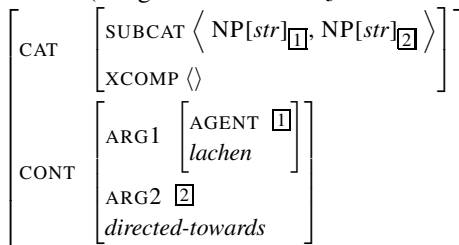
Turning to the complete analysis, consider again the lexical item for *lacht* in (785) which is the result of the particle verb lexical rule. The result of the unification of *an*₅ and the specification in the XCOMP list of this lexical item for *lacht* is shown in (789).

(789) *lacht* ('laughs' + Particle *an*₅, Result of the Unification in XCOMP):



The result of the combination of *lachen* and *an*₅ is shown in (790).

(790) *anlacht* ('laughs' + Particle *an*₅ combination):



Since *an*₅ contributes an element via its SUBJ value, the resulting verb is transitive. For finite verbs we get a complex head that contains both the subject of *lachen* and the element that was contributed by *an*₅ in its SUBCAT list. These elements are dependents of the same complex head and therefore they can appear in any order in the domain of their head, as the examples (696c,d), which are repeated as (791) for convenience, show:

- (791) a. weil niemand ihn anlacht.
 because nobody-NOM him-ACC PART.laughes
 'because nobody smiles at him.'
- b. weil ihn niemand anlacht.
 because him-ACC nobody-NOM PART.laughes
 'because nobody smiles at him.'

Both elements have structural case and therefore the first one (the subject of the base verb) gets nominative and the second one (the element contributed by *an*₅) gets accusative. The element that was added by *an*₅ can also surface as subject in passive constructions:

- (792) weil er nie angelacht wurde.
 because he-NOM never PART.laughed was
 'because nobody ever smiled at him.'

The example in (701d)—repeated here as (793)—is ruled out for the same reasons that ruled out the iteration of resultative predicates that was discussed on page 243.

- (793) * weil Maria Karl anloslacht.
 because Maria Karl PART.PART.laughes
 Intended: 'because Maria starts to smile at Karl.'

The lexical entries for *los* and *an* as given in (783) and (788), respectively, are adjuncts and nothing so far prevents these adjuncts from modifying a simple intransitive verb. The combination of particles with a verb via the Head-Adjunct Schema is not desired since this makes wrong predictions with respect to the frontability of the verb and other distributional facts that were discussed in the data section. This problem can be solved very easily by assuming that adjunct daughters have to be LEX— while particles are specified to be LEX+ in the lexicon. All other adjuncts are underspecified with respect to their LEX value, no projection is necessary for adverbs like *gestern* ('yesterday') that do not take complements.²³⁶

6.2.3 Particle Fronting

Von Stechow and Sternefeld (1988) suggest a structure like (794) for their example, which was discussed above as (662).

- (794) [Die Tür auf _{-i}]_j hat er gemacht_i _{-j}.
 the door open has he made
 'He opened the door.'

In (794) the verb *gemacht* is moved back after fronting *die Tür aufgemacht*.²³⁷ Instead of the structure in (794), I assume a structure like the one in (795).

²³⁶ Thanks to Detmar Meurers for some discussion on this point.

²³⁷ Alternatively, one can assume that *gemacht* is moved out of *die Tür aufgemacht* before *die Tür auf* is moved. Such an analysis has never been proposed in HPSG, but an analysis where elements that

- (795) [Die Tür auf]_j hat er [_{-j} gemacht].
 the door open has he made

Since such sentences with *machen* + predicate have to be regarded as constructions with an obligatorily subcategorized predicate like *finden* ('find', 'think') and *nennen* ('call'), I will demonstrate my analysis with the sentence (643a) which contains a non-transparent particle verb. In von Stechow and Sternefeld's analysis, (643a) would get the structure in (796).

- (796) [Vor-_{-i}]_j hat_i er das.
 PART (before) has he this

Haider (1990b, p. 96; 1993, p. 280; 1997a, p. 35–36; 1997b, p. 86–87, p. 93), Fanselow (1993, p. 68), Haider, Olsen, and Vikner (1995a, p. 17), Wöllstein-Leisten (2001, p. 181), and Wurmbrand (2001, p. 646) explicitly rule out structures like the one in (797) because of the ungrammaticality of the example.

- (797) * [Das vor-_{-i}]_j hat_i er.
 this PART (before) has he

However, since sentences like (643a) are possible, structures like (796) should also be possible. As was explained in Chapter 1.9, I do not assume a verb movement analysis for German. Therefore the verb is not moved away from the particle and hence I do not have to assume movement back from the *Vorfeld*. But even with verb movement analyses like the ones suggested by Jacobs (1986), Kiss and Wesche (1991), Netter (1992, 1998a), Egli and von Heusinger (1992), Frank (1994), Kiss (1995), and Meurers (2000, p. 206–208)²³⁸ structures like the one in (796) are not necessary: If the particle is analyzed as a complement (_{-i}) of the finite verb (_{-j}), as it is shown in (798), the extraction of the particle has the normal pattern of partial verb phrase fronting.²³⁹

- (798) [Vor]_i hat_j er das [_{-i} _{-j}].
 PART (before) has he this
 'He plans (to do) that.'

In my approach, sentences (641c) and (643a) have structures like those given in (799).

depend on a head in the *Vorfeld* are moved back into the *Mittelfeld* has been suggested by Hinrichs and Nakazawa (1994b, 1999).

²³⁸Meurers (2000, p. 207, fn. 10) suggests that the element that introduces the dependency for the verb in initial position contains the phonology of the particle if the moved verb is part of a particle verb. With such a treatment one is forced to assume structures like (797).

²³⁹Kiss and Wesche (1991) use the feature *DSL* to establish the connection between the finite verb in initial position and its trace. Jacobson (1987) used this feature to account for the position of particles in English. The analysis in (798) is basically Jacobson's head movement analysis (1987, p. 55) applied to German.

- (799) a. [Vor]_j hat er das jedenfalls _{-j}.
 PART (before) has he this in.any.case
 ‘He plans (to do) that anyway.’
 b. [Fest]_j scheint [_{-j} zu stehen], daß
 PART (solid) seems to stand that
 ‘It seems to be certain that ...’

The analysis of (643a) is shown in Figure 26. For this analysis to work, it is not

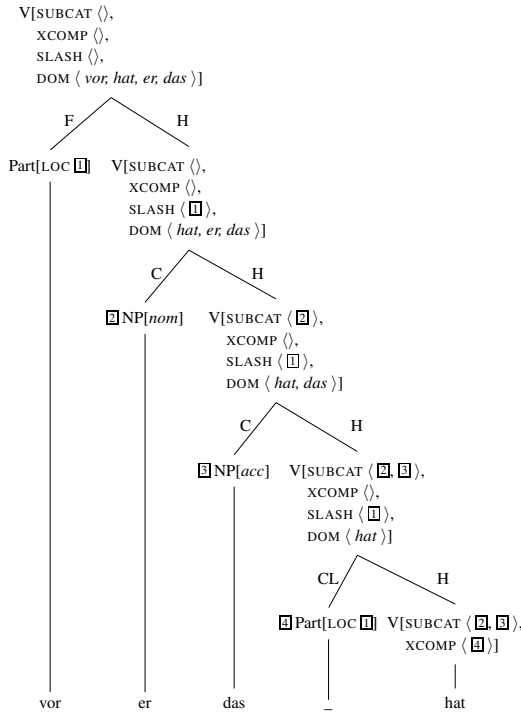


FIGURE 26 Analysis of *Vor hat er das*.

necessary to assume that the particle is projected in some way, as it would be in \bar{X} -theory. See also Section 2.2.2 on this point.

Having explained particle fronting, I now turn to the serialization patterns in German dialects in which the particle is serialized independently from its verb at the left periphery of the verbal complex.

6.2.4 The Verbal Complex in Thuringian

Phase verbs like *anfangen* (‘start’) and *aufhören* (‘stop’) are raising verbs. They are able to form a verbal complex with the verb they embed (See Kiss, 1995 and Chapter 2.1.4). The important thing to focus on here is the relation of base verb

and particle, and how the order in the verbal complex in examples like (697)—repeated here as (800)—can be accounted for.

- (800) daß ich an zu weinen fing.
 that I PART to cry started
 ‘that I started to cry.’

(801) shows the LOCAL value of the lexical entry for *anfangen*.

- (801) (*an*)*fing* (‘started’, finite form):
- $$\left[\begin{array}{l} \text{CAT} \\ \text{CONT} \end{array} \left[\begin{array}{l} \text{SUBCAT } \boxed{1} \oplus \boxed{2} \\ \text{XCOMP } \langle \text{V}[\text{SUBJ } \boxed{1}, \text{SUBCAT } \boxed{2}, \text{inf}, \text{LEX+}]:\boxed{3}, \text{PART}[an] \rangle \\ \text{ARG1 } \boxed{3} \\ \text{anfangen} \end{array} \right] \right]$$

Figure 27 on the following page shows how the sentence in (802) that has Standard German order is analyzed.

- (802) daß ich zu weinen anfang.
 that I to cry started
 ‘that I started to cry.’

A verbal complex is built from *an* and *fing*. This complex is combined with the infinitive *zu weinen*. All three elements are serialized in the same order domain (see page 90 on domain formation in head-cluster structures). In the analysis of (802), the particle verb is serialized continuously while in the analysis of (800) which is given in Figure 28, the particle is serialized at the left periphery of the predicate complex.²⁴⁰ The dominance structure in Figures 27 and 28 are identical. Only the serialization of the element in the predicate complex differs.

A similar analysis can be given for the sentence in (699c)—repeated here with Standard German orthography and slightly simplified as (803).

- (803) weil er ihn um hat wollen stimmen.
 because he him PART has want.to tune
 ‘because he wanted to change his mind.’

The analysis for (803) is given in Figure 29 on page 357.

Having discussed the syntactic aspects of the analysis of particle verbs, I now turn to inflectional and derivational morphology.

6.2.5 Morphology

There are two basic approaches to inflectional and derivational morphology. The first is called the ‘Item-and-Arrangement (IA) approach’, ‘Morpheme-based ap-

²⁴⁰See Bouma and van Noord, 1998 for an analysis of particle placement in Dutch that also uses linearization domains.

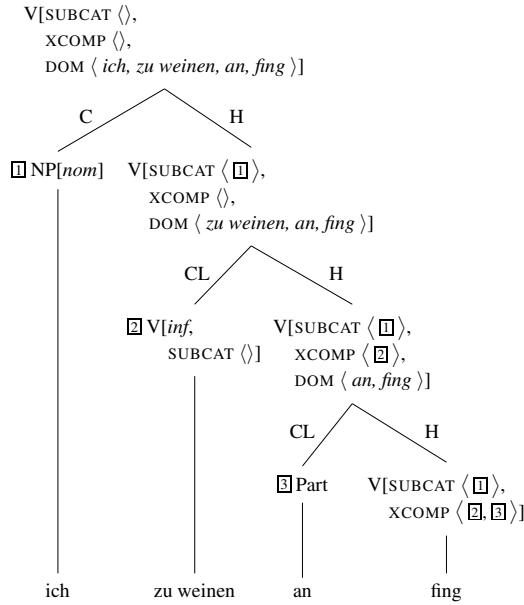


FIGURE 27 Analysis of *daß ich zu weinen anfing*.

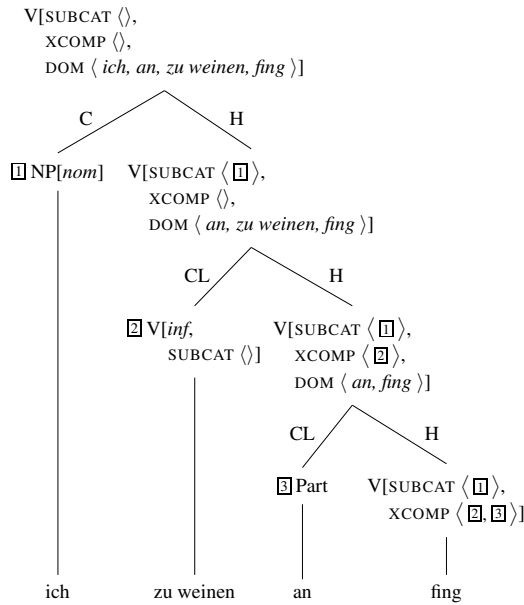
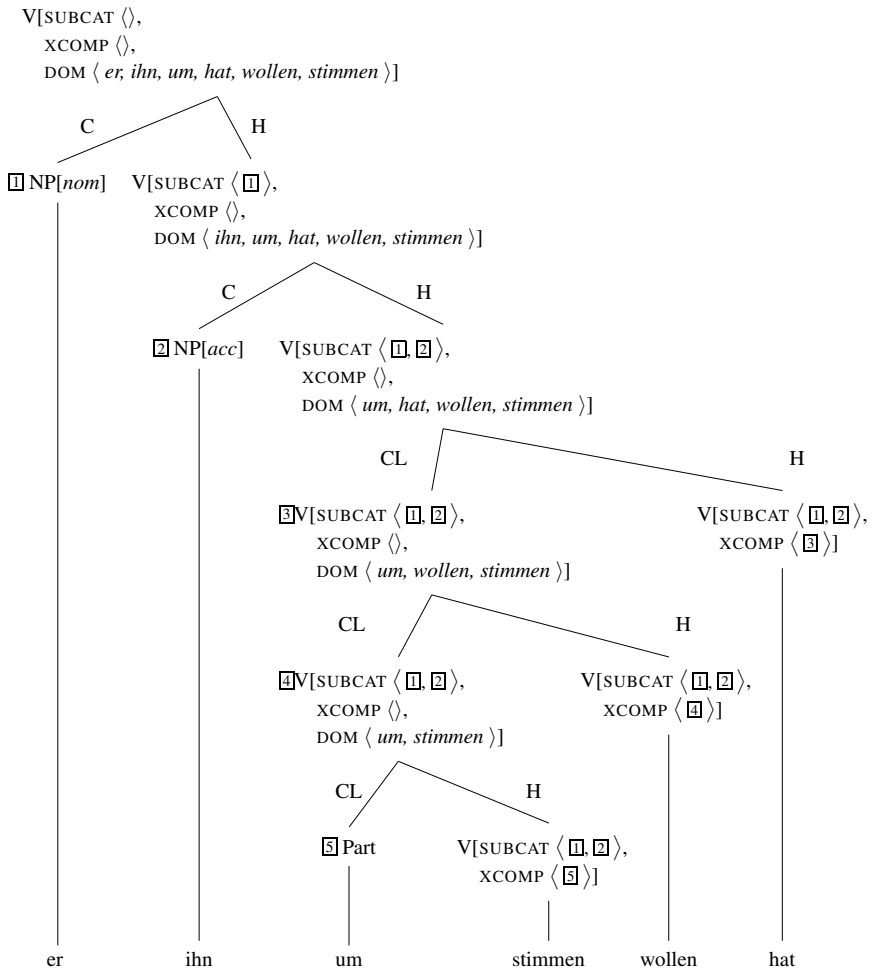


FIGURE 28 Analysis of *daß ich an zu weinen fing*.


 FIGURE 29 Analysis of *weil er ihn um hat wollen stimmen*.

proach', or 'Word Syntax approach'. It is assumed that words consist of morphemes that are form/meaning pairs. Such morphemes are combined in a way that is similar to what is known from syntax. The alternative proposal is called the 'Item-and-Process (IP) approach'. Here it is assumed that stems are related to other stems or to words by realizational rules.²⁴¹ Affixes are not elements of the lexicon. The phonological material that is contributed by an affix in the Item-and-Arrangement model is introduced in the process that derives a form from a given stem. For a comparison of the two approaches see Hockett, 1954 and Anderson, 1988.

As an example consider the inflected form *fragt* ('asks') which consists of the stem *frag-* and the ending *-t*. In a morpheme-based approach, both the stem and the ending are morphemes and it is assumed that both bear meaning. The word *fragt* has the structure *frag-* + *-t*. In a Item-and-Process approach there is no lexical entry for *-t*. Instead, the form *fragt* is licensed by a process that relates the stem to the fully inflected word (*frag* \Rightarrow *fragt*). The information that *-t* is an appropriate ending for the present tense is contained in the definition of the relation that relates the stem to the word.

In the HPSG paradigm both Item-and-Arrangement and Item-and-Process analyses have been developed: Trost (1991, 1993), Krieger and Nerbonne (1993, Chapter 7.4), Krieger (1994), van Eynde (1994, Chapter 4), and Lebeth (1994a) suggest an affix-based approach and Pollard and Sag (1987, Chapter 8.2), Orgun (1996), Riehemann (1998), Ackerman and Webelhuth (1998), Kathol (1999), and Koenig (1999) use lexical rules that relate stems to other stems or words.²⁴² Pollard and Sag use Meta-Level Lexical Rules and the other authors use Description-Level Lexical Rules.

