

German Adverbial Adjectives: Syntactic Position and Semantic Interpretation

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Abbreviations and notational conventions

Conventions used in the glosses:

1. German adverbial adjectives are not glossed with English adjectives, but with the corresponding adverbs (e.g., the adjective *sorgfältig* in its use as an adverbial is glossed with ‘carefully’ and not with ‘careful’).
2. Morphological marking for case, number and gender is only glossed when this information is relevant for the discussion at hand.
3. When the gloss itself already yields a good English translation of the source sentence, no free translation is given.
4. Ungrammatical sentences are glossed but not translated.

Abbreviations:

NOM = nominative case

GEN = genitive case

ACC = accusative case

EFF = effective case

DEM = demonstrative pronoun

NEG = negation

PASSP = passive participle

PL = plural

SG = singular

FEM = feminine

MASC = masculine

Chapter 1

Introduction

1.1 Scope and aim

The topic of this work are German adverbial adjectives. The starting point for this investigation is the question of what these adverbials contribute to sentence meaning and the extent to which this contribution depends on their syntactic position within a sentence. Special attention is given to those adverbial usages that are traditionally understood as manner modification.

German adverbial adjectives are adjectives that are used as adverbials. Examples for typical occurrences of the adverbials of interest are given in (1), where the adverbials are printed in boldface.

- (1) a. Sie hat **laut** gesungen.
She has loudly sung
'She sang loudly.'
- b. Der Zug fuhr **schnell**.
The train drove fast
'The train drove fast.'
- c. Er löste die Aufgabe **intelligent**.
He solved the problem intelligently
'He solved the problem intelligently.'

The meaning contribution of adverbial adjectives to the sentence meaning cannot be subsumed under a single cover term. Different usages must be distinguished. In (1), for example, the adjectives are used as manner adverbials. Their contribution to the sentence meaning consists in specifying the manner in which the actions referred to by the verbal predicate are carried out. Examples for other usages include adjectives serving as mental attitude adverbials, cf. (2-a), or adjectives serving as frame adverbials, cf. (2-b).

- (2) a. Martha geht **widerwillig** zur Schule.
Martha goes reluctantly to school

- ‘Martha goes to school reluctantly.’
- b. Wir wissen, daß **wirtschaftlich** die USA den Krieg gewonnen haben.
We know, that economically the USA the war won
‘Economically, the United States won the war.’

Roughly, mental attitude adverbials characterize the mental attitude of the agent of a sentence, while frame adverbials limit the domain in which the proposition expressed by the rest of the sentence holds.

A single adjective may have different adverbial usages or different adverbial readings. An example is the adjective *wirtschaftlich* ‘economically’, which functions in (2-b) as a frame adverbial, but may also serve as a method-oriented adverbial, cf. (3).

- (3) Dieses Problem ist nur **wirtschaftlich** zu lösen.
This problem is only economically to solve
‘This problem can only be solved economically.’

Wirtschaftlich ‘economically’ in (3) specifies a set of methods, namely economic methods, with which the problem referred to by the subject noun phrase cannot be solved.

These different adverbial usages of adjectives interact with the syntactic position of the adjectives, cf. e.g. (4).

- (4) a. Wir wissen, daß **wirtschaftlich** die USA den Krieg gewonnen haben.
We know, that economically the USA the war won
‘Economically, the United States won the war.’
- b. *Wir hörten, daß **laut** die Leute nach Hilfe gerufen haben.
We heard, that loudly the people for help screamed have

The position before the subject is possible for the frame adverbial *wirtschaftlich* ‘economically’, but not for the manner adverbial *laut* ‘loudly’.

These characteristics of adverbial adjectives lead to the main questions to be dealt with in this work:

- (a) What different adverbial usages of adjectives can be distinguished?
(b) Which usages are tied to which syntactic positions?
(c) How can different usages of adverbial adjectives be formally analyzed?

In pursuing answers to these questions, manner usages of adverbial adjectives, along with other usages, referred to as associated readings, will stand at the centre of investigations. The reason for this is that the manner usage seems to be the core usage for adverbial adjectives, although exact definitions of what it means to be a manner adverbial are difficult to find. In addition, the syntactic positioning of manner adverbials in German is the subject of some controversy, since it is unclear whether they are positioned before or after the direct object. By trying to give a more adequate definition of manner adverbials and answering the question of their syntactic positioning, the importance of a clear description of associative readings becomes immediately apparent.

1.2 Organization

The dissertation consists of eight chapters. In chapter 2, I explain my usage of the terms *adjective*, *adverb* and *adverbial* and give a short overview of the standard semantic approaches to adverbial modification.

Chapter 3 aims for a classification of the different usages of adverbial adjectives with the help of semantic criteria. I first introduce two subclasses of manner adverbials, namely pure manner adverbials and subject-oriented manner adverbials. These usages are then differentiated from method-oriented and degree adverbials, as well as the usage of adjectives as resultatives, depictives and implicit resultatives. I also discuss the incompatibility of manner adverbials with stative verbs. Other, non-manner, usages of adverbial adjectives are then discussed: mental-attitude adverbials, event-external adverbials, subject-oriented adverbials, speaker-oriented adverbials and frame adverbials. At the end of the chapter, I contrast my classification with two approaches to the classification of the different usages of English *-ly* adverbs.

In chapter 4, I introduce and discuss syntactic tests that can be used to determine syntactic base positions in German. Furthermore, I show how these tests can be applied to adverbial adjectives. It turns out that many of the different usages distinguished in chapter three are restricted to specific syntactic base positions.

In the chapter 5, I examine the base position of manner adverbials in detail. In the literature, either a position before or after the direct object is favoured. I show that the tests introduced in the previous chapter do not provide enough evidence to clearly establish a single base position. I argue that a number of factors influence the positioning of the adverbial relative to the direct object, among them the availability of associative readings, cohesion effects and specific properties of the direct object (definiteness and quantification).

In chapter 6, I investigate scope effects that can occur when a manner modifying adjective and an additional adverbial in its syntactic scope appear in the same sentence. I argue that in order to deal with these effects within an event-based conjunctive analysis, the lexical entries of those adjectives that display scope-sensitivity must contain two separate context parameters.

Chapter 7 deals with the formal analysis of associative readings. I argue that they can be derived by using an approach based on underspecification.

Chapter 8 summarizes the results of this study and points to questions left unanswered.

Chapter 2

Terminology and theoretical background

2.1 Terminology

The section on terminology (a) explains my usage of the terms *adverbial*, *adjective* and *adverb* and (b) argues for the classification of the wordforms of interest in this work as *adverbial adjectives* as opposed to the alternative classification as *adjectival adverbs*.

2.1.1 Defining adverbials

The term *adverbial* is used in this work to refer to a syntactic function. Other syntactic functions are subject, object, particle, predicative and verb. My understanding of these terms is illustrated in (1) and (2).¹

- (1) [Im Wald]_{adverbial} findet_{verb} Peter_{subject} auch_{particle} Pilze_{object}.
In.the wood found Peter also mushrooms
'In the wood, Peter found even mushrooms.'

¹The term *verb* does on this usage not refer to the lexical category verb. An alternative for this usage of *verb* is the term *predicate*, cf. for example the usage of the corresponding German term *Prädikat* in Eisenberg (1999, p. 45). However, the term *predicate* is often used as a complementary term for *subject*, that is, a simple sentence is divided into *subject* and *predicate* as in (i), adapted from Huddleston & Pullum (2002, p. 26).

- (i) [A bird]_{subject} [[hit]_{predicator}] [the car]_{object} *predicate*.

As (i) shows, in Huddleston & Pullum's (2002) usage, the term *predicate* refers to the phrase *hit the car*, which is in turn subdivided into the *predicator hit* and the object *car*. In my terminology, the verb corresponds to their term *predicator*.

- (2) Peter_{subject} ist_{verb} klug_{predicative}.
Peter is intelligent

German adverbials can be identified with the help of the four criteria given in (3).

- (3) (i) Adverbials can serve as a *Satzglied* (see definition in (4)).
(ii) The form of the adverbial is not determined by the verb.
(iii) There are no congruency relations between adverbial and verb.
(iv) Adverbials are restricted to a set of semantically limited usages.

The term *Satzglied* is used in German linguistics to refer to clause-level constituents which conform to the following three criteria (cf. e.g. (Pittner 1999, p. 47)):

- (4) (i) A *Satzglied* can be positioned relatively freely in a sentence. More specifically, a *Satzglied* can constitute the *Vorfeld*² ‘prefield’ of verb second sentences on its own.
(ii) A *Satzglied* can be elicited by questions.
(iii) A *Satzglied* can be pronominalized.

These properties of adverbials can be used to differentiate adverbials from other clause-level constituents. Below I will demonstrate this, focussing on the adverbial usage of adjectives.

2.1.1.1 Adverbial vs particle

The first criterion for adverbials given in (3) allows them to be differentiated from particles, which cannot function as *Satzglied*. I will show this by comparing the behaviour of the modal particle *halt* ‘just so’ and the focus particle *sogar* ‘even’ to the adverbial adjective *laut* ‘loudly’. Beginning with the first condition for *Satzglied* from the list in (4), it turns out that adverbials as well as particles can be positioned quite freely in a sentence, cf. (5-a) for adverbials, (5-b) for modal particles and (5-c) for focus particles. Only the position between subject and auxiliary and the sentence-final position are not possible positions for adverbials.³

- (5) a. Peter (*laut) hat (laut) das Lied (laut) gesungen (*laut).
Peter (loudly) has (loudly) the song (loudly) sung (loudly)
‘Peter sang the song loudly.’
b. Peter (*halt) hat (halt) das Lied (halt) gesungen (*halt).
Peter (just.so) has (just.so) the song (just.so) sung (just.so)
‘Just so, Peter sang the song.’

²The term *Vorfeld* is taken from classic German topological theory. For introductory accounts, cf. e.g. Grewendorf, Hamm & Sternefeld (1989, p. 213ff) or Eisenberg (1999, p. 384ff).

³In the terms of topological theory, these are the position between *Vorfeld* ‘prefield’ and *linke Klammer* ‘left bracket’ and the position after the *rechte Klammer* ‘right bracket’, which is usually constituted by the infinitive verb.

- c. Peter (*sogar) hat (sogar) das Lied (sogar) gesungen (*sogar).
 Peter (even) has (even) the song (even) sung (even)
 ‘Peter even sang the song.’

However, the critical condition, namely the availability to constitute the Vorfeld of a verb second sentence, is only fulfilled by the adverbial, not by particles, cf. (6-a) vs (6-b) and (6-c).⁴

- (6) a. **Laut** hat Peter das Lied gesungen.
 Loudly has Peter the song sung
 ‘Loudly, Peter sang the song.’
 b. * **Halt** hat Peter das Lied gesungen.
 Just.so has Peter the song sung
 c. * **Sogar** hat Peter das Lied gesungen.
 Even has Peter the song sung

The second condition from the list in (4), the possibility of elicitation by questions, is again fulfilled only by *laut* ‘loudly’, not by *halt* ‘just so’ and *sogar* ‘even’. The question-answer pair in (7) shows the elicitation of *laut* ‘loudly’ with the help of the question *Wie ... ?* ‘How ...?’.

- (7) a. Wie hat Peter das Lied gesungen?
 ‘How did Peter sing the song?’
 b. **Laut.**
 ‘Loudly.’

The third condition, pronominalization, cannot be directly applied to the adverbials under investigation, since they are not nominals nor do they contain nominals. However, the adverbial can be expressed by a deictic adverbial, for example *so* ‘in this manner’, cf. (8).

- (8) Peter hat den Feind **so** abgewehrt.
 Peter has the enemy in.this.way warded.off

⁴A limited number of particles can be used in the prefield, cf. e.g. (i).

- (i) a. **Auch** hat Peter das Lied gesungen.
 Also has Peter the song sung
 ‘In addition, Peter sang the song.’
 b. **Nur** hat Peter das Lied gesungen.
 Only has Peter the song sung
 ‘But it is the case that Peter sang the song.’
 c. **Jedoch** hat Peter das Lied gesungen.
 However has Peter the song sung
 ‘However, Peter sang the song.’

These usages are marginal and semantically ill-understood. I therefore exclude them from further discussion.

‘Peter warded off the enemy in this way.’

To interpret (8) successfully, the utterance of *so* ‘in this way’ must be accompanied by some gesture specifying the manner of Peter’s action. A deictic reference to a particle is not possible.

Of the three conditions for Satzglied, the first and the second are clearly met by adverbials, and the last at least partly. On the other hand, particles do not meet any of the three conditions.

2.1.1.2 Adverbial vs subject

The difference between a subject and an adverbial is relatively easy to establish due to congruency relations between subject and verb, a phenomenon not exhibited by adverbials. In German, the subject and the verb must agree in number. In cases where no such congruency exists, for example when clauses serve as subjects, subjects always carry the thematic role assigned by the verb and are obligatory in the active voice (cf. the next section for more on thematic roles). Furthermore, subjects can always be elicited by using the *w*-questions *wer/was* ‘who/what’, adverbials never can be elicited by these *w*-questions.

2.1.1.3 Adverbial vs object

I now discuss the differentiation between adverbials and objects in two steps. First, I address the cases of free adverbials vs objects. Secondly, I cover instances where the adverbial is subcategorized for by the verb.

Free adverbials vs objects The differentiation between free adverbials and objects revolves around the second point in the list of criteria in (3): the form of the adverbial is not determined by the verb. German transitive verbs, for example, select for an object either in the accusative or in the dative case, cf. (9) and (10).

(9) Fritz hat **den** **Kuchen** gegessen.
Fritz has the.ACC cake eaten
‘Fritz ate the cake.’

(10) Das Spiel gefällt **dem** **Jungen**.
The.NOM game pleases the.DAT boy.DAT
‘The game pleases the boy.’

In contrast, if a noun phrase serves as an adverbial, its case-marking is independent of the verb. For example, noun phrases in the accusative case can serve as temporal adverbials, specifying a time span. Their case-marking is not affected by the choice of verb, cf. (11) and (12).

- (11) Fritz hat **den ganzen Tag** den Kuchen gegessen.
 Fritz has the.ACC whole.ACC day the.ACC cake.ACC eaten
 ‘Fritz ate the cake for the whole day.’
- (12) Das Spiel gefällt dem Jungen **den ganzen Winter**.
 The.NOM game.NOM pleases the.DAT boy.DAT the.ACC whole.ACC
 winter.ACC
 ‘The game pleases the boy for the whole winter.’

This criterion already suffices to distinguish optional adverbials from objects. However, the relationship between object and verb is not limited to form, but also concerns other factors. To explicate this, I assume with Jacobs (1994) a multi-dimensional conception of valency, which differentiates between four different conditions for complements X of Y:

- (13) (i) X is obligatory for Y, i.e. it must be realized.
 (ii) X is specific for Y with respect to its form (e.g. X is case-marked).
 (iii) X is specific for Y with respect to its content (e.g. X must be [+volitional] etc.).
 (iv) X is an argument, filling an open position in the meaning of Y.

Free adverbials do not fulfill any of the conditions in (13). Objects may optionally conform to (13–i), but, as we have seen, must conform to (13–ii). In addition, they conform also to (13–iii) and (13–iv). Thus, some verbs require their object to be sentient, e.g. *quälen* ‘torment’, cf. (14).

- (14) a. Peter quälte **den Mann**.
 Peter tormented the man.
 b. *Peter quälte **den Stein**.
 Peter tormented the stone.

The argumenthood of objects can be demonstrated with the help of (a) thematic roles and (b) tests for argumenthood. Thematic roles are semantic relations that a noun phrase may carry based on the involvement of the entity denoted by the noun phrase in the action denoted by the verb. Classic thematic roles are agent, patient, beneficiary etc. A German verb can select for up to three thematic roles, one for the subject, one for the direct object and one for the indirect object.⁵ This also accounts for the limitation of the numbers of objects in a clause to two. The relation between an object

⁵This is a slight simplification, since there are also verbs which select for up to four thematic roles, cf. (i).

- (i) Peter fährt ihm das Rad nach Hause.
 Peter rides him the bicycle to home
 ‘Peter rides the bicycle back home for him.’

and its thematic role is always stable; that is, if the thematic role *patient* is assigned to the direct object of a verb, then this thematic role (a) remains unexpressed if the direct object is not realized and (b) cannot be realized by the indirect object. In German, the *geschehen/tun*-test is often used to establish argumenthood (cf. (Engelberg 2000b, p. 88ff)). Thus, the impossibility to paraphrase (15-a) by (15-b) is argued to establish the direct object *der Mann* ‘the man’ as an argument of the verb *töten* ‘kill’.

- (15) a. Fritz tötet **den Mann**.
Fritz kills the man.
b. *Fritz tötet, und das geschieht/tut er den Mann.
Fritz kills, and that happens/does he the man

In contrast, the very same test shows that the instrumental adverbial *mit dem Gewehr* ‘with a gun’ is not an argument of the verb *töten* ‘to kill’.

- (16) a. Fritz tötet **mit dem Gewehr**.
Fritz kills with the gun.
b. Fritz tötet, und das geschieht/tut mit dem Gewehr.
Fritz kills, and that happens/does he with the gun

To conclude, objects, in contrast to free adverbials, usually fulfill at least three of the conditions given in (13).

Subcategorized adverbials vs objects Some verbs subcategorize for adverbials. The verb *wohnen* ‘live’, for example, subcategorizes for either a location (answering the question *Where do you live?*) or a certain mode of living (answering the question *How do you live?*), cf. (17) and (18), respectively.

- (17) Fritz wohnt **in Landau/in der Parkallee**.
Fritz lives in Landau/in the Parkallee
(18) a. Fritz wohnt **schön/mit allem Komfort**.
Fritz lives nicely/with all comfort
b. Fritz wohnt **zur Miete/billig**.
Fritz lives for rent/cheaply
‘Fritz lives for rent/for little rent.’

A sentence without either of the two adverbial modifiers is felt to be infelicitous, cf. (19).

- (19) *Fritz wohnt.
Fritz lives

In (i), the prepositional object carries the thematic role direction and the indirect object the thematic role of beneficiary. It is not clear whether the indirect object in such sentences has argument status or not. In the following, I will not consider these cases.

As *schön* ‘nicely’ and *billig* ‘cheaply’ in (18) show, adverbial adjectives can be used to fulfill subcategorization requirements. Sometimes, verbs exclusively subcategorize for adverbial adjectives, cf. (20).

- (20) a. Er benimmt sich **gut/schlecht**.
 He behaves himself good/bad
 b. Er riecht **gut**.
 He smells good
 c. Er gebärdet sich **merkwürdig**.
 He acts himself strangely
 ‘He acts strangely.’

These adverbials can in some cases be dropped. For the three verbs in (20), this seems possible for *sich benehmen* ‘behave oneself’ and *riechen* ‘smell’, but not for *sich gebärden* ‘act’, cf. (21-a) and (21-b) vs (21-c).

- (21) a. #Fritz benimmt sich (gut).
 He behaves himself (well)
 ‘He behaves himself.’
 b. #Jürgen riecht (schlecht).
 He smells (bad)
 ‘He smells.’
 c. *Er gebärdet sich.
 He acts himself

The # on both (21-a) and (21-b) indicates that the sentences are interpreted in the same way as the sentences with the adverbial given in parentheses added. This makes the relationship between the verbs in (21) differ from e.g. the relationship between the verb *essen* ‘to eat’ and its optional object, cf. (22).