One advantage of the IP view is that one does not have to stipulate zero morphemes for cases of zero inflection or conversion. Another advantage is that the stipulation of subtractive morphemes is not necessary. Hockett (1954, p. 224) discusses cases from Chinese and French where a shorter form is regarded as derived from a longer more basic one (*bon* vs. *bonne* is the French example). A morpheme-based analysis would have to stipulate an abstract entity that has some meaning, but no phonological form. If it is combined with some other element, phonological material of this element is deleted. In the IP view, on the other hand, there is just a mapping from *bonne* to *bon* and the fact that something is deleted is encoded in this mapping. A morpheme-based analysis of German nominalizations can be found for instance in Bierwisch, 1989. Bierwisch uses an abstract morpheme /Ablaut/. If a stem is combined with this morpheme the result is an object with an appropriately modified phonology.

The discussion in the literature in favor of one of the approaches is similar to discussions of the status of empty elements in the area of syntax. In what follows,

²⁴¹ See Becker, 1993 for a proposal that does not assume stems, but relates words to words.

²⁴² For non-HPSG-based approaches see for instance Dowty, 1979, p. 304; Stump, 1991; Aronoff, 1994.

I will show that three alternatives have to be considered in syntax for the analysis of many phenomena: An empty head, a unary projection, and a lexical rule. In many cases it is possible to convert grammars of one format into grammars of the other format. For feature-based grammars the introduction of auxiliary features is sometimes necessary, which makes some of the analyses less elegant. I will apply these insights from syntax to morphology and will show that many of the problems with empty elements that arise in syntax do not arise in morphology. I will further show that the only difference between the IA and the IP approach is that the change of phonological material is encoded in a different place in the grammar. Having done this, I will suggest an approach to inflection and derivation that is based on Description-Level Lexical Rules, i. e. an IP approach, since this seems to be the more direct encoding.

6.2.5.1 Unary Projections, Lexical Rules, and (Empty) Elements

Syntax In Chapter 1.9.2, I assumed a phonological empty element for the introduction of nonlocal dependencies. This was mainly for explanatory reasons. In principle, there are three ways to introduce nonlocal dependencies: an empty element, a unary projection, and a lexical rule. For context free grammars it is known that grammars with epsilon productions can be transformed into grammars without epsilons (Bar-Hillel, Perles, and Shamir, 1961, p. 153, Lemma 4.1). Take, for instance, the grammar in (804). This grammar can be transformed into the grammar in (805) by adding rules in which a symbol that can be rewritten as ε is omitted.

- (804) $\bar{v} \rightarrow v, np$
 $np \rightarrow \varepsilon$
 $\bar{v} \rightarrow \bar{v}, adv$
 $adv \rightarrow \varepsilon$

- (805) $\bar{v} \rightarrow v, np$
 $\bar{v} \rightarrow v$
 $\bar{v} \rightarrow \bar{v}, adv$
 $\bar{v} \rightarrow \bar{v}$

For a grammar as the one in (806) which represents valence in lists and that assumes binary and unary branching structures only, the result of grammar transformation is (807):

- (806) $H[\text{SUBCAT } X] \rightarrow H[\text{SUBCAT } X \oplus \langle Y \rangle], Y$
 $Y \rightarrow \varepsilon$

- (807) $H[\text{SUBCAT } X] \rightarrow H[\text{SUBCAT } X \oplus \langle Y \rangle], Y$
 $H[\text{SUBCAT } X] \rightarrow H[\text{SUBCAT } X \oplus \langle Y \rangle]$

In addition to the binary branching rule that combines a head H with one element (Y), there is another rule that discharges Y without realizing it. In an HPSG, the

LOCAL value of this element is introduced into SLASH. This solution has been argued for in Müller, 1999a, Chapter 9.4.2.²⁴³

The third possibility to introduce nonlocal dependencies is a lexical rule that licenses new lexical items with changed valence properties (Pollard and Sag, 1994, Chapter 9.5; Sag and Fodor, 1994). So for the example grammar in (808), the ε -production can be eliminated and additional lexical items for *geben* ('to give'), *lieben* ('to love'), and *schlafen* ('to sleep') have to be introduced.

- (808) $\bar{v} \rightarrow v\text{-ditrans}, np, np, np$ $v\text{-ditrans} \rightarrow \text{geben}$
 $\bar{v} \rightarrow v\text{-trans}, np, np$ $v\text{-trans} \rightarrow \text{lieben}$
 $\bar{v} \rightarrow v\text{-intrans}, np$ $v\text{-intrans} \rightarrow \text{schlafen}$
 $\bar{v} \rightarrow v\text{-subjless}$
 $np \rightarrow \varepsilon$

The result of such a lexicon transformation is shown in (809).

- (809) $\bar{v} \rightarrow v\text{-ditrans}, np, np, np$ $v\text{-ditrans} \rightarrow \text{geben}$
 $\bar{v} \rightarrow v\text{-trans}, np, np$ $v\text{-trans} \rightarrow \text{lieben} \vee \text{geben}$
 $\bar{v} \rightarrow v\text{-intrans}, np$ $v\text{-intrans} \rightarrow \text{schlafen} \vee \text{lieben} \vee \text{geben}$
 $\bar{v} \rightarrow v\text{-subjless}$ $v\text{-subjless} \rightarrow \text{schlafen} \vee \text{lieben} \vee \text{geben}$

The ' \vee ' stands for a disjunction. So $v\text{-trans}$ can be rewritten as *lieben* or *geben*.

For a grammar with valence information represented in lists, the transformation of the lexicon (809) results in (810).

- (810) $V[\text{SUBCAT } \langle NP, NP, NP \rangle] \rightarrow \text{geben}$
 $V[\text{SUBCAT } \langle NP, NP \rangle] \rightarrow \text{lieben}$
 $V[\text{SUBCAT } \langle NP \rangle] \rightarrow \text{schlafen}$
- (811) $V[\text{SUBCAT } \langle NP, NP, NP \rangle] \rightarrow \text{geben}$
 $V[\text{SUBCAT } \langle NP, NP \rangle] \rightarrow \text{geben}$
 $V[\text{SUBCAT } \langle NP \rangle] \rightarrow \text{geben}$
 $V[\text{SUBCAT } \langle \rangle] \rightarrow \text{geben}$
 $V[\text{SUBCAT } \langle NP, NP \rangle] \rightarrow \text{lieben}$
 $V[\text{SUBCAT } \langle NP \rangle] \rightarrow \text{lieben}$
 $V[\text{SUBCAT } \langle \rangle] \rightarrow \text{lieben}$
 $V[\text{SUBCAT } \langle NP \rangle] \rightarrow \text{schlafen}$
 $V[\text{SUBCAT } \langle \rangle] \rightarrow \text{schlafen}$

The LOCAL values of the elements that are removed from the SUBCAT list are represented in the SLASH list of the respective lexical items. Bouma, Malouf, and Sag (2001) suggest a variant of the lexicon-based approach. Instead of using lexical rules to relate lexical entries with different SUBCAT values, they assume relational

²⁴³ An early formulation of an equivalent rule in Categorical Grammar can be found in Hoeksema, 1991a, p. 693.

constraints that maps dependents of a lexical head either to the SUBCAT list or to SLASH.

The grammar in (804) contains epsilons for non-heads. Kathol (2000, p. 92) argues against head movement approaches for the verb position, claiming that traceless accounts are not possible. However, there is a possible transformation of grammars like (812) that is trivial: The result of eliminating the epsilon in (812) is (813).

(812) $\bar{v} \rightarrow np, \epsilon$

(813) $\bar{v} \rightarrow np$

To demonstrate the transformation for the feature-based grammar, I assume the verb movement analysis of Netter (1992). Netter uses an empty verbal element that subcategorizes for an unspecified list of complements (\square) and the verb in verb-first position that takes the same list of arguments.²⁴⁴

(814) Empty verbal head in the spirit of Netter (1992):

$$\left[\begin{array}{c} \text{CAT} \left[\begin{array}{cc} \text{HEAD} & \text{verb} \\ \text{SUBCAT} & \langle V[\text{LEX+}, \text{SUBCAT } \square, \text{CONT } \square] \oplus \square \rangle \\ \text{CONT} & \square \end{array} \right] \end{array} \right]$$

Figure 30 on the next page shows an example analysis for the sentence (815).

(815) Bringt Peter die Ladung?
 brings Peter the load
 ‘Does Peter bring the load?’

Abbreviated and in rule notation, a grammar with the Head-Complement Schema and such a trace looks like (816).

(816) $H[\text{SUBCAT } X] \rightarrow H[\text{SUBCAT } X \oplus \langle Y \rangle], Y$
 $V[\text{SUBCAT } \langle V[\text{SUBCAT } X] \rangle \oplus X] \rightarrow \epsilon$

The trace in (816) can be eliminated, yielding (817):

(817) $H[\text{SUBCAT } X] \rightarrow H[\text{SUBCAT } X \oplus \langle Y \rangle], Y$
 $V[\text{SUBCAT } \langle V[\text{SUBCAT } X \oplus \langle Y \rangle] \rangle \oplus X] \rightarrow Y$

The grammar in (817) does not combine a trace for a verb with a complement, but rather projects from the complement directly. See Figure 31 on the following page for an example analysis. I implemented a similar approach in the *Verbmobil* grammar (Müller and Kasper, 2000, p. 243). Note that trace elimination becomes more difficult if more than one empty element is involved. In a sentence like (818), we have a fronted adjunct:

²⁴⁴I have adapted Netter’s trace in a way such that the order of elements on the SUBCAT list corresponds to the order that is assumed by Pollard and Sag (1994) and throughout this book.

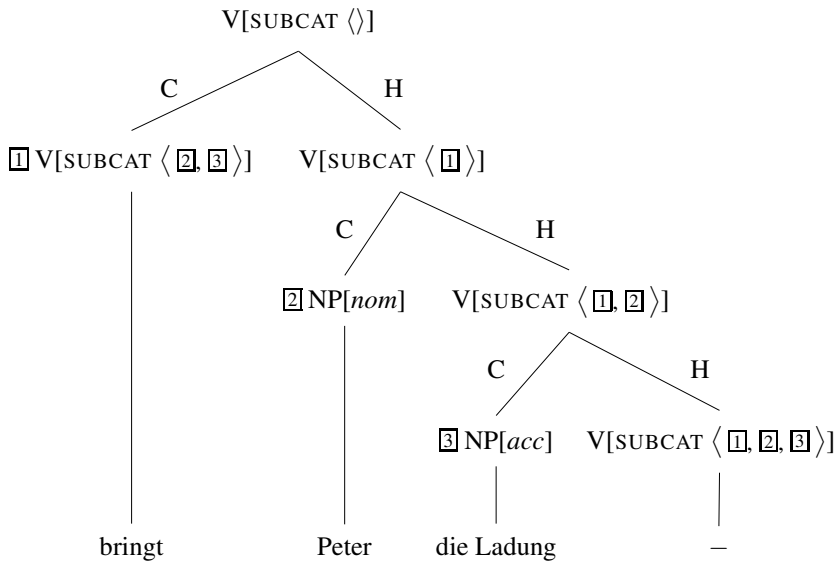


FIGURE 30 Analysis for sentences with the verb in initial position with verbal trace

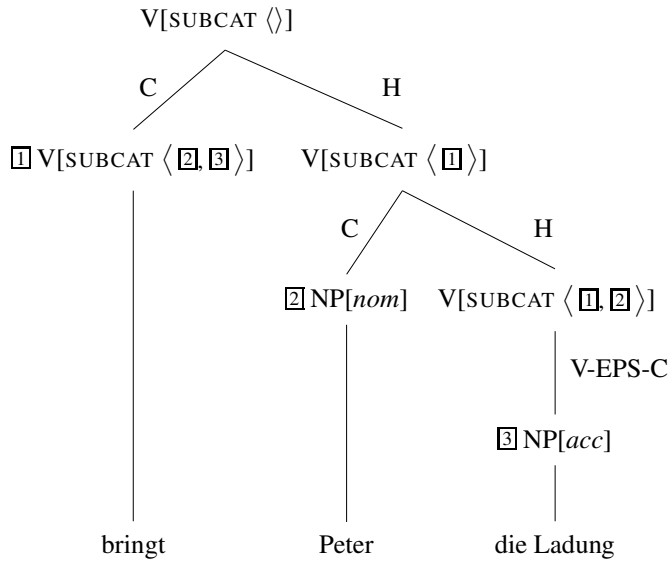


FIGURE 31 Analysis for sentences with the verb in initial position with unary projection instead of a verbal trace.

- (818) $\text{Morgen}_i \text{ bringt}_j \text{ Peter die Ladung } _i _j.$
 tomorrow brings Peter the load
 ‘Peter brings the load tomorrow.’

To account for such sentences, one has to assume a grammar rule that projects the NP *die Ladung* to a verbal element that is modified, i. e. something that has a local object in SLASH that is compatible with the fronted adjunct. The resulting rules are difficult to understand, but the trace elimination is nevertheless possible.

However, the cases with empty heads differ from cases with empty non-heads in that the lexical rule-based transformation cannot be applied, and this was what Kathol had in mind with his statement. In principle, one can imagine a lexical rule-based approach that maps every head the projections of which can be a complement of a verb onto a verb, inheriting the complements of that head. The noun *Bild* (‘picture’) would be mapped as is shown in (819) and (820):

- (819) $N[\text{SUBCAT } \langle \text{DET}, \text{PP} \rangle] \rightarrow \text{Bild}$

- (820) $V[\text{SUBCAT } \langle V[\text{SUBCAT } X \oplus \langle \text{NP} \rangle] \oplus X \oplus \langle \text{DET}, \text{PP} \rangle] \rightarrow \text{Bild}$

Of course, this is totally absurd. The determiner and the PP would be complements of a verbal head and therefore linearization patterns would be predicted that differ from NP internal serialization patterns. Furthermore, this approach would fail with nominalized verbs since if they are mapped back to verbs, case assignment principles would assign case as it is done in verbal environments, i. e. accusative instead of genitive. Nevertheless, there is a way to transform a grammar with empty heads into one without empty heads, as I have shown above.

Another example for the elimination of phonologically empty heads is the relative clause analysis. Pollard and Sag (1994, Chapter 5) suggest an empty relativizer for the analysis of relative clauses. This empty relativizer is the head of the relative clause.²⁴⁵

- (821) $\text{RC} \rightarrow \text{XP}, \text{S/XP}, \text{Relativizer}$

It can be replaced by a binary unheaded projection that has the complements of the relativizer as daughters and projects a relative clause.

- (822) $\text{RC} \rightarrow \text{XP}, \text{S/XP}$

²⁴⁵In fact Pollard and Sag suggest an analysis that is more in line with the \bar{X} theory:

- (i) a. $\text{RelativizerP} \rightarrow \text{XP}, \text{Relativizer}'$
- b. $\text{Relativizer}' \rightarrow \text{Relativizer}, \text{S/XP}$

If one applies the technique described above to these rules one gets:

- (ii) a. $\text{RelativizerP} \rightarrow \text{XP}, \text{Relativizer}'$
- b. $\text{Relativizer}' \rightarrow \text{S/XP}$

See Müller, 1999a, Chapter 10.3.2; Müller, 1999b for such a proposal. The alternatives are discussed in more detail in Müller, 1999a, Chapter 10.3. Sag (1997) also suggests an analysis for relative clauses that does not use empty elements, but his analysis cannot be seen as a result of a grammar transformation of the kind discussed above. While in my proposal the effect of the empty head is integrated into the grammar rule without changing the specifications of the other daughters, the status of the daughters is changed in Sag's proposal: He turns the verb into a head that can modify an \bar{N} . Since adjuncts of \bar{N} s are required to have a nominal semantics in Pollard and Sag's grammar (1994), Sag (1997) has assumed a nominal semantics for a verb that is used as a head in a relative clause, which he motivates using Korean data that shows that verbs in relative clauses have a special inflection. For languages like English and German, which do not have special inflection of verbs in relative clause constructions, determining the nominal semantics of relative clauses in the lexical entries of verbs is similar to the conversion of the lexical head *Bild* from a noun in (819) to a verb in (820). Instead of changing the lexical specification of verbs, Sag changes the rest of the grammar: Verbs keep their verbal semantics, but the way the meaning of head-adjunct structures is computed is changed. He introduces very specialized constructions for the combination of an \bar{N} and a relative clause.

Wunderlich (1987b) argues against the stipulation of empty elements in syntax in general and suggests empty projections in nominal structures like (823).

- (823) a. Er hat nur die interessanten Bücher gelesen.
 he has only the interesting books read
 'He only read the interesting books.'
- b. Er hat nur die interessanten gelesen.
 he has only the interesting read
 'He only read the interesting ones.'
- c. Er hat nur interessante Bücher gelesen.
 he has only interesting books read
 'He only read interesting books.'
- d. Er hat nur interessante gelesen.
 he has only interesting read
 'He only read interesting ones.'

Instead of assuming an empty nominal head (Olsen, 1987; Netter, 1998a, Chapter 4.6) or an empty determiner one can use unary projections to project an NP (or DP) from an adjective, a noun, or a determiner. Note that grammars that use both empty determiners and empty nouns have to provide an explanation for why NPs are excluded that consist solely of an empty head and an empty noun (Netter, 1998a).

Before turning to morphology, I want to discuss some interaction of empty elements with other parts of the grammar. Although grammar transformations as the

ones discussed above can be done automatically for context free grammars and although this is also possible for feature-based grammars under certain conditions, this is not what the linguist is interested in. In order to make grammars of the various forms identical in coverage, features and constraints are necessary in some of the grammar formats that are not necessary in the other. As an example, consider the trace that was used in Chapter 1.9.2 (see page 33). This trace corresponds to the second rule in (806). The problem with it is that it is totally underspecified. Without any further restrictions, this empty element could also be used as a head in headed structures. This would permit an analysis of (824b).

- (824) a. [Der kluge Mann]_i hat _i geschlafen.
 the smart man has slept
 ‘The smart man slept.’
 b. * [Mann]_i hat der kluge _i geschlafen.
 man has the smart slept

Another problem with the trace is that the coordination of traces has to be blocked: In coordinated structures, the CAT and the NONLOC values of conjuncts are shared (Pollard and Sag, 1994, p. 202). The sharing of the NONLOC values explains cases of across the board extraction where one filler corresponds to several gaps in the conjuncts as in (825).

- (825) Bagels_i [[I like _i] and [Alison hates _i]].

In (825) two sentences are coordinated that each contain a gap. The descriptions of the gap constituent are identified in the coordination and therefore the filler fills both gaps simultaneously. The problem with traces now is that without further constraints, sentences like the one in (826) would be permitted (Sag, 2000; Bouma, Malouf, and Sag, 2001).

- (826) * Bagels_i I like [_i and _i].

In (826) *Bagels* also fills the two gaps in the conjuncts. The coordinated structure is the object of *like*. As Bouma, Malouf, and Sag note, this problem disappears if one does not assume traces for modeling extraction.

Finally traces are problematic for languages with a more liberate constituent order since it is not clear where they should be serialized (Nerbonne, 1994, p. 147–148). Meurers (2000, p. 178) argues that traces are unproblematic as far as serialization is concerned since only the phonology of signs is serialized. While this is true for the approach to constituent order that was suggested in Pollard and Sag (1987, p. 178), it is not true for a domain-based approach as is assumed in this book. Traces are inserted into the domain of their head as any other dependents are. The serialization problem also exist in other approaches to constituent order: For instance, Gunji (1986), Hinrichs and Nakazawa (1989b), Pollard (1996), Engelkamp, Erbach, and Uszkoreit (1992), and Kiss (2001) suggest using a set rather than a list to represent valence information. The valence principle

is adapted appropriately and it is possible to combine two (adjacent) elements in head-complement structures if the argument is an arbitrary element of the SUBCAT set of the head. When a sentence like (827) is analyzed, there are three possible positions for the trace:

- (827) Der Frau_i gab _i der Mann _i das Buch _i.
 the woman-DAT gave the man-NOM the book-ACC
 'The man gave the woman the book.'

For a general discussion of constituent order see Müller, To Appear a.

All these problems can be solved technically. Traces as heads can be blocked by a feature or by a type specification in the schemata. In the same way, traces in coordinated structures can be ruled out. Kathol (1995, Chapter 5.4.1) deals with the serialization problem by using a special relational constraint for domain formation that is sensitive to traces and does not insert them into higher order domains.

If one did not have traces in the first place, one would not have to invent such devices to block their occurrence where they are not wanted. Approaches that assume unary projections or lexical rules do not have these problems and they do not have to introduce special blocking features or special relational constraints. On the other hand, one needs several grammar rules for the introduction of non-local dependencies (one for complements, one for adjuncts, one for every valence feature from which extraction is possible: SUBCAT, XCOMP in my grammar) or a system of lexical rules that can also account for adjunct extraction. Such lexical rules were suggested by van Noord and Bouma (1994). They produce an infinite lexicon since adjuncts are introduced into the SUBCAT list from where they can be extracted (see also Chapter 4.3 for a discussion of this proposal). Since I do not like the idea of an infinite lexicon, I have used unary projections in my grammar. Another difference between the projection-based approach and the lexicon-based approach to extraction is that the lexical rule-based approach changes the order in which elements on the valence list get saturated. If the accusative object of a ditransitive verb is extracted, this nonlocal dependency is introduced before syntactic combination starts, i. e., the accusative object is saturated before the dative object, whereas in the schema-based approach the dative object is saturated first and then the unary projection applies and extracts the accusative object. In that way the unary projection resembles the effects of a trace more closely.

Having discussed empty elements in syntax, I now turn to morphology.

6.2.5.2 Morphology

For morphology, one basically has the same options: One can treat affixes as heads or one can use lexical rules (in the morphology literature they are often called realizational rules). In the lexicon, unary projections are equivalent to Description Level Lexical Rules. The first approach combines the two linguistic objects *frag-* ('ask') and *-t* (3rd.sg-morpheme) to form *fragt* ('asks') and the second one derives *fragt* directly from *frag-* by changing the phonological information by the rule. The following two grammars may serve as an example.

- (828) word \rightarrow stem, suffix
 stem \rightarrow frag
 suffix₁ \rightarrow t
 suffix₂ \rightarrow ϵ

In (828) a rule is used that combines a stem with a suffix. For inflection, it is usually assumed that the stem is the head and for derivation the affix is assumed to be the head. Van Eynde (1994, Chapter 4) analyzes inflection with the Head-Marker Schema and derivation with the Head-Complement Schema. Since the phonology values of the suffixes in the grammar in (828) are known and since the number of these elements is finite, the suffixes that can be derived by rules in (828) can be merged with the first rule in (828). The result is (829).

- (829) word₁ \rightarrow stem
 word₂ \rightarrow stem
 stem \rightarrow frag

Instead of having two suffixes, one has two rules. In feature-based grammars that employ type hierarchies, the fact that the rules in (829) are rather similar when affixes of the same class have been used to derive these rules can be captured by assigning a common supertype to them.

The differences between the two approaches are similar to those with the trace-based/traceless accounts: Approaches that assume that affixes are independent linguistic objects have to provide mechanisms that block these elements from occurring in syntax. This can easily be done by a feature or by appropriate typing of the objects. But this is not a real drawback in comparison with the rule-based approach since the latter also has to take care of the uninflected stems. They cannot be used in syntax.²⁴⁶ So the mechanism that blocks *frag-* and *-t* in (828) from appearing in syntax also has to be available for *frag-* in (829).

Ackerman and Webelhuth (1998, p. 140) argue that in cases such as the perfect participle in German (*ge+frag+t*), it is not clear which part of the *ge-* *-t*-circumfix bears the meaning of participle of the perfect and that therefore a lexical rule-based account has to be preferred. This argument is not really conclusive since the circumfix is not necessarily represented by two separate linguistic objects. But even if one did assume a prefix *ge-* and a suffix *-t* and binary branching structures, the situation is not very different from idiomatic constructions in syntax. An idiomatic phrase has its idiomatic meaning only when all parts of the idiom are present in a certain syntactic environment. An example for a binary branching analysis of $[[ge\ lach]\ t]$ would be one where the *-t* is subcategorized for *ge-*. The *ge-* takes over the semantics of the stem it embeds and the *-t* contributes the

²⁴⁶This statement is probably too general. An easy way to account for derivations that include phrasal material is to admit uninflected stems in syntax. The only thing that has to be ensured in such a system is that uninflected material does not show up in non-head positions and that complete utterances are inflected.

meaning of the perfect participle.²⁴⁷ As Orgun (1996, p. 52) observed, the fact that certain languages signal certain information by truncating parts of words can be captured easily in the lexical rule-based analysis. But since the phonology value that results from the combination of a stem and an affix is related to the phonologies of stem and affix by a relational constraint anyway, this relational constraint can be used to truncate parts of words. Such a relational constraint is encoded in the lexical rules in a lexical rule-based approach. In an affix-based approach, one can either encode it in a zero or rather ‘negative’ affix or attach it to the rule that combines stem and affix and make it truncate parts of the stem phonology only if a certain class of ‘negative’ affixes is present.²⁴⁸

The fact that one has to use zero morphemes for zero inflection and conversion is considered a drawback of the IA analysis, but having a zero morpheme with a certain meaning is not worse than having an empty relativizer that contributes to the meaning of an utterance. Similar abstract empty elements are used in the GB literature en masse. Problems similar to the problems one has in syntax, i. e. coordination of invisible affixes and the serialization of invisible affixes, do not arise in morphology. It is always clear whether a given affix is a prefix or a suffix.

In what follows, I suggest a lexical rule-based approach. This is mainly for uniformity: Since I do not use empty elements in syntax, I try to do without them in morphology too. In Chapter 3, I argued for analyzing passive with a lexical rule. In order to capture generalizations, *-bar*-derivation should also be analyzed with a lexical rule since this derivation is passive-like in the sense that the changes to valence features resemble the personal passive.²⁴⁹

6.2.5.3 Inflection

The lexical rule in (830) on the next page is used to derive inflected lexical items from entries that are listed in the lexicon or that have been derived by other lexical rules that map uninflected lexical items to other uninflected lexical items. So it can be used to derive *lachst* (2nd person) from various forms of *lach-* (‘laugh’). One entry for *lach-* is the one that is listed. Another one is derived by the lexical rules for resultatives (see (576) on page 241) and can be used in sentences such as *er lacht sich heiser* (‘he laughs himself hoarse’), and the third one is derived by the rule for productive particle verb combinations (see (782) on page 344), and can be used in sentences like *er lacht los* (‘he starts to laugh’).

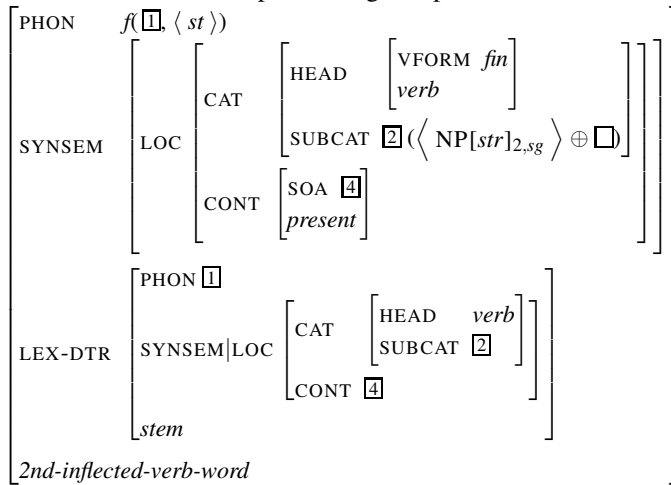
The lexical rule (830) produces a finite form from the stem that may be basic or derived. The function *f* combines the phonological representation of the rule

²⁴⁷See for instance Bierwisch, 1989, p. 30 who suggests an analysis for *Spekulation* (‘speculation’) where the stem *spekul-* combines with the suffix *-at* and then with the suffix *-ion*. *spekul-at* is an object that cannot be inflected and is only compatible with the further affix *-ion*. On page 33, Bierwisch comments on *Ge-sing-e* (‘singing’) which is similar to *gefragt* with regard to branching.

²⁴⁸For a morpheme-based analysis of non-concatenative morphology using Koskeniemi’s two-level morphology (1984) see Trost, 1991. How two-level morphology can be encoded in feature structures is described in Krieger, Nerbonne, and Pirker, 1993.

²⁴⁹The analysis of the morphology of particle verbs that is explained in the following will also appear as Müller, To Appear b.

(830) Lexical rule for the 2nd person singular, present:



input ($\boxed{1}$) with the ending *-st*. The function may add, delete, or change phonological material if necessary. For instance, the combination of *red-* and *-st* is *redest* ('talk'). The VFORM value is instantiated appropriately and the first element on the SUBCAT list with structural case is restricted to second person singular.²⁵⁰ The meaning of the input ($\boxed{4}$) is embedded under the *present* relation.²⁵¹ The agreement information is directly represented at the subject. The rule in (830) is a subtype of a general lexical rule for the formation of finite verbs. For other forms of the inflectional paradigm there will be other subtypes that add other phonological information to the stem and that enforce different agreement features on the subject. For subjectless verbs and verbs with clausal subjects there is a version of the rule above that adds a third person singular ending to the phonology value of the stem without imposing agreement constraints on a dependent. An alternative to having multiple subtypes is a complex (distributed) disjunction or a relational constraint that contains the information about the paradigm and the appropriate

²⁵⁰The lexical rule in (830) is a slight simplification since the first element with structural case is not necessarily the first element on the SUBCAT list. In verbal complexes that arise in remote passive constructions the subject can be at the second position of the SUBCAT list:

- (i) a. Der Erfolg wurde uns nicht auszukosten erlaubt.
the success-NOM was us-DAT not to.enjoy permitted
'We were not permitted to enjoy our success.' (Haider, 1986b, p. 110)
- b. Die Erfolge wurden uns nicht auszukosten erlaubt.
the successes-NOM were us-DAT not to.enjoy permitted

To capture these examples, a relational constraint has to be used that finds the first element with structural case in the SUBCAT list $\boxed{2}$. This element is restricted to be second person singular. See the discussion on page 153.

²⁵¹This representation of tense is a simplification. It can be replaced by a more appropriate analysis. See Sag and Wasow, 1999 for a representation using Minimal Recursion Semantics (MRS).

agreement constraints.

If the lexical rule in (830) is applied to the listed entry for the simplex verb *lach-* in (784), one gets (831).

(831) *lachst* ('laugh', 2nd person singular):

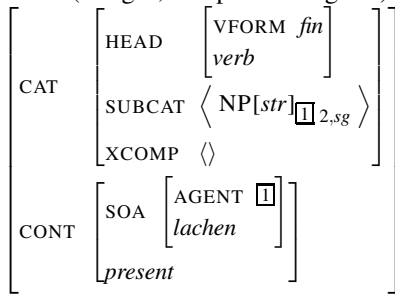


Figure 32 shows what happens if the inflection lexical rule is applied to the output of the particle verb lexical rule (p. 344). This figure is similar to Figure 24 on page 347, which was used to explain the semantic composition of particle and verb, but is more detailed since it includes the effects of the inflection lexical rule. In the output of the particle verb lexical rule, the CONT value is structure shared

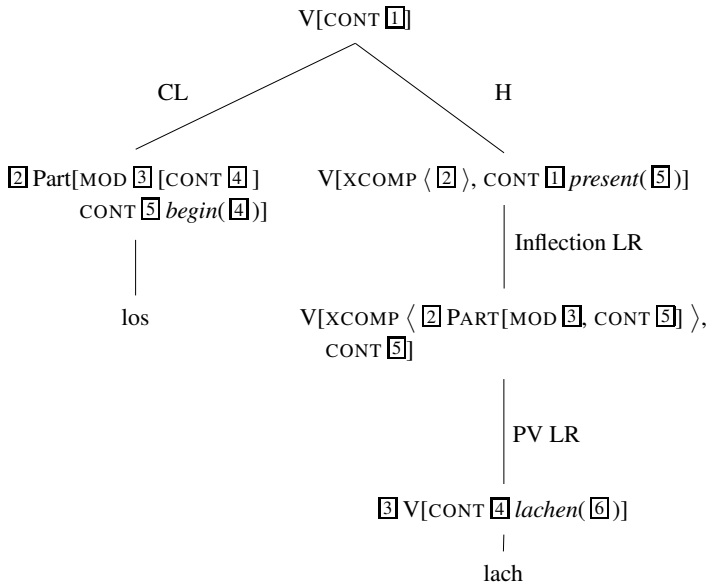


FIGURE 32 Inflection of *lach-* and combination with *los*

with the CONT value of the particle ([5]). This CONT value is embedded under the *present* relation in the output of the inflection lexical rule. When a particle is

combined with the inflected form of *lach-*, the actual semantic contribution gets instantiated. In the case of *los* the semantic contribution is *begin*($\boxed{4}$) where $\boxed{4}$ is the semantic contribution of the base verb.

Turning to morphological aspects of inflectional rules, the participle inflection is dependent on the stress pattern of the verb: If the first syllable is stressed the participle is formed with *ge-* (832a), if it is not stressed the *ge-* is omitted (832b).