- (22) Fritz ißt.
 Fritz eats.

In (22), although Fritz is certainly eating something, this ‘something’ is not implicitly specified.

If we resort to the criteria of form specificity, we could still argue that case-marking distinguishes between objects and adverbials here, but this seems hardly an adequate criterion, as the adverbials discussed do not allow any case-marking, since they are not realized as noun phrases. The criteria for complementhood given in (13) and repeated in (23) are again a better guide, and it is useful to go through them step by step.

- (23) (i) X is obligatory for Y, i.e. it must be realized.
 (ii) X is specific for Y with respect to its form (e.g. X is case-marked).
 (iii) X is specific for Y with respect to its content (e.g. X must be [+volitional] etc.).

- (iv) X is an argument, filling an open position in the meaning of Y.

Similar to objects, subcategorized adverbials may or may not be obligatory, that is, (23–i) may or may not hold. As already said, (23–ii) does not hold, but this is due to the phrasal categories of the adverbials under discussion. The third criterium, (23–iii), is fulfilled by the adverbials: the subcategorization for *sich benehmen* ‘behave oneself’, e.g., cannot be fulfilled by any adverbial: local or temporal adverbials cannot be used for this purpose. This leaves us with (23–iv).

If we use the *geschehen/tun* test introduced in example (15), we arrive at the conclusion that these adverbials are arguments, cf. (24) for *riechen* ‘smell’ and (25) for ‘behave oneself’.

- (24) *Fritz riecht, und das tut er/geschieht schlecht/gut/unerträglich.⁶
‘Fritz smells, and that he does/happens bad/good/unbearable.’

- (25) *Doris benimmt sich, und das tut sie/geschieht gut/schlecht/unmöglich.
Doris behaves herself, and that does she/happens good/bad/impossible

A further argument for argumenthood is that the thematic role that an argument bears must be determined by the verb. For the adverbials under investigation this point is problematic. Standard accounts of thematic role systems assume that thematic roles allow the differentiation of entities, cf. the following quote from Dowty (1989).

When I say that a thematic roles system distinguishes one argument from another semantically, I mean that it permits (real-world, non-linguistic) objects to be distinguished from one another by virtue of the distinctive properties they have as they participate in an event named by a verb, properties that can be identified (“in the real world”) independently of a language or its “semantic representations. (p. 73)

Clearly, this view of thematic roles excludes adverbials from being assigned one, since they do not denote objects. To include adverbials, the term *object* would have to be augmented to encompass also directions, manners etc.

However, just as the assignment of thematic roles to objects results in a stable semantic contribution of the objects to the sentence, so are the semantic contributions of subcategorized adverbials semantically stable. Thus, although the adverbial subcategorized for by *sich benehmen* ‘behave oneself’ can be realized as adjectives, cf. (26), or comparison clauses, cf. (27), the semantic contribution is stable: it always specifies the manner of the agent’s behaviour, and consequently answers the question *How ... ?*

- (26) Doris benimmt sich **gut/schlecht/unerträglich/unmöglich**.
Doris behaves herself good/bad/unsustainable/impossible
‘Doris behaves well/badly/unsustainably/impossibly’

⁶The sentence *Fritz riecht, und das tut er schlecht/gut* is grammatical if it is interpreted as *Fritz kann gut/schlecht riechen* ‘Fritz is good/bad at smelling’.

- (27) a. Doris benimmt sich **wie ein Trottel**.
 ‘Doris behaves like an idiot’
 b. Doris benimmt sich, **als ob es hier einen Preis zu gewinnen gibt/als ob sie der Chef wäre**.
 ‘Doris behaves as if there were a price to win/as if she were the boss’

The phenomenon of verbs subcategorizing for adverbials is not limited to German. In English, often cited examples include *word*, *phrase*, *treat* and *behave*, cf. e.g. the remarks in Huddleston & Pullum (2002, p. 574) and the minimal pair in (28).

- (28) a. *Pat behaved to Chris.
 b. Pat behaved **badly** to Chris.
 = (65) in Goldberg & Ackerman (2001)

2.1.1.4 Adverbial vs predicative

In German, the difference between adverbials and predicatives is extremely difficult to establish. Predicatives, just as adverbials, can be either obligatory, cf. (29), or optional, cf. (30).

- (29) a. Hunde sind **dumm**.
 Dogs are stupid.
 b. *Hunde sind.
 Dogs are
- (30) a. Fritz wurde **jung** Vater.
 Fritz became young father
 ‘Fritz had a child at an early age.’
 b. Fritz wurde Vater.
 ‘Fritz had a child.’

As the examples show, both types of predicatives can be realized by adjectives. The construction with *dumm* ‘stupid’ in (29) is parallel to constructions where the copula combines with noun phrases in the nominative case or prepositional phrases specifying the location, cf. (31) and (32), respectively.

- (31) Hunde sind **Tiere**.
 Dogs are animals.
- (32) Fritz ist **in Berlin**.
 Fritz is in Berlin.

In grammars of German, both *dumm* ‘stupid’ in (29) and *Tiere* ‘animals’ in (31) are standardly called *Prädikatsnomen* ‘predicative noun’ (cf. e.g. Eisenberg (1999, p. 85)).

Syntactically and morphologically, there are no reasons to consider *dumm* ‘stupid’ in this usage as a predicative and not an adverbial.⁷ As I have shown in section 2.1.1.3, adverbials are also sometimes obligatory and can also be realized by noun phrases, cf. the repeated examples in (33) and (34).

- (33) a. Er gebärdet sich **merkwürdig**.
 He acts himself strangely
 ‘He acts strangely.’
 b. *Er gebärdet sich.
 He acts himself.
 = (20-c), (21-c), page 10
- (34) Fritz hat **den ganzen Tag** den Kuchen gegessen.
 Fritz has the.ACC whole.ACC day the.ACC cake eaten.
 ‘Fritz ate the cake for the whole day’
 = (11), page 7

However, there is a clear semantic difference between adverbials and obligatory predicatives. The fourth criterion for German adverbials, (3–iv) on page 5, states that adverbials are restricted to a set of limited usages. Already in the discussion of adverbials vs subjects, I pointed out that adverbials never answer the question *Who/What ... ?* Obligatory predicatives, on the other hand, answer exactly these questions, cf. (35).

- (35) Was sind Hunde? ‘What are dogs?’
 a. Hunde sind **Tiere**.
 Dogs are animals.
 b. Hunde sind **dumm**.
 Dogs are stupid.

This behaviour with regard to questions is a reflex of the fact that the semantic contribution of the copula *sein* ‘be’ in both sentences is empty. This can also be seen when comparing the sentences in (35) with sentences that seem at first glance similar, cf. (36-a) and (36-b).

- (36) a. Fritz ist **hier**.
 Fritz is here
 b. Die Wahl ist **morgen**.

⁷This stands in stark contrast to the situation in English, where the marker *-ly* morphologically differentiates between predicatives and adverbials, cf. e.g. (i).

- (i) a. Dogs are stupid.
 b. He answered stupidly.

The election is tomorrow

The adverbs *hier* ‘here’ or *morgen* ‘tomorrow’ (for more on the lexical category *adverb*, cf. section 2.1.2.2) in (36) both fulfill typical adverbial functions, specifying the place and the time, respectively. However, *sein* ‘be’ carries in both instances a distinct meaning contribution, in (36-a) *sich befinden* ‘located at’ and in (36-b) *stattfinden* ‘take place’.

In the case of free predicatives, the so-called *depictives*, a syntactic distinction between them and adverbials is also impossible.⁸ Even with the help of semantics the distinction is very difficult. To see this, consider (37-a) vs (37-b).

- (37) a. Fritz starb **langsam/enthusiastisch**.
 Fritz died slowly/enthusiastically
 b. Fritz starb **jung/krank**.
 Fritz died young/sick

Traditionally, *langsam* ‘slowly’ and *enthusiastisch* ‘enthusiastically’ in (37-a) are considered to be adverbials, while *jung* ‘young’ and *krank* ‘sick’ in (37-b) are considered to be depictives. The adverbials in (37-a) answer the question in (38), those in (37-b) the question in (38-b-i) and (38-b-ii), respectively.

- (38) a. How did Fritz die?
 b. (i) When did Fritz die?
 (ii) Under what circumstances did Fritz die?

Neither question in (38-b) indicates that the element questioned does not serve as an adverbial. The problem of distinguishing between free predicatives and adverbials will be discussed in more detail in chapter three, section 3.2.5.2.

2.1.1.5 Conclusion

The aim of this section on adverbials was twofold: On the one hand, I explained my usage of the term *adverbial* as referring to a particular syntactic functions. On the other hand, I have shown how this syntactic function can be differentiated from the other syntactic functions.

The deciding characteristic that distinguishes adverbials from particles is the fact that only the former, but not the latter, can serve as Satzglied.

Subjects can be distinguished from adverbials on the one hand, due to their congruency relation to the verb, and on the other, due to their semantic usage: They answer the question after *what/who*.

⁸Pittner (1999, p. 98) explicitly states that a syntactic differentiation between free predicatives and adverbials is not possible (For a similar view, cf. the closing remarks in Geuder (2004)). Eisenberg (1999, p. 223f) contains some discussion that hints at a structural difference between what Eisenberg calls ‘typical verb-related’ and ‘typical subject-related adjectives’. This is refuted in Pittner (1999, p. 98).