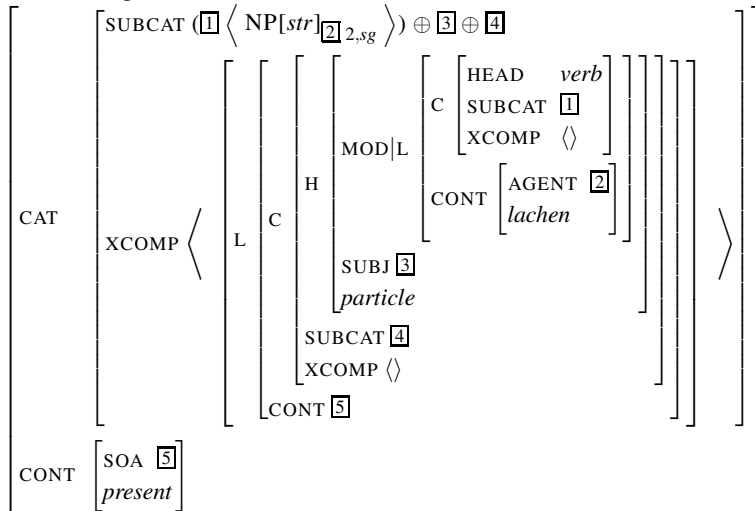
- (832) a. gerédet ('talked'), geárbeitet ('worked')
 b. diskutíert ('discussed'), krakéelt ('made a racket')

The distribution of *ge-* is the same for simplex and particle verbs. Therefore it is sufficient to assume that the lexical rule that licenses the participle form is sensitive to the phonological form of the base verb. The phonological contribution of the particle that will be combined with the verb is totally irrelevant for the distribution of *ge-*. Since the form of the particle does not matter as far as the phonology of the participle inflection is concerned, it is unproblematic that the particle and the base verb are discontinuous in verb-initial sentences.

Geilfuss-Wolfgang (1998) develops an OT analysis for the distribution of *ge-*, including the distribution in particle verbs. He tries to capture the data on a purely phonological basis. In order to achieve this, he has to stipulate four constraints, one specific to *ge-* and one specific to particle verbs. Such stipulations are not necessary in the approach suggested in this book: *ge-* and *-t* are attached to the stem by an inflectional lexical rule and the particle is added in a later step as part of the predicate complex.

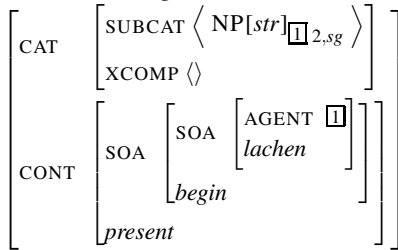
Before I turn to derivational morphology, I provide the full analysis of *los-lachst*: The result of applying the inflection rule to the derived entry for the particle verb combinations with *lach-* in (785) is shown in (833).

- (833) *lachst* ('laugh', Present + Selection for a Particle):



Although the semantics of the particle verb combination (833) is still underspecified since the particle is not combined with the verb yet, it can be referred to. The content of the particle that will be filled in later is embedded under the tense relation. When the particle *los* is combined with the lexical sign in (833), we get the structure in (834).

(834) *los lachst* ('laugh' + Particle *los* combination):



The combination of particle and verb works as it was described in Section 6.2.2. The only things that have been added are the agreement information and the semantic information about tense.

6.2.5.4 Derivational Morphology

In the following subsections, I will show how *Ge-* *-e*-nominalizations and *-bar*-derivations can be analyzed without getting the bracketing paradoxes that were discussed in Section 6.1.10.

Nominalizations As is clear from looking at the examples discussed in the data section, there are various ways in which the arguments of a verb can be realized after nominalization has been applied. The subject or object of the verb can be realized as a *von*-PP (835a), as a postnominal genitive NP (835b), or it may be left implicit (835c).

- (835) a. das Angebrülle von Norbert
 the PART (at).shouting from Norbert
 'the shouting at Norbert'
- b. das Rumgeheule der FDP
 the PART (around).shouting of.the FDP
 'the FDP's whining'
- c. das Herumgerenne
 the PART (around).running
 'the running around'

Rather than giving a detailed account of the various ways in which arguments can be realized, I will consider the case where all arguments are suppressed. The main purpose of this subsection is not to provide all the details of argument realizations in nominal environments, but rather to show how *Ge-* *-e*-nominalizations can be accounted for without any bracketing paradox.

The lexical rule in (836) can be used to derive nominalizations like the one that was given in (835c).

(836) Lexical rule for *Ge-* *-e*-nominalizations:

PHON	$f(\langle ge \rangle, \boxed{1}, \langle e \rangle)$				
SYNSEM	LOC	CAT	$\begin{bmatrix} \text{HEAD} & \textit{noun} \\ \text{SUBCAT} & \langle \textit{DET} \rangle \end{bmatrix}$		
		IND	$\boxed{2}$	$\begin{bmatrix} \text{PER} & 3 \\ \text{NUM} & \textit{sg} \\ \text{GEN} & \textit{neu} \end{bmatrix}$	
		CONT			
		RESTR	$\left\{ \begin{bmatrix} \text{INST} & \boxed{2} \\ \text{SOA} & \boxed{3} \\ & \textit{repeated-event} \end{bmatrix} \right\}$		
LEX-DTR	PHON	$\boxed{1}$			
	SYNSEM|LOC	$\begin{bmatrix} \text{CAT} | \text{HEAD} & \textit{verb} \\ \text{CONT} & \boxed{3} \end{bmatrix}$			
	<i>stem</i>				
<i>ge-e-derived-noun-stem</i>					

Again, f is a function that combines the PHON value of the input with *Ge-* *-e*. The e is optional if it follows the unstressed syllables *-er*, *-el*, *-en* as, for instance, in *Rumgeballer*. The result of the rule application is a noun stem. This stem has to be inflected before it can be used in syntax.²⁵² Zero-inflection gives nominative, dative, and accusative; appending an *s* results in genitive.

The rule applies to all verbs. The valence properties of the nominalized verb are ignored since this lexical rule licenses only the bare noun with a determiner without any complements that could be inherited from the verb. Following Pollard and Sag (1994, Chapter 1) and Demske (2001), I assume that the noun selects a determiner, i. e., I assume an NP analysis rather than a DP analysis, but the rule in (836) could be easily changed. For a DP analysis in HPSG see Abb, 1994. A special variant of a DP analysis can be found in Netter, 1994 and Netter, 1998b.

Since nouns derived by *Ge-* *-e*-nominalization are neuter, the lexical rule licenses a noun that has a referential index with the GEN value *neu*. *Ge-* *-e*-nominalizations do not have plural forms (Bierwisch, 1989, p. 34). Since the number is also specified in the output of the lexical rule, plural inflectional affixes cannot be combined with stems licensed by (836). The referential index ($\boxed{2}$) is identical with the value of the INST feature of the *repeated-event* relation.

As an example of the rule application, consider first *Gerenne* as it can be derived from the verb *renn-* without a particle. The LOCAL value of the entry for

²⁵²See also Koenig (1999, p. 118) for a similar proposal for the interaction of inflection and derivation.

renn-, which is given in (837), is analogous to the one for *lach*- given above.

(837) *renn*- ('run'):

CAT	HEAD	<i>verb</i>
	SUBCAT	$\langle \text{NP}[\text{str}] \boxed{1} \rangle$
	XCOMP	$\langle \rangle$
CONT	AGENT	$\boxed{1}$
	<i>rennen</i>	

If this lexical entry is fed into the lexical rule in (836), the result is (838).

(838) *Gerenne*- ('repeated running'):

CAT	[HEAD <i>noun</i>	
	SUBCAT \langle DET \rangle]	
CONT	IND	[PER 3
		NUM <i>sg</i>
		GEN <i>neu</i>]
	RESTR	{ [INST $\boxed{2}$
		SOA [AGENT $\boxed{}$]
<i>repeated-event</i>] }		

The agent of *rennen* is not linked to any element in the valence representation and hence the value of the AGENT feature in (838) is visualized as an empty box.

Next I want to discuss the analysis of *Herumgerenne*. Like *los*, the particle *herum* attaches to intransitive verbs only, as (839) shows:

- (839) a. Karl rennt / hüpf_t herum.
Karl runs jumps around
- b. Karl liest (in dem Buch) herum.
Karl reads in the book around
- c. * Karl liest das Buch herum.
Karl reads the book around

There are several meanings of *herum*. The one that is of interest here adds a component to the meaning of the base verb that the action is aimless. The LOCAL value of the lexical entry for *herum* is given in (840) on the facing page. It is parallel to the one for *los* which was discussed on page 345. The analysis of *Herumgerenne* is shown in Figure 33 on the next page. To derive *Herumgerenne*, we first have to apply the lexical rule (782) for productive particle verb combinations to the entry for *renn*- that is listed in the lexicon. The result is a lexical item that selects a particle via XCOMP ($\boxed{2}$). The meaning contribution of this particle ($\boxed{5}$) is identified with the meaning of the lexical item that is licensed by the particle verb

(840) *herum* ('around'):

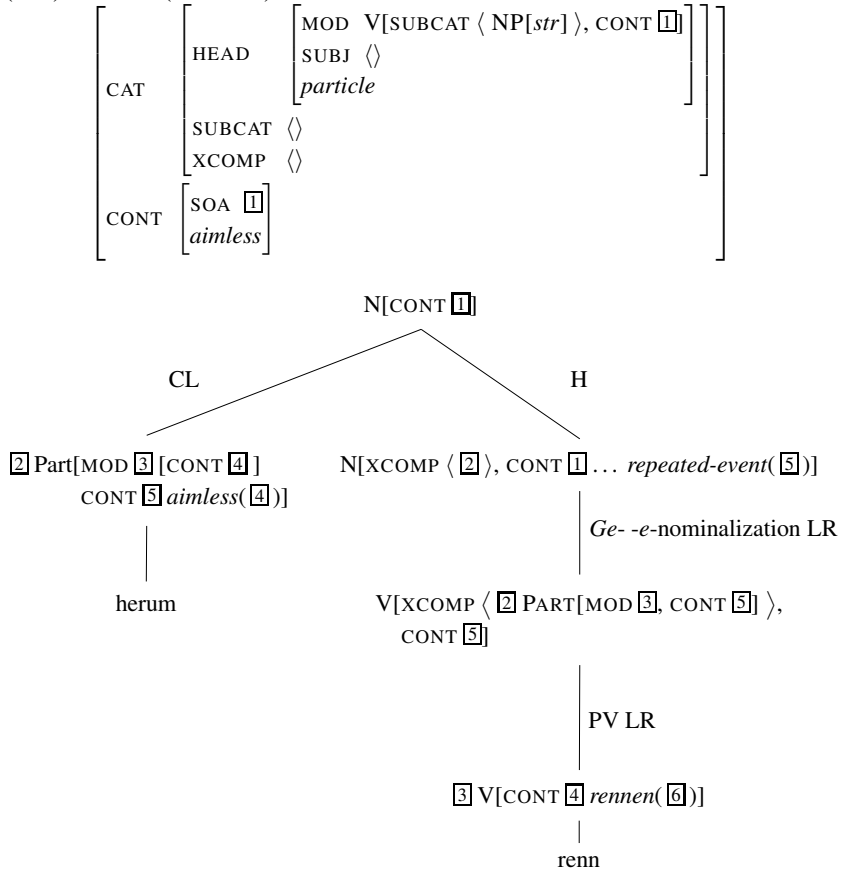
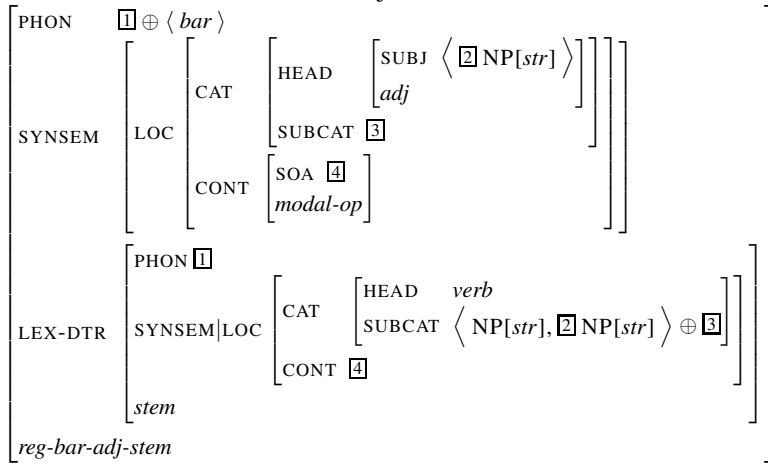


FIGURE 33 Analysis of *Herumgerenne*

lexical rule. The nominalization lexical rule applies to this item and encapsulates the semantic contribution under the *repeated-event* relation. In the next step, the noun is combined with the particle. Since the noun is the head in a head-cluster structure its meaning contribution ($\boxed{1}$) is identical to the meaning contribution of the mother. The meaning contribution of the particle is now known. Via its MOD value, the particle can access the semantic contribution of the base verb ($\boxed{4}$) and can embed this under the *aimless* relation. The result is *aimless(rennen($\boxed{6}$))*. Since this semantic contribution is embedded under *repeated-event* by the nominalization rule, we get *repeated-event(aimless(rennen($\boxed{6}$)))* and hence the correct semantic representation.

Having sketched the analysis, I now provide the full version: (841) shows a feature description of the lexical item that is licensed by the particle verb lexical

(844) Lexical rule for the derivation of adjectives with *-bar*:

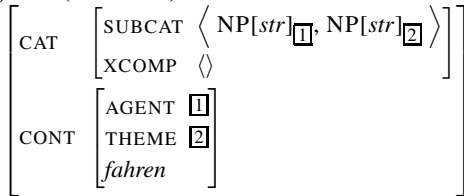


logical material license the attributive forms that are inflected and can be used prenominally. Syntactic and semantic aspects of these rules were discussed on page 160.

To start with a simple example, I show what happens with a transitive verb without particle. The feature description in (846) corresponds to the transitive use of *fahren* as in (845).

(845) Sie fährt ein Auto mit geringem Spritverbrauch.
 she drives a car with low gas.consumption

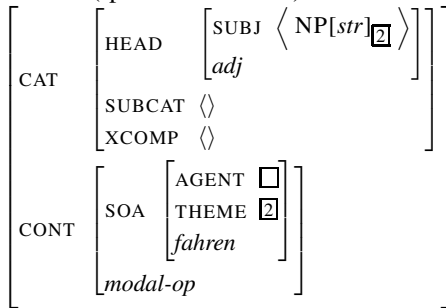
(846) *fahr-* ('to drive'):



The rule in (844) promotes the object of *fahren* to the subject of the adjective. The subject of *fahren* is suppressed.

The result of the rule application is shown in (847) on the next page. The agent of *fahren* is not linked to an argument of the adjective. This is represented by the empty box.

- (847) *fahrbar*- ('possible to drive'):



This entry can be used to analyze phrases like (848).

- (848) der fahrbare Untersatz²⁵³
the possible.to.drive underneath.put
'wheels' / 'the car'

Having discussed a simple example, I now turn to *-bar*-derivation with particle verbs. As an example consider (766a)— repeated simplified as (849) for convenience.

- (849) Die Geschäfte müssen anfahrbar bleiben.²⁵⁴
 the shops must PART (to).drivable remain
 ‘The shops must remain accessible by car.’

I split the discussion into two parts, first discussing valence properties and then turning to the semantics.

Figure 34 shows the application of the particle verb lexical rule. The result of

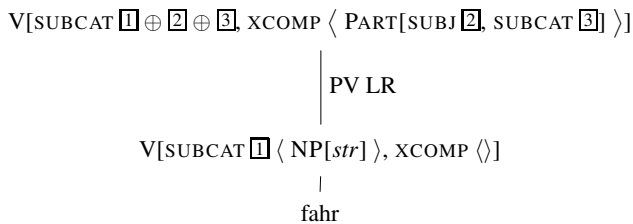


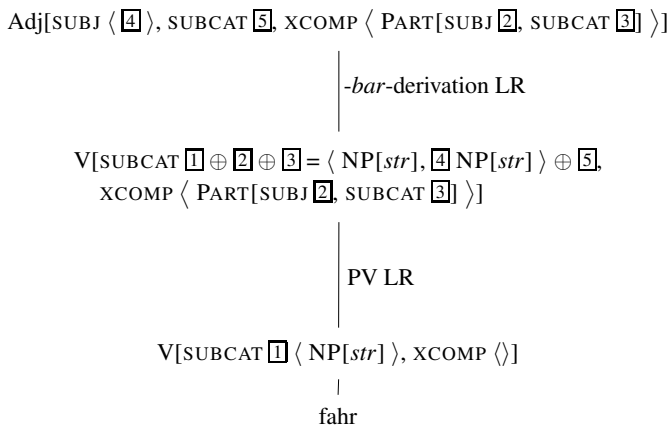
FIGURE 34 Application of the particle verb lexical rule to *fahr-*

the rule application is a lexical item that has an underspecified SUBCAT value. The actual value is constrained by the particle once the particle is combined with its head.

The *-bar*-derivation lexical rule requires its input to have an object NP with structural case. Since the output of the particle verb lexical rule is compatible with

²⁵³taz, 03.20.1999, p. 30.

this requirement, the *-bar*-derivation lexical rule can apply to it. This is shown in Figure 35. The SUBCAT value of the input to the *-bar*-derivation is constrained

FIGURE 35 Application of the *-bar*-derivation lexical rule to *fahr-* with particle in XCOMP

to be a list that starts with two NP[*str*] ($\langle \text{NP[*str*], } \boxed{4} \text{ NP[*str*] } \oplus \boxed{5} \rangle$). Since the SUBCAT value of the input to the *-bar*-derivation in Figure 35 is the concatenation of the SUBJ and SUBCAT value of the particle in XCOMP, only particles that have an NP[*str*] in their SUBJ list or in their SUBCAT list may combine with the result of the *-bar*-derivation.

Figure 36 on the facing page shows the combination of *an*₅ and *fahrbar*. The particle has an NP[*str*] in its SUBJ list ([2]). Its SUBCAT value ([3]) is the empty list. Therefore the concatenation of [2] and [3] is a list that contains exactly one NP[*str*]. This element is identified with the element [4] which is raised to subject by the *-bar*-derivation lexical rule. Therefore the adjective *anfahrbar* has as its subject the element that was introduced by the particle and the SUBCAT list of *anfahrbar* is empty. Since there is no other element in the concatenation of [2] and [3], [5] is the empty list.

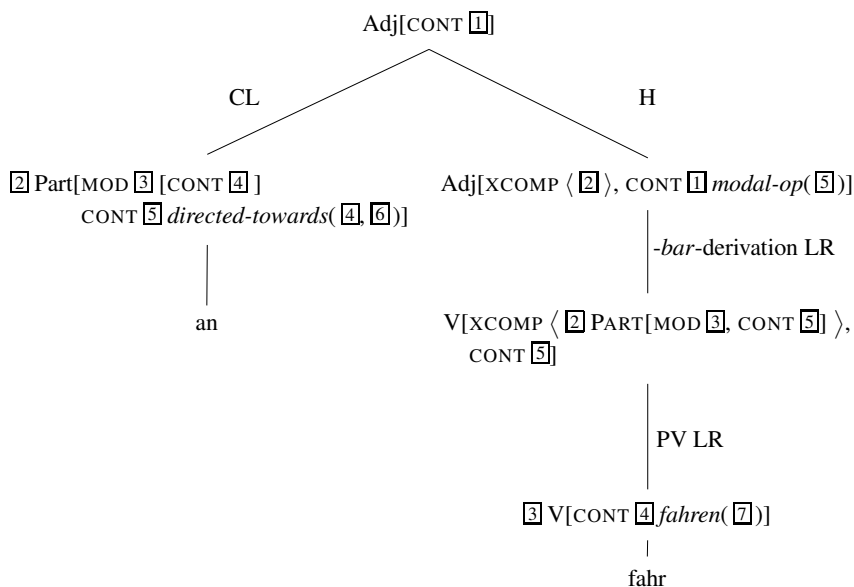
The interesting thing is that this analysis not only derives (850a), it also blocks the ungrammatical example in (850b).

- (850) a. die anfahrbaren Geschäfte
the PART.drivable shops
'the shops that can be accessed by vehicle'
- b. *die losfahrbaren Geschäfte
the PART.drivable shops
Corresponding to: '*the shops that can be started to drive'

c. ?die losfahrbaren Autos
the off.drivable cars
'the cars that can be driven off'

Note that (850c) has a marginal resultative reading for *losfahrbär*, with the resultative predicate *los* ('off'). A context would be ten cars that are stuck in the snow and some of them can be freed by driving. This form of *losfahrbär* is also derived with the lexical rule (844), but it is derived from an item for *fahr-* that is the result of the resultative predicate lexical rule (see Chapter 5.2), and not from a lexical item that is licensed by the particle verb lexical rule. The lexical item with the resultative meaning cannot be used in an analysis of (850b) since the selectional restrictions of the resultative predicate *los* block the combination with *Geschäfte* ('shops').

Now consider the representation of semantic information in the analysis of *anfahrbar*, which is shown in Figure 37 on the next page. The particle verb lexical rule introduces a particle into the XCOMP list that selects the input representation via MOD (3). In the output of the lexical rule, the CONT value of the output

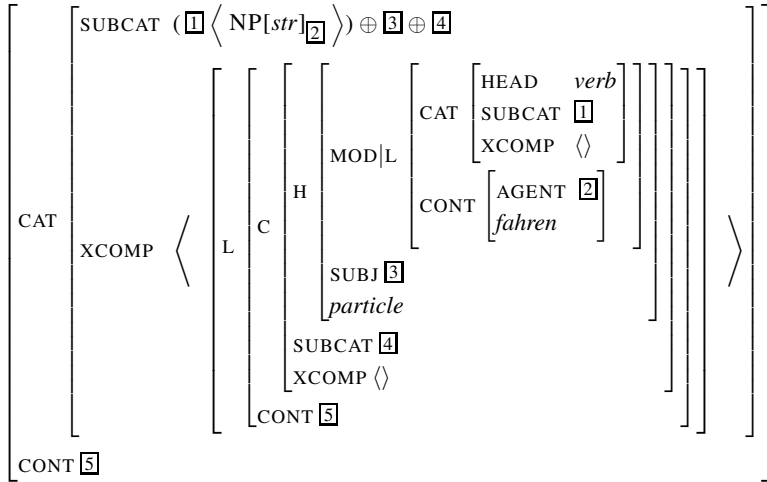
FIGURE 37 Combination of *an*₅ and *fahrbar*

(5) is structure shared with the CONT value of the particle in XCOMP. The *-bar*-derivation lexical rule embeds this CONT value under *modal-op*. At this point no particle is present and therefore the actual value of 5 is not constrained. In the next step, the particle is combined with *fahrbar*. The particle has the form of an adjunct. Its MOD value is identified with the SYNSEM value of the representation of the stem *fahr-* since this is specified accordingly in the XCOMP value of the derived *fahr-* (2). Therefore the particle *an* can access the semantic contribution of the base verb *fahr-* and can integrate it into the semantic contribution of the particle. The result is *directed-towards*(4, 6), where 4 stands for *fahren*(7), i. e., we get *directed-towards*(*fahren*(7), 6). 6 and 7 are linked to the object and subject of *anfahren*, respectively. Only after the combination of *an* and *fahrbar*, is it clear what the value of 5 is. This value is an argument of the *modal-op* relation that was contributed by the *-bar*-derivation. Since *fahrbar* is the head of *anfahrbar*, the meaning of *anfahrbar* is identical to the meaning of *fahrbar* (1).

After this sketch of the analysis, I now provide the full version. Those who are not interested in the details may skip to the discussion of (855) on page 385.

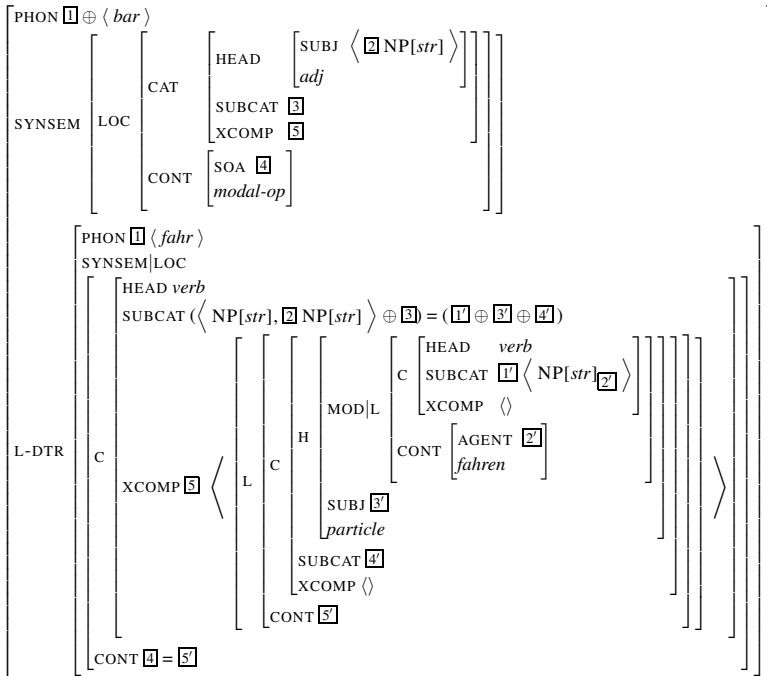
Consider what happens if the lexical rule for *-bar*-derivation in (844) is applied to the lexical item in (851) for *fahr-* + particle. The lexical item in (851), which is the representation for *fahr-* + particle, is parallel to *lach-* + particle in (785).

(851) *fahr*- ('to drive' + Particle):



(852) shows the structure that results when (851) is unified with the LEX-DTR of the *-bar*-derivation lexical rule in (844).

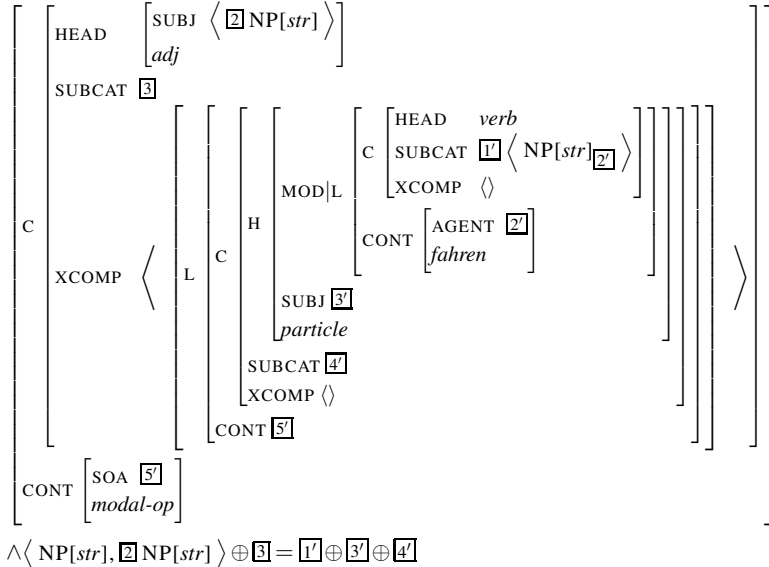
(852) *fahrbar* ('possible to drive' + particle with daughter):



I kept the original tag numbers that were used in the lexical rule. The tags that were used in the entry for *fahr*- have been marked with an apostrophe. In addition to the

tags that were used in the lexical rule, I used the tag $\boxed{5}$ to mark the identity of the XCOMP value of the LEX-DAUGHTER and the mother. As was explained earlier, information that is not mentioned in lexical rules is carried over by convention. In (852) the sharing of the XCOMP values has been made explicit. If one only looks at the mother node of (852), one gets (853).

(853) *fahrbar* ('possible to drive' + particle):



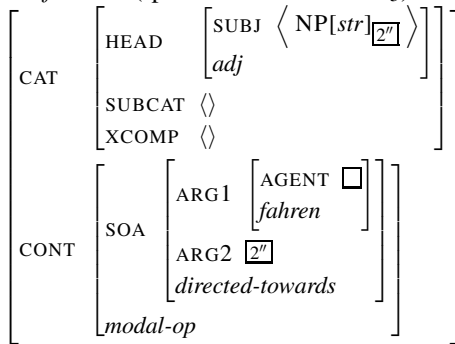
The constraint says that the valence list of the particle verb, which is determined by the particle ($\boxed{1'} \oplus \boxed{3'} \oplus \boxed{4'}$) has to be split into two lists with an NP with structural case and a rest ($\boxed{3}$). The rest is the SUBCAT list of the mother. With the assumption that the SUBJ list of the particle has zero or one element, this relational constraint can be reformulated into a disjunction.

The semantics that is embedded under *modal-op* is not the semantics of *fahren* but rather the semantics of *fahr-* + particle. So whatever is contributed by the particle will be embedded under *modal-op*.

When the structure in (853) is combined with the particle *an*₅ that was given in (788) on page 349, one gets (854) on the facing page. In this structure the tags that are instantiated by the particle are marked with two apostrophes. The particle contributes a subject and instantiates $\boxed{3'}$ with $\langle \text{NP}[\text{str}] \boxed{2''} \rangle$. Since the SUBCAT list of the particle is empty, $\boxed{4'}$ is instantiated as $\langle \rangle$. The subtraction of $\langle \text{NP}[\text{str}], \boxed{2} \text{NP}[\text{str}] \rangle$ from $\boxed{1'} \oplus \boxed{3'} \oplus \boxed{4'}$ yields the empty list and therefore $\boxed{3}$ is $\langle \rangle$. The subject of the *-bar*-adjective in (854) is identical to the subject that was introduced by the particle. It is the second argument of the *directed-towards* relation. The agent of *fahren* is suppressed.

Before turning to alternative analyses in the next section, let me briefly discuss

- (854) *an+fahrbar* ('possible to drive' + *an*₅):



the examples in (855), which show that elements that are derived from particle verbs can undergo further morphological processes:

- (855) a. unannehmbar
unacceptable
b. das Pseudo-Herumgerede²⁵⁵
the pseudo.babble

In (855a) *annehmbar* is prefixed with *un-* and in (855b) *Herumgerede* is combined with *Pseudo-*. Therefore it is necessary that the schema that combines the particle with the derived adjective or noun applies in the morphology component. The result is then the basis for the combination with elements like *un-* or *Pseudo-*.

6.3 Alternatives

Having developed an analysis that accounts both for the syntax and the morphology of particle verb combinations, I now turn to alternative proposals: In Section 6.3.1, I discuss the idea of discontinuous lexical entries for particle verbs that was formalized by Kathol (1995, p. 244–248; 1996) in the HPSG framework. Section 6.3.2 discusses the notion of lexical relatedness that was used by Stiebels and Wunderlich (1994) to account for bracketing paradoxes, and Section 6.3.3 deals with Stump's paradigm functions (1991). The discussion of the work of Neeleman and Weermann (1993) and Ackerman and Webelhuth (1998), Construction Grammar proposals, and Small Clause analyses will be deferred to Chapter 7 since these proposals also deal with constructions other than particle verbs.

6.3.1 Discontinuous Lexical Entries

In a grammar that allows for discontinuous constituents it is tempting to assume that particle verbs are discontinuous lexical entries. This has, for instance, been suggested by Wells (1947, p. 106) (see also McCawley, 1982, p. 91). Kathol (1995, p. 244–248) formalizes this idea using the constituent order domains that were

²⁵⁵Stiebels, 1996, p. 40.

introduced in Chapter 1.9.1. Kathol suggests the following lexical entry for the non-transparent particle verb *aufwachen* ('wake up'):

(856) *aufwachen* ('wake up', according to Kathol (1995, p. 246)):

$$\left[\begin{array}{l} \dots | \text{HEAD } \boxed{1} \text{ verb} \\ \dots | \text{XCOMP } \langle \rangle \\ \text{DOM } \left\langle \left[\begin{array}{l} \langle \text{wachen} \rangle \\ \dots | \text{HEAD } \boxed{1} \\ \dots | \text{XCOMP } \langle \boxed{2} \rangle \end{array} \right] \right\rangle \circ \left\langle \left[\begin{array}{l} \langle \text{auf} \rangle \\ \text{SYNSEM } \boxed{2} \left[\dots | \text{HEAD } \left[\begin{array}{l} \text{FLIP } - \\ \text{sepref} \end{array} \right] \right] \right] \right\rangle \end{array} \right]$$

This lexical entry represents syntactic structure in the lexicon. The DOM value is identical to the DOM value that would result from a combination of particle and verb in syntax. That the domain objects of the particle and the verb are related is encoded in the XCOMP value of *wachen*. Kathol's approach has the advantage that a feature that ensures that the base verb selects the right particle, i. e. *auf* instead of *vor* or something else, is not necessary. However, his approach is problematic since it cannot explain why particles can be fronted, unless two different kinds of fronting are assumed (see the discussion on page 32). Kathol distinguishes between compositional and non-compositional particle verbs and assumes that the compositional ones are licensed by his verb complex schema and non-compositional ones are listed in the form of lexical entries like (856).

As has been shown in Section 6.1.2, transparent and non-transparent particle verbs allow for the fronting of the particle. I therefore suggest that all particle verbs are represented in the same way and that fronting is restricted by general conditions for fronting and not by different lexical representations for different classes of particle verbs.

A further disadvantage of Kathol's proposal is that the fact that the particle verbs form a predicate complex is not represented in the SYNSEM part of their lexical entries: The XCOMP value of *aufwachen* in (856) is the empty list. It is not obvious how the formation of resultative constructions with particle verbs like in (706c)—repeated here as (857)—can be blocked.

- (857) # daß sich Karl müde herumliest.
 that self Karl tired PART (around).reads
 Intended: 'that Karl gets tired by reading aimlessly.'