Objects can be distinguished from free adverbials quite easily, since only objects stand in a special relation to the verb: they are arguments and carry a specific thematic role. The differentiation between objects and adverbials that are subcategorized for by the verb is more difficult, since these adverbials also fulfill standard criteria for argumenthood.

In the next section, I will turn to the question of the wordclass into which the boldfaced words of (38) should be categorized.

2.1.2 Adjectival adverbs vs adverbial adjectives

In my view, the items under investigation in this work are best referred to as adverbial adjectives.⁹ In the literature, there exists also an alternative classification, namely *adjectival adverbs* (*Adjektivadverb(i)en*, cf. Helbig & Buscha (2001, p. 313) or Hentschel & Weydt (1994, p. 182)). In this section, I will argue for the former classification.

Before addressing the question directly, I will give short definitions of adjectives and adverbs, followed by illustrations of their main characteristics.

2.1.2.1 Adjectives

A definition for the wordclass *adjective* is given in (39).

- (39) Adjectives form a lexical category that is defined by the following characteristics: Adjectives canonically appear in attributive and predicative position, have comparison forms, and are inflected for gender, number and case as required by agreement with their head noun.

These properties can easily be demonstrated, cf. (40) for the usage of the adjective *schnell* ‘fast’ in predicative position, and (41) for the same adjective in attributive position.

- (40) Der Hund ist **schnell**.
The dog is fast

- (41) der **schnelle** Hund
the fast dog

The comparison forms are the comparative, cf. (42-a) and the superlative, cf. (42-b), demonstrated in the attributive position.

- (42) a. der **schnellere** Hund
the faster dog
b. der **schnellste** Hund
the fastest dog

⁹For similar views, cf. Heidolph, Flämig & Motsch (1981, p. 621ff.), Eisenberg (1999, p. 220f.), Engel (1996, p. 754) and Pittner (1999, p. 59f.).

Inflection for case, gender and number in agreement with the head noun is shown in (43), (44) and (45), respectively.¹⁰

- (43) a. der **schnelle** Läufer
the.NOM fast.NOM runner.NOM
b. des **schnellen** Läufers
the.GEN fast.GEN runner.GEN

As the contrast between the noun phrase in the nominative case in (43-a) and the noun phrase in the genitive case in (43-b) shows, the wordform of *schnell* ‘fast’ agrees with the case of the head noun. Agreement for gender is shown in (44), where both noun phrases are in the nominative case. In addition, (44-a) is grammatically marked as masculine, whereas the head noun in (44-b) is grammatically feminine (in this particular case agreeing with its natural gender).

- (44) a. ein **schneller** Läufer
a.MASC fast.MASC runner.MASC
b. eine **schnelle** Läuferin
a.FEM fast.FEM runner.FEM

Finally, (45), again with both noun phrases in the nominative case, shows number agreement. In (45-a), the head noun is singular, whereas in (45-b), it is in the plural. Accordingly, the word-form of *schnell* ‘fast’ changes.

- (45) a. ein **schneller** Zug
a.SG fast.SG train.SG
b. **schnelle** Züge
fast.PL trains.PL

2.1.2.2 Adverbs

German adverbs can be defined as in (46).

- (46) Adverbs form a lexical category characterized by the following five properties:
- (i) Adverbs cannot be inflected.
 - (ii) They can be used as Satzglied.
 - (iii) They can carry the sentence accent.
 - (iv) They are mono-lexematic, that is, they are not phrasal.¹¹
 - (v) They cannot be used as subjects.

¹⁰It is demonstrated with the help of three minimal pairs, because morphological marking in German is heavily underspecified. A single inflectional suffix out of a very limited repertoire of suffixes is used to mark case, number and gender. Note also that the glosses only give the grammatical information relevant for the discussion, but not full specifications (as in e.g. runner.NOM.SG.MASC).

Cf. the definition of adverbs in Schmöe (2002, p. 159)

For German, two groups of adverbs can be distinguished. Firstly, there is a closed classed group of adverbs, which are commonly subclassified into the four categories of local, temporal, modal and degree adverbs, cf. (47) (cf. e.g. (Eisenberg 1999, p. 205)).

- (47) LOCAL: oben ‘above’, hinten ‘behind’, hier ‘here’
 TEMPORAL: bald ‘soon’, eben ‘just’, immer ‘always’
 MODAL: gern ‘gladly’, kaum ‘hardly’, vielleicht ‘perhaps’
 DEGREE: sehr ‘very’, ganz ‘completely’, weitaus ‘by far’

Secondly, adverbs can be productively derived from adjectives via the suffix *-weise*, cf. (48).

- (48) *-weise* suffixation:
 intelligent → intelligenterweise ‘intelligently’
 arrogant → arroganterweise ‘arrogantly’
 normal → normalerweise ‘normally’

As far as their syntactic functions, derived adverbs and modal adverbs are the most restricted, as they can neither be used predicatively nor attributively, cf. (49) and (50), respectively.

- (49) a. *der **intelligenterweise** Kämpfer
 the intelligently fighter
 b. *Er ist **intelligenterweise**.
 He is intelligently

- (50) a. *der **vielleicht** Kämpfer
 the perhaps fighter
 b. *Er ist **vielleicht**.
 He is perhaps

Of the other adverbs, local and temporal adverbs can be used predicatively but not attributively, cf. (51) for local adverbs, (52) for temporal adverbs.¹²

¹¹Schmöe, following Müller (1997), regards idiomatic pairings, e.g. *samt und sonders* ‘completely’, also as mono-lexematic.

¹²All of the adverbs have derived adjectival cognates that can be used in this position, cf. (i).

- (i) a. Der **hiesige/dortige** Kampf
 the here/there fight
 ‘the fight here/there’
 b. der **jetztige/baldige/morgige** Kampf
 the now/soon/tomorrow fight
 ‘The fight now/The speedy fight/The fight tomorrow’

- (51) Er kämpft **hier/dort**.
 He fights here/there
- a. *der **hier/dort** Kampf
 the here/there fight
- b. Er ist **hier/dort**.
 He is here/there
- (52) Er kämpft **jetzt/bald/morgen/oft/kaum**.
 He fights now/soon/tomorrow/often/seldom
- a. *der **jetzt/bald/morgen/oft/kaum** Kampf
 the now/soon/tomorrow/often/seldom fight
- b. Das Fest ist **jetzt/bald/morgen**.
 The party is now/soon/tomorrow

Degree adverbs can usually not stand on their own, but rather they modify other adjectives or adverbs.

- (53) a. *Er ist **sehr/höchst/äußerst**.
 He is very/supremely/utmost
- b. *der **sehr/höchst/äußerst** Fridolin
 the very/supremely/utmost Fridolin
- (54) a. Er ist **sehr/höchst/äußerst** erschöpft.
 He is very/supremely/utmost exhausted
- b. der **sehr/höchst/äußerst** **schöne** Fridolin
 the very/supremely/utmost beautiful Fridolin

Adjectives can also all be further modified by degree adverbs, such as *sehr* ‘very’, *extrem* ‘extremely’ and *besonders* ‘especially’, cf. (55).

- (55) Er kämpfte **sehr/extrem/besonders** laut/langsam/widerwillig/intelligent.
 He fought very/extremely/especially loudly/slowly/reluctantly/intelligently

2.1.2.3 Adjective or Adverb?

The question as to whether *schnell* ‘fast’ in examples such as (56) is an adjective or an adverb cannot be decided by the criteria given so far.

- (56) Fritz läuft **schnell**.
 Fritz runs fast

In this usage, *schnell* is not inflected for gender or number, cf. (57).

- (57) a. Sie/Er/Es läuft **schnell**.
She/He/It runs fast
b. Die Leute laufen **schnell**.
The people run fast.

In (57-a), the morphological form of *schnell* stays the same, although the grammatical gender of each of the pronouns is masculine, feminine and neuter, respectively. Similarly, the same morphological form of *schnell* is used when the subject is in the plural, as in (57-b).

This un-inflected morphological form of *schnell* used in (56) and (57) is referred to in German linguistics as *adjectival short-form* ('Kurzform', cf. e.g. Eisenberg (1999, p. 88) or Heidolph et al. (1981, p. 621)) and is also employed when adjectives are used predicatively, cf. (58).¹³

- (58) a. Sie/Er/Es ist **schnell**.
She/He/It is fast
b. Die Leute sind **schnell**.
The people are fast.

Proponents of the view that *schnell* 'fast' in (56) and (57) is, as far as its wordclass is concerned, an adjective, argue that adjectives in adverbial function are realized in the adjectival short-form, similar to their predicative use.

In contrast, proponents of the view that *schnell* 'fast' in (56) and (57) is an adverb argue that *schnell* in these sentences is a derivation via a \emptyset -suffix from the adjective. Since it is viewed as an adverb, it is not surprising that it is not inflected for gender and number, because adverbs cannot be inflected (cf. clause (46-i) in the definition of adverbs on page 16). Clearly, this is also a possibility, albeit one which leaves us with two homonymous forms, namely the adjectival short-form and the adverb derived from the adjective.

¹³The adjectival short-form does allow the formation of comparison forms, cf. (i) for the predicative and (ii) for the adverbial use.

- (i) a. Fritz ist **schneller/am schnellsten**.
Fritz is faster/the fastest
b. Fritz denkt **schneller/am schnellsten**.
Fritz thinks faster/the fastest

Heidolph et al. (1981, p. 622) argue that the formation of superlative forms with help of the prepositional dative case (cf. *am schnellsten* 'the fastest' in (i)), can be taken as another indicator of the adjectival status of the wordforms under discussion, but I do not find this very convincing, since the prepositional dative is not possible in the attributive usage of adjectives and the differentiation between predicative and adverbial usage, which both allow this form, is in itself difficult, cf. the discussion in 2.1.1.4.