In the analysis developed here, the particle is selected via XCOMP and the resultative construction lexical rules require an input with an empty XCOMP list. Since the XCOMP list of particle verbs contains the particle, it is correctly predicted that particle verbs cannot be input to a lexical rule that licenses resultative constructions. See page 352.

Having discussed Kathol's discontinuous lexical entries, I now turn to the re-bracketing analyses of Stiebels and Wunderlich (1994).

6.3.2 Rebracketing and Lexical Relatedness

Stiebels and Wunderlich (1994, p. 935) and Stiebels (1996, Chapter 3.2.1) assume the structure in (858) for nominalizations like *Einführung* ('introduction').²⁵⁶

(858) [ein [[führ]_V ung]_N]

They assume a notion of lexical relatedness that is similar to the one that was proposed by Williams (1981b):

(859) *Lexical relatedness:*

A compound of the structure [P [α V β]_X], where X is a noun or adjective formed from a verb (with α, β as possible derivation affixes), may be interpreted as if α, β were applied to the respective verb [P V]. α and β may be (phonologically) empty.

As they note, this principle violates strict compositionality: They assume that *Führung* ('leadership'), *Gabe* ('gift'), and *sehbar* ('watchable')²⁵⁷ are parts of

²⁵⁶For a general discussion of Stiebels and Wunderlich's account see also McIntyre, 2001c and Fehlsch, 1998, Chapter 4.2.7. In the following section, I will focus on Stiebels and Wunderlich's arguments regarding lexical relatedness.

²⁵⁷*sehbar* is often discussed as an example for blocking (see Briscoe, Copestake, and Lascarides, 1995 for a formal account for blocking). However, only one sense of *sehen* is not available. The meaning *watch* is not blocked.

- (i) a. Ein sehbarer Film, geben sie zu.
a watchable film, give they to
'They admit that it is a watchable film.' (taz, 17.08.1995, p. 18)
- b. Bei ihm wird der sehr gut lesbare Text zum sehr gut sehbaren Stück,
with him gets the very good readable text to.the very good watchable piece
'With him, the very readable text becomes a very watchable play.' (taz hamburg, 21.05.1996, p. 23)
- c. Daß allerdings das Stück sehbarer ist als das Gros der privaten
that however the piece more.watchable is than the majority of.the private
TV-Produktionen,
TV-productions
'That, however, the play is more watchable than the majority of the productions on private TV channels.' (taz, 08.05.1996, p. 14)
- d. Die deutschen Spiele von Fußball-WM und -EM [...] sollen danach frei sehbar sein.
'After that it should be possible to watch all games involving Germany in the Football World Cup and in the European Cup, as well as [...] on free TV.' (taz, 29.11.1997, p. 4)

The meaning *see* is blocked by *sichtbar* ('visible'). (ii) is an example for a *-bar*-derivation with the meaning *visible*.

- (ii) Die Ankündigung der „AG Zapfenstreich“, „hör- und sehbar“ gegen das Zeremoniell
the announcement of.the AG Zapfenstreich audibly and visibly against the ceremonial
zu protestieren. (taz berlin, 06.09.1994, p. 18)
to protest
'The announcement of the Zapfenstreich AG to protest against the ceremonial audibly and visibly.'

The reason for this unusual form is probably the coordination of the two verb stems.

the words *Einführung* ('introduction'), *Abgabe* ('delivery'), and *absehbar* ('conceivable').

Stiebels and Wunderlich argue that such a postponed interpretation is needed for other cases of compounds too since—according to them—*Aufsteher* ('riser') is ungrammatical and *Frühaufsteher* ('early.riser') is grammatical. As was discussed on page 323, *Aufsteher* is not ungrammatical and therefore such examples do not count as independent evidence for a postponed interpretation in Stiebels and Wunderlich's sense.

On page 939 they discuss the data in (860):

- (860) a. bieten \approx Gebot ('offer')
 b. verbieten \approx Verbot ('forbid/ban')
 c. anbieten \approx Angebot ('offer')
 d. aufbieten \approx Aufgebot ('exert/exertion')

verbieten is a prefix verb and *anbieten* and *aufbieten* are particle verbs. The root noun related to *bieten* is *Bot*, which was subject to a prosodically triggered *ge*-prefixation in West Germanic. The prefixed root noun *Verbot* is listed and therefore the *ge*-prefixation does not apply. The nominalizations of particle verbs are formed with *Gebot*. Stiebels and Wunderlich conclude from this that *Angebot* and *Aufgebot* are compounds that are formed from *Gebot* and a preposition. However, the data is also compatible with the analysis presented in the previous section: The *ge*-prefixation applies to a stem that contains a representation of the particle in its valence lists. No lexical relatedness is needed.

That *leadership* ('Führung') has anything to do with *introduction* ('Einführung') is highly implausible and any analysis that does not have to make such assumptions should be preferred over that of Stiebels and Wunderlich. Furthermore, in their approach, not just the interpretation has to get postponed, but the evaluation of other constraints as well. Stiebels and Wunderlich do not have a solution to the problem of non-existent bases: To derive *Ausbreitung* ('spreading') they have to assume **Breitung* as part of the analysis. Apart from this, it is not clear when the passive-like promotion of the accusative object should apply in *-bar*-derivations of verbs like *anfahren*. In their view, the *-bar*-derivation applies to an intransitive verb and the particle is combined with the result later. Only then is the additional argument that is introduced by the particle available. As was discussed in the data section, *-bar*-derivation productively applies only to transitive verbs.

6.3.3 Paradigm Functions

Stump (1991) suggests so-called paradigm functions that relate stems to stems or stems to words (roots to roots and roots to words in his terminology). These functions may be defined in a way that allows inflectional or derivational material to attach to a head contained in a more complex structure. With such a definition

he can account for Pesetsky's *unhappier* puzzle (1985): In general, the comparative suffix joins with short adjectives and does not attach to trisyllables, so a bracketing [[un-happy] er] is not possible since *unhappy* is trisyllabic. Because of the shortness constraint, [un [happi-er]] is the only available structure, but semantically one needs the first structure. For this comparative formation, Stump defines paradigm functions that attach the comparative ending to the head inside [un-happy]. As was mentioned in footnote 137 on page 310, he also allows combinations of derivational material with heads in complex structures. On page 714 he remarks that in derivational paradigms in which the derived member belongs to a syntactic category distinct from that of the base member, the derived member generally fails to allow this kind of structure where the inflectional or derivational material attaches to the head. He remarks that nouns derived from particle verbs are exceptions (*hang on* → *hanger on*, *pass by* → *passer-by*). In the previous section, it was shown how similar German examples can be handled without violating Stump's generalization. For *-bar*-derivation one does not need [[an-fahr]-bar] and *Ge-* *-e*-nominalization can be handled without the *Ge-* *-e* attaching to the head inside [herum-renn]. The account that was presented in the previous section has another advantage over a imaginable application of Stump's proposal to German particle verbs: It can deal with particle verbs like *eindosen* ('to tin') that are not derived from base verbs. A verb **dosen* does not exist (see Section 6.1.10.3). In the approach presented in the last section, *eindosen* is derived from the noun *Dose* ('tin'). The result of the application of a lexical rule is a verbal stem that selects the particle *ein*. This stem has to be inflected. In an adaption of Stump's approach to German particle verbs, the inflectional material could not attach to a HEAD since the category of *eindosen* (V) differs from *Dose* (N) and therefore *eindosen* is headless (see Stump's definition of head on page 681). This means that an adaption of Stump's approach cannot provide a uniform treatment of inflection and derivation for all classes of particle verbs where the inflectional or derivational material attaches to the stem directly.

6.3.4 Linearization-Based Morphology

Crysmann (1999) developed an account for morphosyntactic paradoxes in Fox that uses linearization domains for the representation of stems and inflectional and derivational material. With such an approach it is possible to combine Kathol's representation of particle verbs, which was discussed in Section 6.3.1, with a morphology component that circumvents the paradoxes. The participle *aufgewacht* ('woken up') can be analyzed as the result of a lexical rule application to a lexical item that contains *auf* and *wach* in a list of morphological objects. The lexical rule adds the morphological objects *ge-* and *-t* to this list. Linearization rules ensure that the *ge* and *t* attach to the verbal stem.

It is interesting that such a solution is possible in the HPSG framework, but I have shown that the additional machinery that would be needed to guarantee the proper linearization of the inflectional and derivational material and the extra

list for the representation of morphological material is not justified for German. Furthermore, this proposal, of course, has the problems discussed in Section 6.3.1 since it is based on Kathol's analysis.

6.4 Summary

After an extensive discussion of data, an account of particle verbs that treats particles as part of the predicate complex has been developed. Particle fronting can be analyzed as an instance of complex fronting. No new mechanisms have to be introduced. In particular, no extraction of the finite verb from the fronted constituent, as is needed in other theories, is necessary. The particle is selected by the same valence feature as other complements that form a complex with their head. The lexical rules that license particle verbs which follow a productive pattern do not combine two adjacent elements, but for every input entry, they license another lexical item that has the potential to combine with a particle. This particle may be modified, extracted, or intraposed into the *Mittelfeld*. In the cases where modification, intraposition, or extraction is impossible, this impossibility is due to additional constraints. Since the matrix verb and particle do not form one single (morphological) object, the matrix verb may appear in clause initial position separated from the embedded particle.

The proposed analysis explains similarities with object predicatives and resultative constructions. The impossibility of resultative constructions with particle verbs also follows from the valence specification of the latter. Since particles are selected via XCOMP, the resultative formation lexical rule cannot introduce a resultative predicate since XCOMP is already filled. For the same reason, particles cannot be added to stems that have been derived by the resultative predicate lexical rule. The iteration of particles is also excluded.

In the last part of this chapter, I developed an approach to inflectional and derivational morphology that handles the data without powerful devices like re-bracketing. Inflection and derivation apply to stems directly, the particle is attached to fully inflected signs by an instance of the same grammar rule, either in morphology or in syntax.

A Comparison with Other Approaches to Complex Predicates

In this chapter, I discuss some alternatives that could not be dealt with in the previous chapters since the analyses presented here aim to account for all phenomena discussed so far or for subsets thereof.

In Section 7.1, I will discuss the approach to resultatives and particle verbs of Neeleman and Weermann. In Section 7.2, I will discuss Ackerman and Webelhuth's proposal. Their book provided the most detailed HPSG-inspired analysis of complex predicates to date. They discuss auxiliary constructions, causative formation, modal infinitives, and particle verbs. I will show that their approach has quite serious empirical problems and that it does not capture the generalizations about coherent constructions in German. In Section 7.3, I deal with Construction Grammar and in Section 7.4, I will discuss Small Clauses and explain why Small Clause analyses have not been used in HPSG grammars.

7.1 The Complexity Constraint: Neeleman and Weermann (1993)

Neeleman and Weermann (1993, Section 5) and Neeleman (1994, Chapter 6.3.2) analyze particle verbs in morphology and resultative constructions in syntax. They observe that particles and resultative predicates are mutually exclusive. Neeleman and Weermann (1993, Section 5) and Neeleman (1994, Chapter 6.3.2) stipulate a Complexity Constraint that is supposed to rule out the presence of both resultative predicates and particles. However, their constraint also rules out object predicative constructions (Neeleman's *consider*-type predicates) with particle verbs, which were discussed in Chapters 6.1.5.1 and 6.2.1 and are repeated here as (861) for convenience.

- (861) a. Das kam ihm dumm vor.
 this came him silly PART
 'This seemed silly to him.'

- b. Er sieht gut aus.
 he looks good PART
 'He looks good.'

Parallel examples can also be constructed for Dutch. The examples show that the formulation of constraints such as the Complexity Constraint is not justified since complex heads of the kind Neeleman and Weermann want to rule out do exist. The restrictions, rather, have to be placed on the productive processes that form resultative constructions and that license the productive cases of particle verb combinations. Verbs like *vorkommen* ('to seem to somebody to be') and *aussehen* ('to look') are instances of complex heads that are listed in the lexicon and that are not derived by productive rules.

7.2 Lexical Adicity and the Inversion of the Selection: Ackerman and Webelhuth (1998)

Ackerman and Webelhuth (1998) propose an interesting approach for a single unique lexical representation of predicates that may surface in different ways. They address the fact that passive, tense, and causatives are expressed analytically in some languages and synthetically in others. Ackerman and Webelhuth develop analyses for tense, passive, causatives, and particle verbs. In their book, they develop the analyses in the order just given and I will comment on their analyses in the same order in the next subsections.

The analyses for languages that realize their predicates analytically assume a lexical rule that takes a lexical entry as input and adds an appropriate auxiliary to a special purpose valence list that contains auxiliaries. This means that Ackerman and Webelhuth reverse the direction of selection: It is not the auxiliary that embeds a main verb or another verbal complex, but instead the main verb selects all auxiliaries.¹

Ackerman and Webelhuth use a feature geometry that is strongly influenced by the LFG view of Ackerman. For instance, they have an f-structure. In LFG, universal functional information, such as grammatical functions like subject, direct object, indirect object, is represented at the level of f-structures. Since the introduction of this feature geometry would go beyond the scope of the discussion, I took the liberty of translating their rules into a form that the reader is more familiar with. The parts of the analyses discussed here are completely analogous to those suggested by Ackerman and Webelhuth. For the details I omitted, the reader is referred to their book.

7.2.1 Lexical Rules

Ackerman and Webelhuth emphasize the point that their approach is superior to lexical rule-based accounts as they use types. They claim that it is impossible

¹A similar analysis was suggested by Karttunen (1986, Chapter 2.4) for the treatment of *Clause Union* in Finnish in the framework of Categorical Grammar.

to express generalizations with lexical rules. As Krieger, Nerbonne, Copestake, Briscoe, and Meurers have shown in several publications (Krieger and Nerbonne, 1993, Chapter 7.4.1; Copestake and Briscoe, 1992; Meurers 1995; 2000, Chapter 4; 2001) and as was discussed in Chapter 1.8, lexical rules can be written in the same way as immediate dominance schemata. The lexical rule in (862) is just another way to write (863).

$$(862) \quad LE_1 \mapsto LE_2$$

$$(863) \quad \begin{bmatrix} LE_1 \\ \text{LEX-DTR } LE_2 \\ \text{lexical-rule} \end{bmatrix}$$

The only difference is that the type of the feature structure is not specified in (862). The argument of Ackerman and Webelhuth is only true for so-called external lexical rules, i. e. Meta Level Lexical Rules. In what follows, I will therefore use the term lexical rule when I refer to the descriptions used by Ackerman and Webelhuth.

7.2.2 Tense

(864) is the counterpart of the types that Ackerman and Webelhuth give on pages 203–206.

(864) Lexical Rule for the Perfect following Ackerman and Webelhuth, 1998:

$$\begin{bmatrix} \text{SYNSEM|LOC|CAT} \begin{bmatrix} \text{HEAD} \quad \boxed{1} \\ \text{SUBCAT} \quad \boxed{2} \\ \text{AUX} \quad \langle \text{V}[\text{HEAD} \boxed{1}, \text{AUXF } \textit{haben}] \rangle \oplus \boxed{3} \end{bmatrix} \\ \text{LEX-DTR} \begin{bmatrix} \text{SYNSEM|LOC|CAT} \begin{bmatrix} \text{SUBCAT} \quad \boxed{2} \\ \text{AUX} \quad \boxed{3} \end{bmatrix} \\ \text{word} \end{bmatrix} \\ \text{word} \end{bmatrix}$$

The lexical rule in (864) takes a participle form as its input (LEX-DTR). The output of the rule takes an arbitrary form of *haben* in addition to other auxiliaries that have already been subcategorized for by the input ($\boxed{3}$). The head features of the output are taken over from the head features of the added auxiliary. When the lexical rule is applied to *schlafen*, the result is (865).

(865) *schlafen* ('sleep') + Perfect following Ackerman and Webelhuth, 1998:

$$\begin{bmatrix} \text{HEAD} \quad \boxed{1} \\ \text{SUBCAT} \quad \langle \text{NP}[\textit{str}] \rangle \\ \text{AUX} \quad \langle \text{V}[\text{HEAD} \boxed{1}, \text{AUXF } \textit{haben}] \rangle \end{bmatrix}$$

During an analysis of (866), the *haben* auxiliary is instantiated by the finite verb *hat*. The HEAD value of the complete construction is determined by the head value of the dependent element, i. e. by the head value of the auxiliary.

- (866) weil Karl geschlafen hat.
 because Karl slept has
 ‘because Karl has slept’

For the analysis of (867), another lexical rule is needed that maps the perfect lexical entry in (865) to a lexical entry that subcategorizes for a future auxiliary.

- (867) weil Karl geschlafen haben wird.
 because Karl slept have will
 ‘because Karl will have slept.’

The output of such a rule is (868).