Proponents of the adverb analysis sometimes also use crosslinguistic data to argue for their point. In many Indo-European languages, the words corresponding to German adverbial adjectives are morphologically distinct from the adjectives of which they are derived, cf. (59) for English and French.¹⁴

- (59) a. English: quick/quickly
 b. French: rapide/rapidement

However, there are many other languages where this is not the case, for example Dutch, where parallel to German, the same wordform is used for the predicative and the adverbial usage of adjectives. Again parallel to the situation in German, it is neither inflected for gender, cf. (60), nor for number, cf. (61).

- (60) a. De auto rijdt **snel**.
 The car.MASC rides fast
 b. Het schip vaart **snel**.
 The ship.NEUTER goes fast

- (61) a. De auto's rijden **snel**.
 The cars ride fast
 b. De schepen varen **snel**.
 The ships go fast

In some languages, we even find that the words serving as manner adverbials agree in case with the agent, cf. (62) from the Australian language Martuthunira.

- (62) ngunhu-ngara pawulu-ngara mir.ta **jarruru-lu** parrungkarri-yangu
 DEM.NOM-PL child-PL NEG slow-EFF shout-PASSP
 ngulu **wartirra-lu**
 DEM-EFF woman-EFF
 'These children were shouted at by the woman not slowly (i.e. not softly)
 = (20b) in Himmelmann & Schultze-Berndt (2004)¹⁵

In (62), both the wordform serving as manner adverbial, *jarruru-lu* 'slowly' as well as the noun denoting the agent, *wartirra-lu* 'woman' are in the effective case.

¹⁴It is not clear whether the term *derivation* is appropriate for the relation between the adjectives and the adverbs in these cases. Haspelmath (1996), for example, argues that the English suffix *ly* is an inflectional suffix. For Haspelmath (1996), the criteria to decide whether a given formation is inflectional or derivational is whether they are regular, general and productive or irregular, defective and unproductive. If the first three criteria are fulfilled, the formation results from inflection, if the latter three are fulfilled, the formation is a derivation. According to these criteria, *ly* is an inflectional suffix, albeit one with the special characteristic of being a word-class-changing or *transpositional* suffix. Haspelmath goes on to argue that it is useful in the cases of transpositional inflection to distinguish between what he calls *lexeme word-class* and *word-form word-class*. The lexeme word-class of *quickly*, for example, is adjective, the word-form word-class is adverb.

¹⁵Himmelmann & Schultze-Berndt (2004) attribute this example sentence to Dench, Alan C. (1995) Martuthunira. A language of the Pilbara region of Western Australia. *Pacific Linguistics*, C-125 :234.

Even in the Indo-European languages given in (59) the situation is not as clear-cut as it may seem on a first analysis, cf. the data from English in (63).

- (63) a. He guessed **wrong**.
 b. He acted **wrongly**.
 = (16b) in (Huddleston & Pullum 2002, p. 568)

Although in (63-a) *wrong* appears without *-ly-* suffix, it is used adverbially. Consequently, Huddleston & Pullum (2002, p. 568) treat *wrong* in (63-a) as an adverb, in contrast to its occurrence as an adjective, e.g. in *the wrong decision*, even though there is no special marking. Huddleston & Pullum (2002, p. 568f) contains more examples where the absence vs presence of *-ly* does not allow a differentiation between adverb and adjective.

Reference to parallel construction in other languages is therefore not able to decide the question.

2.1.3 Conclusion

This discussion on the terminology used in this work fell into two subsections, the first concerned with the syntactic function of the wordforms investigated here, the second with their wordclasses.

In the first subsection, I gave a definition of *adverbials* in terms of their specific syntactic function and have shown how this definition allows a differentiation from the other syntactic function. It turns out that according to the definition, all the boldfaced words in example (1) of chapter 1, repeated as (64), serve as adverbials.

- (64) a. Sie hat **laut** gesungen.
 She has loudly sung.
 ‘She sang loudly.’
 b. Der Zug fuhr **schnell**.
 The train drove fast.
 ‘The train drove fast’
 c. Er löste die Aufgabe **intelligent**.
 He solved the problem intelligently.
 ‘He solved the problem intelligently’

The second subsection was concerned with the question of which wordclass the boldfaced wordforms in (64) belong. I argued in detail that they are best categorized as adjectives, serving in these sentences as adverbials. The main reason for this is that these words resemble in their morphology the adjectival short-form already known from the predicative usage of adjectives. I also pointed out that proponents of the alternative classification as adjectival adverbs argue that the homonymy of adjective and adverb is the result of a \emptyset -derivation.

Nevertheless, it should be clear that whether the words in the use of interest here

are referred to as *adjectival adverbs* or as *adverbial adjectives* is not critical to the further discussion of syntactic and semantic issues and has in that respect no theoretical consequence. Its importance lies rather in giving a clear and consistent way of referring to the words being investigated in this work.

2.2 Standard semantic approaches

Chapters six and seven of this work are concerned with the representation of adverbial adjectives in formal semantics. In the two chapters, I make use of an event-based representation of sentences containing adverbial modification. However, the event-based approach is not the only formal approach to adverbial modification, but only one possibility. Two other well-known attempts to capture adverbial modification are the predicate modifier theory and the approach introduced by McConnell-Ginet (1982), which is based on extending the arity of the verbal predicate.

In this section, I give a short overview of the three approaches and discuss the benefits and drawbacks of each approach.

2.2.1 Event-based semantics

Event-based semantics as introduced in Davidson (1980) assumes that the representation of a sentence contains a variable for events.¹⁶ This event variable is introduced by the verbal predicate. A simple sentence like *Peter runs* is represented as in (65).¹⁷

- (65) Peter runs.
 $\exists e [\text{Run}(\text{Peter}, e)]$

Adverbials are treated as predicates over the event variable, forming a separate conjunct in the formal representation, cf. (66).

¹⁶Davidson only assumes an underlying event argument for action sentences, not for statives. The question whether or not all sentences contain an underlying event argument is the center of some controversy, cf. e.g. Katz (2000).

¹⁷Event-based representations where the event variable is given on par with the other arguments of the verbal predicate are called *Davidsonian*. This contrasts with so-called *Neo-Davidsonian* approaches. In Neo-Davidsonian approaches, the verbal predicate is represented as a one-place predicate over events and its arguments are conjunctively added via the thematic relations holding between the event and the respective argument, cf. (i), where the SUBJECT relation in the formula should be understood as a placeholder for those thematic relations typically associated with subjecthood (for this notation, cf. Parsons (1990). The terminus Neo-Davidsonian for this type of notation was introduced in Dowty (1989, p. 83)).

- (i) $\exists e [\text{Run}(e) \ \& \ \text{Subject}(\text{Peter}, e)]$

Since the treatment of adverbials is exactly the same in both approaches, I will use the representation format that has been chosen by the authors under discussion. For more discussion of the difference between the two formats, cf. Parsons' discussion of thematic roles in Parsons (1990, chapter 5).

- (66) Peter sings loudly.
 $\exists e [\text{SING}(\textit{Peter}, e) \ \& \ \text{LOUD}(e)]$

Davidson’s (1980) main motivation for this approach is that it is able to account for typical entailment patterns of sentences containing adverbial modifiers. The sentence (67), taken from Parsons (1990, p. 13), for example, entails all the sentences in (68).

- (67) Brutus stabbed Caesar in the back with a knife.
- (68) a. Brutus stabbed Caesar in the back and Brutus stabbed Caesar with a knife.
 b. Brutus stabbed Caesar in the back.
 c. Brutus stabbed Caesar with a knife.
 d. Brutus stabbed Caesar.

Within the entailed sentences in (68), (68-a-c) entail (68-d). This pattern can be conveniently represented with the help of a so-called *entailment diamond* (for this term, cf. e.g. Chierchia & McConnell-Ginet (2000, p. 468)), cf. figure 2.1.

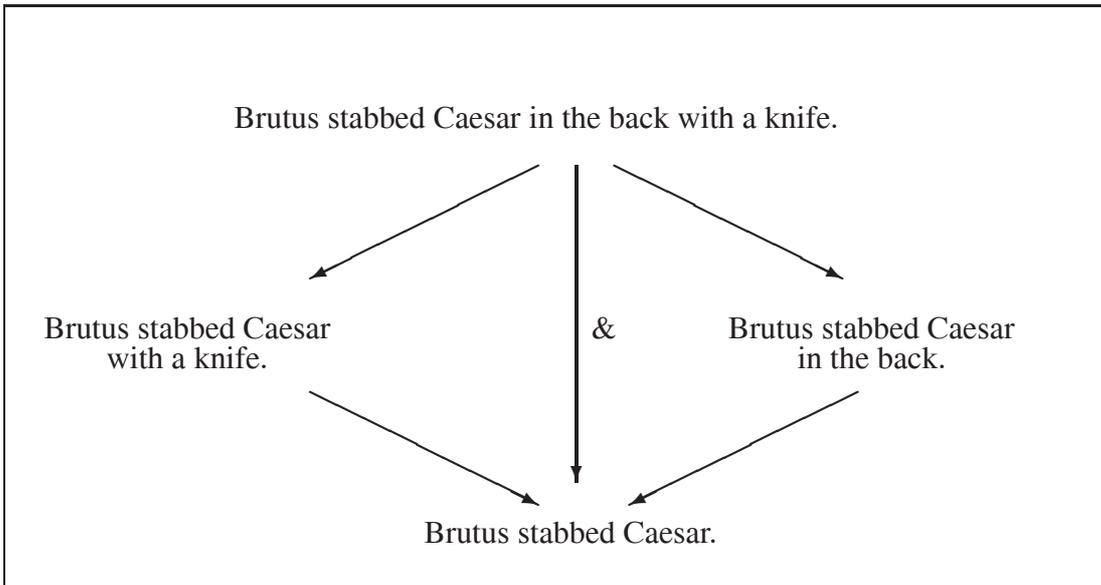


Figure 2.1

In the event-based approach, these entailment relations follow via simplification from the semantic forms of the respective sentences, cf. figure 2.2.

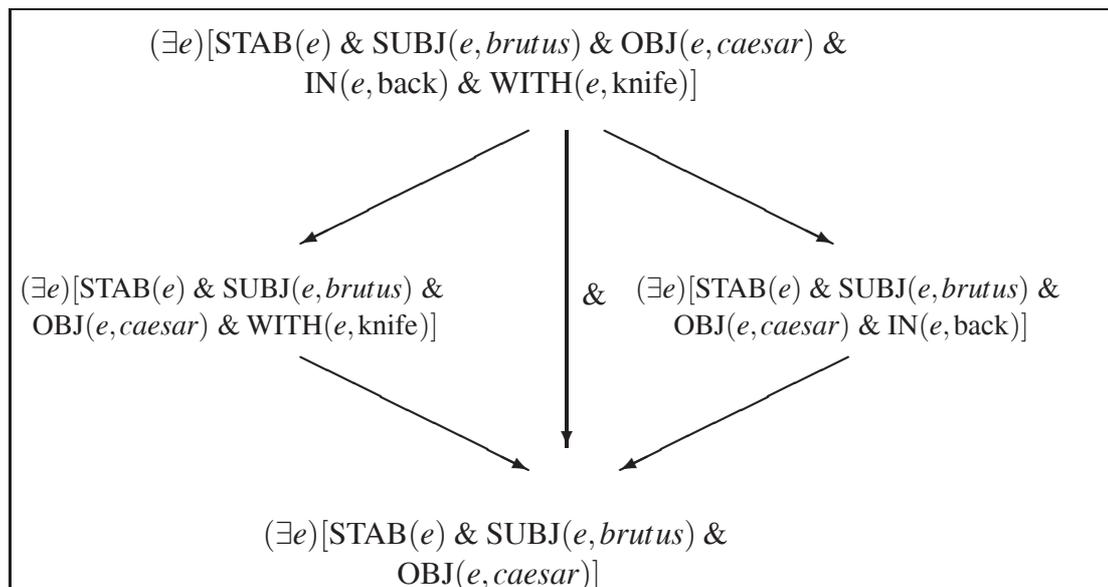


Figure 2.2

Similar entailment patterns that arise if the number of adverbial modifiers is greater than two, cf. (69), can be derived in the same way.

- (69) Brutus stabbed Caesar with a knife in the back at midnight under the cover of darkness.

All of the modifiers can be dropped independently, since all are realized as autonomous conjuncts.

2.2.1.1 Event-based semantics and intuitive plausibility

Most introductions to event-based semantics contain a discussion of reasons why the use of an event variable in the logical representations of sentences is a good idea, cf. for example the discussion in Parsons (1990, chapter 2).

I will not discuss these points here, but rather concentrate on whether the representation of adverbial adjectives as predicates of events is a good idea. In the literature, this is sometimes doubted, especially in the case of manner modification, cf. the following quote from Bartsch (1970):

In addition, not all modal adverbs can be predicated of events. What should be the meaning of “The event that can be described by *Peter läuft* ‘Peter runs’ is **schnell** ‘quick’? Does this event take place quickly or does it contain a fast movement? It appears that it is impossible to predicate of an event that it is quick. (p. 29f) [my translation]

The point that Bartsch (1970) is trying to make becomes clearer when comparing a sentence like *Peter runs quickly* with the two sentences in (70).

- (70) a. Peter runs **in Berlin**.
b. Peter runs **today**.

For both (70-a) and (70-b), it is very clear how the adverbial modification can be understood in relation to the event described by the rest of the sentence: the locative adverbial in (70-a) specifies the position in space of the event, the temporal adverbial in (70-b) specifies the position in time. This view of the two adverbials is somewhat strengthened by the fact that there is widespread agreement that events have a location in space and time (cf. the introductory remarks in Maienborn (2004)).

In Maienborn (2003a), manner adverbials are classified as event-internal modifiers, while the adverbials in (70) are understood as event-external, reflecting Bartsch's intuition.

2.2.1.2 The scope of the event-based approach

The event-based approach is explicitly reared at adverbials which allow for entailment patterns similar to that given in figure 2.1. Since the approach is extensional, it is limited to those adverbials that do not create opaque contexts (for examples of adverbials that create opaque contexts, cf. *intentionally* in (80), section 2.2.2.). In the terminology used in this work, these are manner adverbials.

2.2.2 The predicate modifier theory

The predicate modifier theory was developed in the early seventies of the last century, cf. Clark (1970), Parsons (1972), Montague (1970), Thomason & Stalnaker (1973), Kamp (1975).¹⁸ The argumentation for the predicate modifier theory for adverbials runs parallel to the argumentation of a similar theory for attributive adjectives.

The predicate modifier theory does not assume that an event variable appears in the lexical entry of verbs or in the formal representation of sentences. It is based on the standard assumption that verbs denote sets of individuals or sets of pairs of individuals. According to the most basic variant of the predicate modifier theory, an adverb like *quickly* is represented as a function that applies to predicates and yields new predicates. A representation of (71) within this framework is given in (72).

¹⁸Who was first? Bennett (1988, p. 173) writes that this theory was “first advanced, more or less independently, by Montague, Parsons, and Clark.” Montague (1970, p. 189) writes “An important aspect of the present treatment - the semantics of adjectives and adverbs - is due independently to J.A.W. Kamp and Terence Parsons, neither of whom has yet published his work in this domain.” (Kamp at that time was a student of Montague). Kamp (1975) writes “The first theory dates from the late 1960s. It is stated in Montague (1970) and Parsons (1968)” (Parsons (1968) refers to *A semantics for English*, Unpublished). The abstract of Parsons (1972) says that the theory was “apparently discovered independently by myself, Romain [sic] Clark, and Richard Montague and Hans Kamp”.

(71) Fritz runs quickly.

(72) $(\text{QUICKLY}(\text{RUN}))(\text{f})$

That is, the function representing the adverb *quickly* takes the set of individuals that run as an argument and yields the set of individuals that run quickly.

To derive this sentence, we must assume the lexical entries for *quickly* and *run* given in (73) and (74), respectively.

(73) $\lambda P \lambda x [\text{QUICKLY}(P(x))]$

(74) $\lambda x [\text{RUN}(x)]$

Given these entries, the derivation is straightforward, cf. (75).

(75) [1] $\lambda P \lambda x [\text{QUICKLY}(P(x))](\lambda x [\text{RUN}(x)])$
 [2] $\lambda x [\text{QUICKLY}((\lambda x [\text{RUN}(x)])(x))]$
 [3] $\lambda x [\text{QUICKLY}(\text{RUN}(x))]$
 [4] $\lambda x [\text{QUICKLY}(\text{RUN}(x))](\text{fritz})$
 [5] $\text{QUICKLY}(\text{RUN}(\text{fritz}))$

2.2.2.1 Extensionality

So far, this approach is purely extensional. This leads to unwanted results (This has been frequently noted, cf. e.g. Cresswell (1985) or Eckardt (1998)). To see this, consider a model where the extension of the verb *run* is the same as the extension of the verb *talk*, e.g. both denote the set consisting of the individual *Anna*. Furthermore, we assume that in this model, the sentence (76) is true.

(76) Anna runs quickly.

If (76) is true, then (77) will also be true.

(77) Anna talks quickly.

To circumvent this consequence, adverbials must denote functors on verb intensions, that is, they operate on predicates in intension and yield predicates in intension.

Eckardt (1998, p. 5ff), points out that this view of adverbials has some interesting consequences. This is due to the fact that while some adverbials give rise to opaque contexts, others do not. Thus, standard manner adverbials do not give rise to opaque contexts, neither with regard to subjects nor to objects, cf. (78) and (79), respectively.

(78) John walks slowly
 John is the mayor of New York.
 —————
 → The mayor of New York walks slowly
 = (28) in Thomason & Stalnaker (1973)

- (79) Charles loudly sang the British Anthem.
 The British anthem is *God Save the Queen*
 → Charles loudly sang *God Save the Queen*.

Other classes of adverbials, however, behave differently. The adverb *intentionally*, for example, is well-known to create opaque contexts with regard to the direct objects, cf. (80).

- (80) Oedipus intentionally married Jocasta.
 Jocasta is Oedipus' mother.
 ≠ Therefore, Oedipus intentionally married his mother.
 = (68) in Thomason & Stalnaker (1973))

This data suggests that those adverbials that do not give rise to opacity-effects must be applied to the verb before any nominal arguments, and adverbials that give rise to these effects are applied after the respective nominal arguments (cf. Thomason & Stalnaker (1973); Eckardt (1998, p. 11ff.) 'the narrow operator approach').

The cognitive inappropriateness of the intensional solution Above, I have shown that adverbials in the predicate modifier theory must be treated as being applied to intensions of verbal predicates. This is criticised in McConnell-Ginet (1982) and, following McConnell-Ginet, Larson (1998).

Following the representation in Larson (1998), the critique can be separated into two parts: (a) substitution failure does not entail intensionality and (b) the intensional account does not correspond to our intuitions about the data.

To demonstrate (a), both authors use the example of *cook* vs *eat*. If we assume a model where all the people who eat are also the people who cook, then we can substitute COOK(x) for EAT(x) and vice versa. However, we do not need to use the intension of the intransitive verbs to circumvent the substitution, but can simply look for further details that distinguish between the two situations. As demonstrated by McConnell-Ginet (1982) and Larson (1998), this further detail can be the hidden relationality of eating and cooking. That is, although in our model those who eat and those who cook are coextensional, what is being eaten and what is being cooked can be different. If this is the case, then we simply reanalyze the intransitive variants of *eat* and *cook* as transitives with a hidden object argument.