- (868) *schlafen* (‘sleep’) + Perfect + Future following Ackerman and Webelhuth:
- $$\left[\begin{array}{ll} \text{HEAD} & \boxed{} \\ \text{SUBCAT} & \langle \text{NP}[\textit{str}] \rangle \\ \text{AUX} & \langle \text{V}[\text{HEAD } \boxed{}, \textit{werden}], \text{V}[\text{VFORM } \textit{bse}, \textit{haben}] \rangle \end{array} \right]$$

Ackerman and Webelhuth motivate their approach mainly by the principle of *Lexical Adicity*, which states that the valence of a lexical entry must be entirely determined and that it may not be changed depending on its syntactic environment. This motivation is not a very strong one since Lexical Adicity also holds for the argument attraction approaches of Hinrichs and Nakazawa (1989a). In approaches based on argument attraction, the arguments of the auxiliaries in particular and the arguments of raising verbs in general are actually specified in the lexicon. The combination of elements in syntax does not introduce new arguments at heads. The matrix verbs in argument attraction constructions have specified valence features. For instance, the SUBCAT value of the future auxiliary *werden* is the concatenation of the SUBJ value and the SUBCAT value of the embedded verb (compare the lexical entry on page 86). The actual form and number of the complements of perfect auxiliaries is underspecified in their lexical entries, but nevertheless this information is present and it is projected from this head until it gets saturated in head-argument structures.

Another argument which Ackerman and Webelhuth discuss (on pages 140 and 167–168), is that a theory that analyzes auxiliaries in the way suggested by Hinrichs and Nakazawa (1989b) cannot account for sentences like those in (869).

- (869) a. warum er geweint hat.
 why he cried has
 ‘why he has cried.’

- b. warum er geweint.
 why he cried
 'why he has cried.'

In earlier stages of German it was possible to omit the perfect auxiliary as in (869b). Ackerman and Webelhuth represent the *hat* as an optional element in the AUX list. However, that heads may be omitted is not an unusual thing in German. In nominal structures both determiners and nouns can be omitted:

- (870) a. Er hat nur die interessanten Bücher gelesen.
 he has only the interesting books read
 'He only read the interesting books.'
 b. Er hat nur die interessanten gelesen.
 he has only the interesting read
 'He only read the interesting ones.'
 c. Er hat nur interessante Bücher gelesen.
 he has only interesting books read
 'He only read interesting books.'
 d. Er hat nur interessante gelesen.
 he has only interesting read
 'He only read interesting ones.'

Regardless of whether we assume the determiner or the noun to be the head in the nominal structures in (870), we have structures without a phonologically realized head in (870). This can be analyzed by phonologically empty elements or by unary projections, as was discussed in Chapter 6.2.5.1. If we assume a phonologically empty *hat* for the cases in (869), this *hat* would have the very same structure, the same type, as the phonologically realized versions of *haben* ('to have'). The assumption of a lexical rule for the finitization of the participle was criticized by Ackerman and Webelhuth (1998, p. 141) since the construction in (869) would be described partly in the lexicon and partly in syntax. This point is also invalid since the difference between a lexical rule and a unary projection is zero in this case. The ellipsis rule that can be assumed for (869) as an alternative to an empty head is a part of syntax in the same way as the combination of perfect auxiliary and embedded verbal complex is.

To conclude, I can say that all arguments that Ackerman and Webelhuth put forward to support their inversion of selection are either very weak or wrong.

7.2.3 Causatives

Ackerman and Webelhuth assume a lexical rule for causatives that is parallel to the one in (871).

(871) Lexical rule for causatives following Ackerman and Webelhuth, 1998:

[	SYNSEM|LOC	[	CAT	[	HEAD [1]	]	⊕	[3]]]]
[	LEX-DTR	[	SYNSEM|LOC	[	CAT	[	SUBCAT [3]	]	AUX	[	4]
[	word	[	CONT	[	CAUSER [2]	CAUSED-SOA [5]	cause]]]]
[	word	[	CONT	[	5]]]]]]]

This special rule that was suggested for causatives in German does not account for the fact that other AcI verbs (like perception verbs) behave like *lassen*. Since these verbs have another meaning, the semantic contribution of the head has to be transferred from the AcI verb to the output lexical entry in addition to the head information.

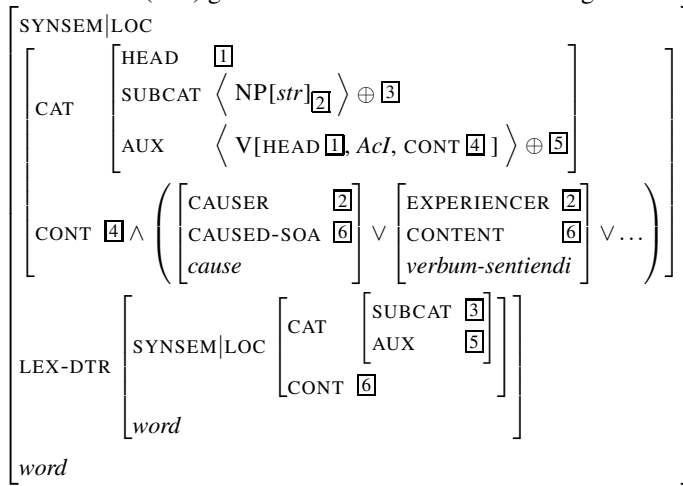
(872) Lexical Rule (871) generalized for AcI Verbs:

[	SYNSEM|LOC	[	CAT	[	HEAD [1]	]	⊕	[3]]]]
[	LEX-DTR	[	SYNSEM|LOC	[	CAT	[	SUBCAT [3]	]	AUX	[	5]
[	word	[	CONT	[	4]	]	⊕	[5]]]]
[	word	[	CONT	[	6]]]]]]]

The question that now follows immediately is how the linking between the subject of the AcI construction and the semantic role in the predicate of the AcI verb can be established. Because of their assumptions about *Lexical Adicity*, Ackerman and Webelhuth are forced to assume that the subject of the AcI verb is directly contained in the output of the causativization lexical rule. It cannot be raised from the AcI verb. The filling of the roles in (871) is only possible because it is known what the feature name of the subject role is (CAUSER). For perception verbs, the

subject role is not a causer, but an experiencer.² The causative rule in (872) can only be generalized to the other AcI cases if possible roles that come from the AcI verb are specified disjunctively. How this could look like is shown in (873). Furthermore, in the generalized rule in (872), the AcI verb does not have access to the predicate that it embeds logically. It is therefore not possible to integrate the semantic contribution of the embedded predicate (6) into the semantic representation of the AcI verb. This also has to be done in the lexical rule which therefore has to have knowledge about the semantic roles to be filled.

(873) Lexical Rule (871) generalized for AcI Verbs + Linking:



Turning to a more general point, if one were to seriously pursue Ackerman and Webelhuth's interpretation of *Lexical Adicity*, one would have to analyze coherent constructions by lexical rules like (873). As the sentence in (874) shows, the verbal complex formation can be iterated and in principle there is no upper limit.³

- (874) weil ich Cecilia Hans die Nilpferde füttern helfen lassen habe.
 because I Cecilia Hans the hippos feed help let have
 'because I let Cecilia help Hans feed the hippos.'

Füttern ('to feed') is the transitive main verb. The object control verb *helfen* ('to help') introduces its own subject and another argument is added by *lassen* ('to let/to have'). Of course, the number of verbs in the verbal complex is restricted by performance factors. Up until now I have been unable to find a non-constructed

²Ackerman and Webelhuth (1998, p. 335) use role names like *CALLER* and *CALLED* for the predicate *call-up*. With such predicate specific role names the disjunction in (873) would get even more complex since it would have to include *SEER* and *SEEN*, *HEARER* and *HEARD* and so on. The disjunction in (873) would basically have to list all role names for all AcI predicates. The same holds for a lexical rule for other verbs that are heads in a coherent construction. See the discussion around (874).

³As was shown on page 65, the claim that predicate complexes have to have argument structures that correspond to those of simplex lexical entries is empirically not correct.

example for a coherent construction with more than four verbs, but to model this in syntax would be as wrong as the assumption of an upper limit for the number of center self embeddings of relative clauses.

- (875) Der Mann, [RS der [NP den Mann, [RS der [NP der Frau, [RS der die
 the man the the man the the woman the the
 Katze gehört,]] hilft,] kennt,] schläft.
 cat belongs.to helps knows sleeps

The sentence in (875) is not ungrammatical, but it is hardly understandable for humans.

The consequence of the iterability of embedding of verbal complexes under object control verbs and AcI verbs is that Ackerman and Webelhuth have to assume an infinite number of lexical items. There is no trigger for the prediction of these lexical entries. In a syntax-based account such as the one that is presented in this book, only material that is present is combined.

If Ackerman and Webelhuth did not handle such coherent constructions with their lexical rule but in syntax instead, as they suggested later (personal communication, 2000), they would have two totally different analyses for coherent constructions: In causative constructions the base verb is the head and *lassen* the dependent, and in coherent constructions involving ordinary control verbs, the control verb is the head and the other verb the dependent. The only thing the two structures would have in common would be the fact that they are headed structures, they would not even have similar selecting heads.

7.2.4 Semantics and Pronominalization

According to Ackerman and Webelhuth, the meaning of all auxiliaries is represented in the semantic contribution of the base verb that selects for auxiliaries and causatives. As was discussed on the preceding page, Ackerman and Webelhuth's analysis had to be extended to all coherent constructions. The question then is how they want to explain the possibility of the pronominalization of different predicates in a clause. In cases like (876), it is usually assumed that the pronoun refers to some predicate or a projection thereof.

- (876) a. Ich habe Komödie gespielt und du wirst es auch.
 I have comedy played and you will it too
 'I put on an act and you will do so too.' (es = Komödie spielen)
- b. Ich mußte Komödie spielen, um dich zu bekommen, aber nun, da
 I had.to comedy play for you to get but now since
 ich dich habe, brauche ich es nicht mehr.⁴
 I you have need I it not more
 'I had to put on an act to get you, but now that I have you I do not have to do that anymore.' (es = Komödie spielen)

⁴Bech, 1955, p. 212.

Now, according to Ackerman and Webelhuth, all semantic information is already contained in the lexical entry of the main verb, i. e. in *gespielt* and *spielen*, respectively. The consequence of this is that pronouns must be able to look inside these lexical entries.

7.2.5 Particle Verbs

Ackerman and Webelhuth use a separate valence feature PART for the selection of particles. The value of this feature is a list that contains a particle if the verb occurs in verb-initial position and that is empty when the verb occurs in final position. Their lexical entry for *an+ruft* is shown in (877) in a notation that is adapted to the one that I have used throughout the book.

(877) (*an*) *ruft* verb-initial version according to AW (1998, p. 334–335):

$$\left[\begin{array}{l} \text{PHON } \langle \textit{ruft} \rangle \vee \langle \textit{anruft} \rangle \\ \text{SYNSEM|LOC|CAT} \left[\begin{array}{l} \text{SUBCAT } \langle \text{NP}[\textit{str}], \text{NP}[\textit{str}] \rangle \\ \text{PART } \langle \text{PART}[\textit{an}] \rangle \vee \langle \rangle \end{array} \right] \end{array} \right]$$

The proper distribution of the particle in both the valence feature and the phonological representation is ensured by type constraints that rule out the cases with a phonological representation *anruft* + particle *an* and the phonological representation *ruft* without a particle. With the types multiplied out, (877) is equivalent to (878) and (879). (878) is the entry that is needed for clauses with the finite verb in the left sentence bracket.

(878) (*an*) *ruft* verb-initial version according to AW:

$$\left[\begin{array}{l} \text{PHON } \langle \textit{ruft} \rangle \\ \text{SYNSEM|LOC|CAT} \left[\begin{array}{l} \text{SUBCAT } \langle \text{NP}[\textit{str}], \text{NP}[\textit{str}] \rangle \\ \text{PART } \langle \text{PART}[\textit{an}] \rangle \end{array} \right] \\ \textit{partld-lci} \wedge \textit{second-lci} \end{array} \right]$$

For the verb-final case, they do not select the particle via a valence feature, but have the phonological contribution of the particle integrated in the phonological representation of the lexical entry.

(879) *anruft* verb-final version according to AW:

$$\left[\begin{array}{l} \text{PHON } \langle \textit{anruft} \rangle \\ \text{SYNSEM|LOC|CAT} \left[\begin{array}{l} \text{SUBCAT } \langle \text{NP}[\textit{str}], \text{NP}[\textit{str}] \rangle \\ \text{PART } \langle \rangle \end{array} \right] \\ \textit{compound-lci} \end{array} \right]$$

So, the disjunctive specification in (877) is equivalent to two separate lexical entries. The representation of particle verbs which I suggested in Chapter 6.2 is free

of disjunctions. One single lexical entry for each particle verb is sufficient. In Chapter 10.2.2 of their book, Ackerman and Webelhuth argued at length against theories that stipulate two lexical entries for particle verbs, whether related by lexical rules or not. Of course, two lexical rules that derive two lexical entries from one representation in a stem lexicon can be reformulated as one lexical rule producing a disjunctively specified output. That is what Ackerman and Webelhuth did. So, if their argument has any force at all, it is an argument against their own theory.

The lexical entry in (879) states that particle and verb constitute a single object that may not be separated. As should be clear from the discussion of the data in Section 6.1.3, there are several problematic aspects of such an approach. Firstly, it cannot explain why the particle may appear separated from the verb, even in verb-final sentences. Example (689)—repeated as (880) for convenience—shows that the particle (*ab*) can appear non-adjacent to its base verb.

- (880) Andrew Halsey ist auf dem Weg von Kalifornien nach Australien weit
 Andrew Halsey is on the way from California to Australia far
 ab vom Kurs gekommen.⁵
 off from.the course come.
 ‘On the way from California to Australia Andrew Halsey strayed way off
 course.’

This example further shows that there are particles that have a syntactic life in that they can be modified. This fact is not accounted for by Ackerman and Webelhuth’s approach at all. Apart from that, they cannot explain the separation of verb and particle in Thuringian verbal complexes which was discussed in Chapter 6.1.3.3.

Secondly, consider the sentences in (660), repeated here in abbreviated form:

- (881) a. *Schicht* hat von denen keiner *gearbeitet*.⁶
 PART(shift) has of those nobody worked
 ‘None of them has worked shifts.’
 b. *Dagegen* ist *zu halten*, daß [...] ⁷
 this.against is to hold that
 ‘As an argument against this, it has to be said, that [...]’
 c. *Fest* scheint auch *zu stehen*, daß [...] ⁸
 PART(solid) seems also to stand that
 ‘It seems to be certain that ...’

In these sentences the particle is fronted and the base verb is non-finite. In Ackerman and Webelhuth’s approach such non-finite particle verbs are analyzed as

⁵taz, 04.10.1999, p. 20.

⁶Spiegel, 48/1999, p. 305.

⁷In the main text of Heringer, 1973, p. 93.

⁸In the main text of Engel, 1977, p. 219.

words. Therefore Ackerman and Webelhuth would have to assume extraction out of words to explain these sentences.

Ackerman and Webelhuth do not deal with resultative constructions in their book at all, but if they assume a lexical rule for resultative constructions, the impossibility of particle verbs to appear in resultative constructions would have to be enforced by the stipulation of the value of PART as the empty list in the lexical rule for resultative constructions. But this stipulation does not help in the case of verb-last particle verbs since the particle is not contained in the valence list of verb-last verbs. The only way to block a resultative predicate lexical rule from applying is to stipulate that it does not apply to words of the type *compound-li*. This means that Ackerman and Webelhuth have to stipulate two different reasons for why particle verbs cannot be input to resultative predicate lexical rules. The iteration of particles has to be excluded too and again there will be two different reasons why the iteration of particles is impossible. In the approach presented here, the fact that particles cannot be iterated and that particles and resultative predicates are mutually exclusive follows from the fact that the productive rules add to the same valence list and that this list has to be empty in the input of the rules. Furthermore, it has to be remarked that with their use of a separate valence feature for particles, Ackerman and Webelhuth do not capture the similarities between verbal complexes and particle verb combinations. If they were consistent, they would have to list the particles on their AUX list.

Ackerman and Webelhuth (1998, p. 333) assume the following morphological pattern for particle-verb compounding:⁹

$$(882) \quad \left[\begin{array}{l} \text{MS} \\ \text{MDTR} \\ \text{MDTR2} \end{array} \left[\begin{array}{l} \text{POS} \quad \boxed{5} \\ \text{PHON} \quad \boxed{3} + \boxed{4} \\ \text{INFL} \quad \boxed{6} \end{array} \right] \right]$$

$$\left[\begin{array}{l} \text{MS} \\ \text{MDTR} \\ \text{MDTR2} \end{array} \left[\begin{array}{l} \text{POS} \quad p \\ \text{PHON} \quad \boxed{3} \\ \text{part-word} \end{array} \right] \right]$$

$$\left[\begin{array}{l} \text{MS} \\ \text{MDTR} \\ \text{MDTR2} \end{array} \left[\begin{array}{l} \text{POS} \quad \boxed{5} \\ \text{PHON} \quad \boxed{4} \\ \text{INFL} \quad \boxed{6} \\ \text{simplex-word} \end{array} \right] \right]$$

They assume that a fully inflected particle verb like *anruft* is created by compounding the particle with the fully inflected word form *ruft* which bears the same inflectional features (INFL) as the resulting compound.

This approach cannot account for particle-verb combinations with non-existent base verbs like *eindosen* ('to tin') (see section 6.1.10.3). Since there is no verb **dosen*, it cannot be used for compounding in a schema like (882).

⁹I omitted their LME feature. POS stands for part of speech and INFL for inflection.

7.3 Construction Grammar

Proponents of Construction Grammar have argued that some utterances have a meaning that cannot be computed from the meaning of the individual words, but, rather, has to be attributed to the construction the words are used in. Goldberg (1995) argued, for instance, that the meaning of the caused-motion construction, the resultative construction and the *way* construction should be attributed to the phrasal configuration in which directional PPs, resultative predicates, and possessive + *way* appear. Jackendoff (1997, p. 171) proposed a Resultative Construction and Booij (2002) suggests treating particle verbs as Constructions. In what follows, I show why I consider Goldberg's analysis problematic and not compatible with general assumptions made in HPSG.

Goldberg (1995) provides a hierarchy of Constructions that mention grammatical functions, but does not make explicit her assumptions about syntax. On page 152, she gives a syntactic structure for the *Caused-Motion Construction*.

(883) SUBJ [V OBJ OBL]

(883) has internal structure: A VP node and a subject NP. On page 192, she suggests a ternary branching structure for resultative constructions that also corresponds to (883). This means that Goldberg's constructions are trees. She relates these trees via inheritance links that are also organized in hierarchies. Since sentences with resultative predicates may be passivized, Goldberg has to have another Construction that accounts for passivized resultative constructions. The inheritance link that relates the Active Resultative Construction to the Passive Resultative Construction is equivalent to a meta rule in GPSG or to a transformation that maps one tree onto another tree. If one were to transfer Goldberg's account to the fragment for German that has been developed in this book, the structure assigned to Resultative Constructions would be:

(884) [SUBJ OBJ OBL V]

Alternatively, one could assume binary branching structures, but such an assumption would in no way simplify the grammatical system. As we saw in Chapter 5, there is considerable freedom in constituent order: Subject and object can be permuted, adjuncts can appear at any place in the *Mittelfeld*, the verb can appear in verb-initial position, and the subject, the object, an adjunct, or the resultative predicate can be fronted. The consequence is that one had to have Constructions for all these possible combinations:

- (885) a. [OBJ SUBJ OBL V]
 b. [SUBJ OBL OBJ V]
 c. [OBJ OBL SUBJ V]
 d. [OBL OBJ SUBJ V]
 e. [OBL SUBJ OBJ V]

- f. [V SUBJ OBJ OBL]
- g. [V SUBJ OBL OBJ]
- h. [V OBJ SUBJ OBL]
- i. [V OBJ OBL SUBJ]
- j. [V OBL SUBJ OBJ]
- k. [V OBL OBJ SUBJ]

If extraction is not modeled with traces one needs the following Constructions in addition:

- (886) a. [V SUBJ OBL] (OBJ extracted)
- b. [V OBL SUBJ] (OBJ extracted)
- c. [V OBJ OBL] (SUBJ extracted)
- d. [V OBL OBJ] (SUBJ extracted)
- e. [V SUBJ OBJ] (OBL extracted)
- f. [V OBJ SUBJ] (OBL extracted)

Since some arguments are licensed by the Construction and not by the lexical items involved, lexical rules cannot be used to explain unbounded dependencies.

A further problem is that it is not trivial to account for adjuncts in such a system: Adjuncts can be inserted anywhere in the *Mittelfeld*. To account for (887) one would need a Construction like the one in (888).

- (887) daß er den Teich schnell leer fischt.
 that he the pond quickly empty fishes
 ‘that he quickly fishes the pond empty’

- (888) [SUBJ OBJ Adjunct OBL V]

Since the number of adjuncts per head is not limited, one would get infinitely many Constructions unless one introduces devices like the Kleene star and assumes that this abbreviation is expanded when the rule is actually applied.¹⁰ Goldberg (1995, p. 74) explicitly states that she assumes her Constructions to be static, i. e., Constructions are not created on the fly. Since she allows for default specification and non-monotonic inheritance relations between different Constructions, she has to assume that each Construction is fully specified and that the relation between Constructions is not computed online (p. 98). Therefore she has to assume infinitely many Constructions.

The approach that I suggested in Chapter 5 is a valence-based approach. The information about dependent elements is encoded in the lexicon and the actual

¹⁰One solution to this problem is of course to assume that Constructions parallel the ID schemata of HPSG, i. e., that they do not encode information about precedence. The generalization about the rules in (885) could then be captured. To account for the adjuncts in the middle of a Construction, Goldberg could assume discontinuous Constructions.

surface realization is governed by general principles that hold for all predicates in German: The verb is either serialized in the left or in the right sentence bracket, elements in the *Mittelfeld* may be permuted. Lexical rules for English resultatives will be very similar to the ones that I suggested for German, but the surface syntax of English is entirely different. The Construction-based account cannot explain this, the Resultative Construction that was suggested for English has very little in common with the structures that would be needed for German. What it does have in common are the grammatical functions and this is exactly what is captured in the lexical rule-based approach.

Figure 38 shows the Construction Grammar analysis and the analysis that I suggested in Chapter 5.2 for sentences like (485a)—repeated here as (889).

- (889) Die Jogger liefen den Rasen platt.
the joggers run the lawn flat
‘The joggers trampled the lawn.’

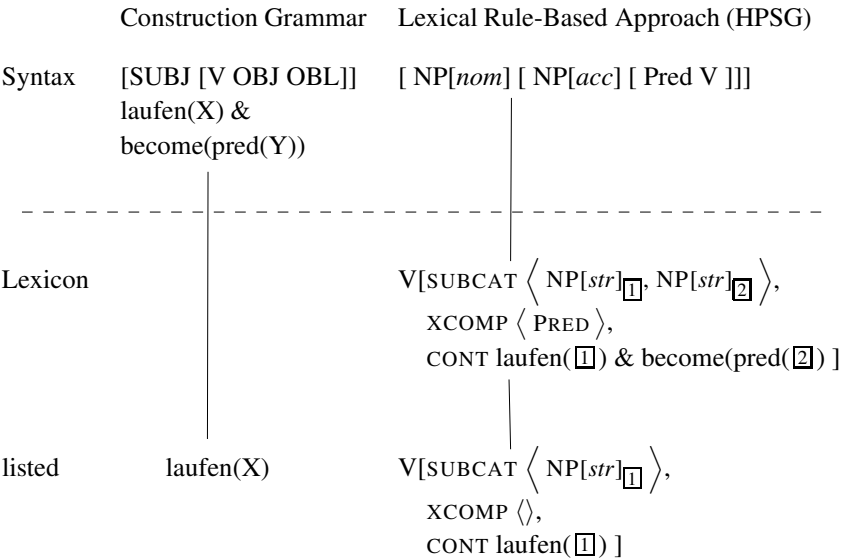


FIGURE 38 Constructions vs. Lexical Rules

The figure shows that the two analyses are quite similar: In the Construction Grammar approach, one lexical predicate that is plugged into a syntactic Construction exists. The Construction integrates the meaning of the lexical entry into the parts of the meaning that is contributed by the Construction. Something similar happens in the lexical rule-based approach. A lexical entry licenses another lexical item that has extended valence specifications and, according to the valence information, it has additional meaning components. Goldberg argues that the *become*

part should not be part of lexical entries since it is only present in the resultative construction. Note that the *become* part is not contained in the lexical entry for *laufen* in the lexical rule-based approach. There is just the basic form listed in the lexicon. This lexical entry licenses another lexical item that has an additional object and an additional predicate. Only when these dependents are realized in syntax, does one get the resultative meaning.

In Chapter 1.4.5 of her book, Goldberg argues against lexical rule-based approaches on the basis of experimental data from sentence processing. It has been observed that there are differences in processing times when real lexical ambiguity in comparison to usage of two verbs with the same core meaning is involved.

- (890) a. Bill set the alarm clock onto the shelf.
- b. Bill set the alarm clock for six.
- (891) a. Bill loaded the truck onto the ship.
- b. Bill loaded the truck with bricks.

Misinterpreted lexical ambiguity creates a more marked processing load increase than misinterpreted uses of the same verb. In the experiments, there was a bigger difference in answering times for the sentences in (890) than there was in (891). However, there was a difference in reaction times for (891a) and (891b). In Goldberg's system, one would explain this by different preference values for the Constructions. In the lexical rule-based approach, one would explain this by assuming that one valance representation is basic and the other one is licensed by a lexical rule. The application of the lexical rule is time consuming, but since the lexical entries are related, the processing load is not as high as it is with two totally unrelated verbs. This argumentation shows that the lexical rule-based approach can explain the data as well, and therefore the Construction-based approach does not have any advantages over it.

On page 107, Goldberg argues against lexical rule-based accounts for the locative alternation since these have to assume that one form of the verb is more basic.

- (892) a. He loaded hay onto the wagon.
- b. He loaded the wagon with hay.

She observes that this is problematic for some other verbs since there is no clear intuition about what is the basic form and what is derived. She argues that an advantage of Constructions is that one can relate the Constructions without making claims about which one has to be assumed to be basic. However, this argument against lexical rules is not sound. In a lexical rule-based approach, one can assume a representation of the verb stem that is listed in the lexicon. Furthermore, one assumes a pair of lexical rules that map the stem entry onto lexical entries that can actually be used in syntax. These two lexical rules can inherit from a common supertype and therefore their commonalities are captured. We thus have the very same situation as we have with Constructions in which a lexical entry can be

plugged into one of two related Constructions, the only thing that is different is that everything happens one level deeper, namely in the lexicon.

7.4 Small Clauses

Many authors have proposed Small Clause analyses for some or all phenomena handled in Chapters 2.2.8, 5, and 6 (Kayne, 1985; Hoekstra, 1988; Grewendorf, 1990; Wilder, 1991, 1994; and others). The assumption of these Small Clause analyses is that a certain predicate combines with its subject to form a (small) clause. This Small Clause is embedded by a higher head. The subject may or must later move to positions in domains of higher heads.

Such analyses are problematic for several reasons that have been discussed in the literature (Bresnan, 1982a, Section 9.6; Williams, 1983; Booij, 1990, p. 56; Hoeksema, 1991a; Neeleman and Weermann, 1993; Neeleman, 1994, 1995; Pollard and Sag, 1994, Chapter 3.2; Stiebels, 1996, Chapter 10.2.3; Winkler, 1997, Chapter 2.1). Many arguments for Small Clauses either do not apply to a theory like the one suggested in this book or are empirically incorrect (see for instance the discussion of the embedding of *it* under *consider* on page 84). I will not repeat the arguments against Small Clauses here, but instead focus on interactions that such an analysis would have with the analyses of phenomena that have been discussed in this book so far.

7.4.1 Constituent Order: Movement vs. Base Generation

In Chapter 1, I showed how the order of constituents can be analyzed in the HPSG framework. What I suggested was a linearization-based analysis of the German clause. The positioning of the elements in the *Mittelfeld* is, in certain respects, similar to a base generation approach in GB, the similarity being that the ordering of the elements in the *Mittelfeld* is assumed to be different from processes that describe fronting. For fronting, I suggested an extraction analysis modeled by the nonlocal feature mechanism. This is what comes closest to movement in GB, although there are important differences. The information about extracted elements is present at every intermediate node between the filler and the gap and therefore it can be explained why certain languages have elements that show different inflection when they are in the middle of a nonlocal dependency (Bouma, Malouf, and Sag, 2001).¹¹

In all examples in (893), complex predicates are formed. The arguments of the lower predicates are attracted by the higher one and can be serialized according to the linear precedence constraints since they are dependents of the same head and therefore members of the same head domain.

¹¹The analysis that Bouma, Malouf, and Sag (2001) assume for nonlocal dependencies differs from those discussed in this book in that they assume a lexical amalgamation of SLASH elements. Such a treatment is not necessary to capture the phenomena that were discussed by the authors and it has unwanted side effects that make a change of the feature geometry necessary. See Bouma, 1996 on the latter point.

- (893) a. weil ihn niemand singen hörte.
because him-ACC nobody-NOM sing heard
'because nobody heard him sing.'
- b. daß ihn (den Erfolg) uns niemand auskosten ließ.¹²
that it-ACC the success us-ACC nobody-NOM enjoy let
'that nobody let us make the most of it.'
- c. weil ihm niemand helfen ließ.
because him-DAT nobody-NOM help let
'because nobody had somebody help him'
- d. daß ihn niemand leer fischt.
that it-ACC nobody-NOM empty fishes
'that nobody fishes it empty.'
- e. daß ihn niemand klug findet.
that him-ACC nobody-NOM smart finds
'that nobody finds him smart.'
- f. daß ihn niemand anlacht.
that him-ACC nobody-NOM PART (at).laughs
'that nobody smiles at him.'

If one assumed a Small Clause analysis for these sentences, one would have to explain the orderings in (893) by the assumption of discontinuous maximal projections (see Chapter 2.3.1 for some discussion) or by some extraction-like movement process. Kiss (2001) shows that movement-based analyses of scrambling have problems in accounting for German scope facts.

7.4.2 Passive

As we have seen in the discussion of the remote passive, the passive can access arguments that are raised from deeper embedded heads. The passives in (894) are similar to the remote passive in that an element that is raised from a deeper head is promoted to subject.

- (894) a. daß er leer gefischt wurde.
that he empty fished was
'that it was fished empty.'
- b. daß er klug gefunden wurde.
that he smart found was
'that he was found smart.'
- c. daß er angelacht wurde.
that he PART (at).laughed was
'that he was smiled at.'

¹²Haider (1991, p. 5) attributes a similar example to Tilman Höhle. See also Haider, 1990a, p. 136.

In an HPSG adaptation of the Small Clause approach, this could not be captured since passive is not analyzed as movement in constraint-based theories. If extraction of Small Clause subjects were involved, they would be represented in SLASH, a feature that does not play a role in passivization.

Having discussed some differences between Small Clause analyses and the analysis suggested in this book, I end the discussion of alternatives and turn to a summary of the book in the next chapter.

Summary

In this book, I presented analyses for auxiliaries, subject and object control verbs, subject and object raising verbs, copula constructions, subject and object predicative constructions, depictive predicates, resultative predicate constructions, and particle verbs.

The depictive predicates were analyzed as adjuncts. They share with control verbs the property that the semantic connection between the involved predicates is established via coindexing rather than syntactic and semantic identity of phrases: In control constructions, the controller is coindexed with the controllee and in structures with depictive predicates, the subject of the depictive predicate is coindexed with its antecedent.

For copula constructions, subject and object predicative constructions, resultative predicate constructions, and particle verbs, I suggested a complex predicate analysis whereby the embedded predicate or the particle is selected via a special valence feature (XCOMP). An extensive discussion of data showed that these constructions behave similarly to coherent verbal constructions as far as fronting, scrambling, intraposition, extraposition, and passivization is concerned. This insight can be captured by proposing a similar representation for these complex predicates. The difference between the constructions can be explained since the way such complex predicates are licensed differs: For copula constructions and subject and object predicative constructions, lexical entries that select for a predicate are provided in the lexicon. Resultative constructions involve lexical entries that are licensed by lexical rules. Particle verbs either have a lexical entry since the respective particle verb does not belong to a productive pattern, or they are a combination of a lexical entry that is licensed by a general lexical rule and the appropriate particle if they follow a productive pattern.

The verbal heads of resultative constructions and of particle verbs that follow a productive pattern are licensed by lexical rules. Since this formation is assumed to happen in the lexicon, it is explained why resultative constructions and particle verb combinations may drift semantically and later get lexicalized with an idiomatic non-transparent reading. Verbal heads of resultative constructions and of particle verbs that follow a productive pattern have a syntactic representation

that is very similar to the one non-transparent particle verbs have. The only difference is that non-transparent particle verbs are further specified for the particle they select.

I have shown that the constructions discussed can undergo derivations. There is a hierarchy of morphological activeness, but it is clear that verbal heads of particle verbs that belong to a productive pattern and verbal heads of resultative predicates can enter derivational morphology. I developed an analysis of inflection and derivation in which all affixes are combined with the verbal stem before the particle or resultative predicate is combined with the base verb or the stem that is derived from the base verb. I demonstrated that bracketing paradoxes do not exist for this analysis and that devices as powerful as rebracketing are not needed.

The analyses are partly implemented in two fragments of German. The first fragment is the Babel-System¹ grammar (Müller, 1996b), and the second one is the grammar that was developed for *Verbmobil* and that is currently being used in the Whiteboard project at the DFKI.

¹<http://www.dfki.de/~stefan/Babel/>

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