The second point, (b), is very clearly stated in Larson (1998). He starts with a comparison of the data and analysis in (81) with that in (82).

- (81) Suppose: $\{x:x \text{ dances}\} = \{x:x \text{ sings}\}$
 Then: Olga dances. \leftrightarrow Olga sings.
 But: Max thinks Olga dances. $\not\leftrightarrow$ Max thinks Olga sings.
 Analysis: THINK(max, ^DANCE(olga)) $\not\leftrightarrow$ THINK(max, ^SING(olga))
 = (8) in Larson (1998)

Following Larson (1998), the entailment failure from *Max thinks Olga dances* to *Max thinks Olga sings* can be informally explained by arguing that although in the actual world the dancers and the singers are co-extensional, they do not have to be co-extensional in the world of Max's thoughts. This intuition about why the inference fails reappears in the formal analysis, where *think* is analyzed as a two place predicate that takes as its object the intension of a proposition.

- (82) Suppose: $\{x:x \text{ eats}\} = \{x:x \text{ cooks}\}$
 Then: Olga eats. \leftrightarrow Olga cooks.
 But: Olga eats fish. $\not\leftrightarrow$ Olga cooks fish.
 Analysis: EAT(*olga*,*fish*) $\not\leftrightarrow$ COOK(*olga*,*fish*)
 = (9) in Larson (1998)

By contrast, (82) shows hows that the entailment failure from *Olga eats fish* to *Olga cooks fish* can be explained without taking recourse to intensions, even though we assume that eaters and cooks are co-extensional.

Given these two possibilities to explain entailment failure, the question is which possibilities bear more intuitive plausibility for the analysis of the data in the cases of adverbial modification. That is, how the pattern in (83) is best explained.

- (83) Suppose: $\{x:x \text{ talks}\} = \{x:x \text{ walks}\}$
 Then: Olga talks. \leftrightarrow Olga walks.
 But: Olga talks quickly. $\not\leftrightarrow$ Olga walks quickly.

According to both McConnell-Ginet (1982, p. 162f.) and Larson (1998), to account for the entailment failure with the help of intensions is counter-intuitive. We do not reason that although in this world walkers and talkers are co-extensional, there might be alternative worlds in which they are not co-extensional, and therefore, those who talk quickly and those who walk quickly must not refer to the same set of people. Rather, we argue along the following lines: “[...] whenever there is dancing and singing there is a performance. And even if the same people dance and sing, the performances are still different. And one might be beautiful, and the other not. Hence the conclusion doesn't follow.” Larson (1998)

Both alternative accounts, the event-based account and Mc-Connell-Ginet's account, allow for an explanation of the entailment failure with the help of hidden relationality: on the one hand using events, on the other introducing further dimensions such as speed as arguments of the verbal predicate.

2.2.2.2 Scope data

One of the main motivations for the predicate modifier theory was to be able to account for scope effects. Parsons (1972) in particular argues that only this approach handles data where one adverbial takes scope over another adverbial, cf. his example in (84).

- (84) John **painstakingly** wrote **illegibly**.
in Parsons (1972, p. 131)

As Parsons (1972) argues, the correct interpretation of (84) requires that “the illegibility of the writing was at least one of the things John was taking pains to do”.

This means that (84) does not correspond in meaning to (85), nor does it entail (86), both of which would be predicted by the event-based analysis of (84).

- (85) John wrote painstakingly and illegibly.
(86) John wrote painstakingly.

In contrast, in the predicate modifier format the correct semantic scope is given in the formal representation, cf. (87).

- (87) PAINSTAIKING(ILLEGIBLE(WRITE(JOHN)))
Cf. Parsons (1972, p. 133)

In addition, the entailment patterns can be guaranteed with the help of the meaning postulate given in (93) in section 2.2.2.3.

How (1) and similar examples can be appropriately represented in an event-based account will be the topic of chapter six. I will therefore not discuss this further here.

Scope data and overgeneration In his discussion of the predicate modifier account, Parsons (1990, pp. 54ff) argues that the ability to express scope relations if more than one adverbial is present is not an advantage but a disadvantage. In particular, he argues that this account predicts ambiguity for sentences like (88), since they can be represented as either (89) or (90).

- (88) Brutus stabbed Caesar violently with a knife.
(89) VIOLENTLY(WITH_A_KNIFE(STAB)) (b,c)
(90) WITH_A_KNIFE(VIOLENTLY(STAB)) (b,c)

However, this problem will never arise if the syntactic structure is taken into account. If we assume that the build-up of the semantic representation is guided by syntax, as Parsons will also assume, then the syntax will tell us which modifier is closer to the verbal predicate and therefore applies first.

2.2.2.3 Entailments

Entailments like the one in (91) do not follow logically from the respective representations, cf. (92).

- (91) Anna runs quickly. $\rightarrow_{entails}$ Anna runs.

- (92) a. Anna runs quickly.
 QUICKLY(RUN)(anna)
 b. Anna runs
 RUN(anna)

However, this entailment can be insured with the help of a meaning postulate like the one in (93).

- (93) For all adverbials α the semantic representation $[[\alpha]]$ has the subset property:
 If $[[\alpha]] = F$ in $D_{\langle\langle e,t \rangle, \langle e,t \rangle\rangle}$, then for all A in $D_{\langle e,t \rangle}$: $F(A)$ is a subset of A .
 Cf. the postulate for manner adverbs in Eckardt (1998, p. 4ff.)

In prose: since the set denoted by *run quickly* is a subset of the set denoted by *run*, (92-b) follows from (92-a).

The situation becomes more difficult in the case of multiple adverbial modification, as was the case in the sentence discussed in the context of the event-based analysis in section 2.2.1, repeated here for convenience.

- (94) Brutus stabbed Caesar in the back with a knife.

If we assume the representation in (95) for this sentence, then the postulate (93), modified to be used on transitive verbs, allows us to derive the entailments in (96).

- (95) IN_THE_BACK(WITH_A_KNIFE(STAB))(caesar,brutus)
 (96) a. Brutus stabbed Caesar with a knife.
 b. Brutus stabbed Caesar.

We cannot, however, derive the entailment in (97).

- (97) Brutus stabbed Caesar in the back.

To derive this entailment, we can adopt the principle of monotonicity introduced in Landman (2000, p. 5f.), cf. (98).¹⁹

¹⁹This principle is introduced by Landman to account for the patterns of attributive adjectives (his example is the entailment from *blond blue-eyed forty year old American* to *blond forty year old American*). For adverbials, Landman (2000, p. 7f) argues that the case is not parallel because monotonicity is not given. He demonstrates this with the help of a comparison of (i) with (ii).

- (i) a. Every yankee is an American.
 b. John is a forty year old yankee.
 c. Hence John is a forty year old American.
 (ii) a. If you talk to a crowd, you move your thorax.
 b. John talks to the crowd through a megaphone.
 c. Hence, John moves his thorax through a megaphone.

According to Landman (2000), the fact that (i-c) follows from (i-a) and (i-b) but (ii-c) does not follow from (ii-a) and (ii-b) shows that monotonicity as defined in (98) holds for attributive adjectives but not

(98) If $A(N)(x)$ and N entails M then $A(M)(x)$

If we now let N be the complex predicate $WITH_A_KNIFE(STAB)(x,y)$, M the predicate $STAB(x,y)$ and A the functor IN_THE_BACK , then it follows from (98) that (97) is entailed by (94).

2.2.2.4 Scope of the predicate modifier theory

The predicate modifier theory can be used for intersective as well as non-intersective adjective/adverbials. In the semantics of adjectival adverbs, one commonly distinguishes between intersective adjectives, cf. the examples in (99), and non-intersective adjectives, cf. the examples in (100).

(99) four-legged, radioactive, sick, red

(100) former, allegedly

If the intersective adjectives in (99) are regarded as one-place predicates denoting sets, and if the nouns they modify are also regarded as nouns denoting sets, then the denotation of the phrase formed from adjective and noun will be the intersection of the two sets, cf. (101).

(101) *sick dog*
 $[[\text{sick}]] = \{x \mid x \text{ is sick}\}$
 $[[\text{dog}]] = \{x \mid x \text{ is a dog}\}$
 $[[\text{sick dog}]] = [[\text{sick}] \cap [[\text{dog}]]$
 $= \{x \mid x \text{ is sick and } x \text{ is a dog}\}$

Nonintersective adjectives, in contrast, do not show this behaviour. A classic example is *alleged* in the phrase *alleged murder*, where intersectivity is not given, cf. (102).

for adverbials.

In my view, this is a simple data problem. We can easily find examples where the opposite holds, e.g. the entailment involving attributive adjectives fails but the entailment holds for adverbials, cf. (iii) vs (iv).

(iii) a. Every car is an object.
 b. This car is a good car.
 c. Hence, this car is a good object.

(iv) a. If you stab someone, you injure him.
 b. Brutus stabbed Caesar with a knife.
 c. Brutus injured Caesar with a knife.

Even though *car* semantically entails *object*, (iii-a) and (iii-b) do not entail (iii-c). In contrast, the entailment from (iv-a) and (iv-b) to (iv-c) goes through without problems.

These problems can be avoided if we require that the head of the constructions in which we apply the monotonicity condition is kept constant. That is, in cases of adverbial modification, the verb will be the same, in the case of attributive modification, the head noun will be the same.

- (102) *alleged murder*
 $[[\text{alleged murder}]] \neq [[\text{alleged}]] \cap [[\text{murder}]]$

Non-intersective adjectives can also be used adverbially, cf. (103).

- (103) Fritz hat das Gedicht **angeblich** gesungen.
 Fritz has the poem allegedly sung
 ‘Fritz allegedly sung the poem.’

These non-intersective adjectives can be represented in the predicate modifier theory, cf. (104) for the formal representation of (103).

- (104) ALLEGEDLY(^SING)(fritz, the_poem)

Sentences containing non-intersective adjectives as adverbials do not allow the entailment from sentence with modifier, cf. (105-a) to the sentence without modifier, cf. (105-b).

- (105) a. Fritz hat das Gedicht **angeblich** gesungen.
 Fritz has the poem allegedly sung
 ‘Fritz allegedly sung the poem.’
 b. Fritz hat das Gedicht gesungen.
 Fritz has the poem sung
 ‘Fritz sung the poem.’

They therefore do not fall within the scope of the event-based approach.

Since the predicate modifier theory is not an extensional theory, it can also be used to formalize adjectives that create opaque contexts, e.g. *absichtlich* ‘intentionally’.

2.2.2.5 Events and the predicate modifier approach

The predicate modifier approach as represented so far does not make use of events in the formal representation. In the literature, the relationship between the predicate modifier approach and events is discussed from two different angles: (a) what happens if the predicate modifier approach is combined with the idea of an event parameter for verbs (cf. Eckardt (1998, p. 12f)), and (b) to what extent can the event-based approach be seen as a refinement of the predicate modifier account (cf. Parsons (1990, p. 56ff)). I will discuss the two points in turn.

Adding events Technically, the predicate modifier approach can work with and without events.²⁰ That is, a sentence like (106) can be represented either as (107-a) or (107-b).

²⁰This is not a trivial point. The event-based approach, for example, requires events, since they are responsible for the link between the separate conjuncts.

- (106) Anna walks quickly.
 (107) a. QUICKLY(WALK)(anna)
 b. QUICKLY(WALK)(anna,e)

While *quickly* in (107-a) denotes a function taking sets of individuals into sets of individuals, it is in (107-b) a function taking sets of pairs of individuals and events into sets of pairs of individuals and events.

Eckardt (1998, p. 12) points out that the predicate modifier approach in conjunction with events does not require that adverbials are applied to the intensions of verbs. Remember that the extensional variant of the predicate modifier approach proved to be problematic, since it gave rise to patterns like that in (108) (cf. the discussion in section 2.2.2.1).

- (108) Suppose: $\{x:x \text{ dances}\} = \{x:x \text{ sings}\}$
 Then: Anna sings. \leftrightarrow Anna dances.

With events added, this pattern will no longer arise, since the extensions of *dance* and *sing* will be different events, cf. the formalizations in (109), where this is shown with the help of indices.

- (109) a. $\exists e_1$ [DANCE(anna, e_1)]
 b. $\exists e_2$ [SING(anna, e_2)]

Cryptically, Eckardt (1998, p. 12) comments on this consequence of the combination of predicate modifier approach and events that “we find that the event parameter is a means to create an intermediate level of intensionality which is restricted to the verb, but not affected by nominal arguments.” I do not follow Eckardt in this view, since, as shown above, the event parameter is a means to get rid of an intuitively unmotivated intensional interpretation (cf. the arguments by McConnell-Ginet (1982) and Larson (1998) given in the second part of section 2.2.2.1) in favour of an extensional account.

Event-based semantics as a refinement Parsons (1990), discussing modifier scope in the predicate modifier theory, notes that “The underlying event account may be seen as a refinement of the operator account.” Parsons (1990, p. 56). Parsons assigns to *x stabbed y violently* the logical form in (110).

- (110) $\exists e$ [STABBING(e) & SUBJ(e,x) & OBJ(e,y) & VIOLENT(e)]

This form, argues Parsons, can be conceived as the result of inserting x and y into the argument places of the two-place predicate in (111).

- (111) $\lambda v\lambda w\exists e$ [STABBING(e) & SUBJ(e,v) & OBJ(e,w) & VIOLENT(e)]

The predicate in (111), according to Parsons, can be assumed to be derived from the predicate in (112).

(112) $\lambda v \lambda w \exists e [STABBING(e) \ \& \ SUBJ(e, v) \ \& \ OBJ(e, w)]$

The predicate in (112) can now be viewed as the predicate that the modifier *violently*, according to the predicate modifier theory, operates on, while the predicate in (111) represents the result of applying the function denoted by the modifier. Viewed in this way, the event-based account provides a more fine-grained analysis of the predicate modifier account.

Whether we can in all cases construct functions that deliver the correct output predicates from the input predicates depends, according to Parsons, on what exact theory of meaning is assumed. This leads Parsons to conclude:

In summary, the operator approach may or may not be consistent with the underlying event approach. In its traditional formulation it stands in need of supplementation. It is unclear, for technical reasons, whether the two approaches can be brought into conformity with one another. (p. 58)

2.2.3 McConnell-Ginet: changing the arity of the verbal predicate

An alternative to the predicate modifier approach is presented in McConnell-Ginet (1982). Starting with the observation that some manner adverbials are obligatory in a similar way as direct objects (cf. the discussion in section 2.1.1.3), she argues that manner adverbials in general should be treated as verbal arguments. A representation of (113) is given in (114).

(113) Fritz runs quickly.

(114) RUN(fritz, quickly)

To be able to derive this representation, McConnell-Ginet (1982) first defines the operation of verb-augmentation, given in (115).

(115) Let α be a verb in category X that translates into an n -order predicate denoting an n -ary relation \mathfrak{R} . Then α^+ is an ADMISSABLE AUGMENTATION OF α IN CATEGORIES X AND X/Y only if α^+ translates into an $n/n + 1$ -order predicate denoting $\mathfrak{R}^+ = \mathfrak{R} \cup \mathcal{S}$, where $\mathcal{S} \subset \mathfrak{R} \times \text{Type Y}$. The augmented verb α^+ is ADMISSABLE RELATIVE TO $\xi \in Y$ only if $\mathcal{S} \cap \mathfrak{R} \times \text{Den}(\xi) \neq \emptyset$. Cf. (57) in (McConnell-Ginet 1982)²¹

This definition becomes clearer when explained with the help of an example, e.g. the augmentation of the verb *run* to include an argument place for manner adverbials. The

²¹In the original paper, the very last formula is $\mathcal{S} \subset \mathfrak{R} \times \text{Den}(\xi) \neq \emptyset$. I changed \subset to \cap . McConnell-Ginet's original formulation does not make much sense: it can only be interpreted as a shorthand for the two separate statements $\mathcal{S} \subset \mathfrak{R} \times \text{Den}(\xi)$ and $\mathfrak{R} \times \text{Den}(\xi) \neq \emptyset$. The first statement does not make any sense: why should it be a requirement on \mathcal{S} to be a proper subset of the cartesian product of \mathfrak{R} and $\text{Den } \xi$? What if the cartesian product contains just one element? The second statement will always be true, except when both sets, \mathfrak{R} and $\text{Den}(\xi)$ are the empty set.

verb is intransitive and therefore denotes a one-place predicate, cf. (116).

$$(116) \quad \lambda x[RUN(x)] < e, t >$$

The augmentation of run to run⁺, belonging to the category of intransitive verbs and intransitive verbs/manner_adverbials, is admissible iff the following is given:

1. run⁺ translates into either a predicate of the type $< e, t >$ or of the type $< e, < e, t >>$.
2. run⁺ denotes the unification set of the set denoted by RUN and the set \mathcal{S} . The set \mathcal{S} is a subset of the cartesian product of the set denoted by RUN and the set of all relevant adverbials.
3. run⁺ is admissible relative to a manner adverbial, e.g. *quickly*, only if the intersection of the set \mathcal{S} and the cartesian product of the set denoted by RUN and the singleton set QUICKLY is not the empty set.

In a second step, McConnell-Ginet (1982) defines verb-phrase-internal adverbial modification, cf. (117). In McConnell-Ginet's (1982) terminology, adverbials that can be used for verb phrase internal adverbial modification are categorized as AD-Vs.

- (117) a. Let α be a lexical verb belonging to Y/AD-V and ξ be an expression belonging to AD-V. Then expression $\alpha\xi$ will belong to category Y. The translation of $\alpha\xi$ is specified by the rule of functional application:

$$\text{tr}(\alpha\xi) = \text{tr}(\alpha)(\text{tr}(\xi))$$
- b. Let α be a lexical verb belonging to category X where $X \neq Y/AD-V$ and ξ be an expression belonging to category AD-V. Then expression $\alpha\xi$ belongs to category X. A translation of $\alpha\xi$ is defined if $\exists \alpha^+$, an admissible augmentation of α relative to ξ in categories X and X/AD-V. Then
$$\text{tr}(\alpha\xi) = \text{tr}(\alpha^+)(\text{tr}(\xi))$$

 = (58) in McConnell-Ginet (1982)

The clause (117-a) defines the procedure when the verb already subcategorizes for AD-Vs, the clause (117-b) defines the procedure in the cases where verb-augmentation is needed.

2.2.3.1 Entailment data in McConnell-Ginet's approach

A simple entailment, like the one from (118-a) to (118-b), can be explained with the help of the general schema given in (119).

- (118) a. Anna runs quickly.
- b. Anna runs

$$(119) \quad \text{For any augmented verb } \alpha^+ : \alpha^+(x, y) \text{ entails } \alpha(x)$$

This schema does not need to be postulated, since it follows from McConnell-Ginet's (1982) definition of verb augmentation, cf. (115): the denotation of the augmented

verb always contains the denotation of the un-augmented verb. Therefore, more complex entailments, e.g. from (120-a) to (120-b), are also unproblematic.

- (120) a. Anna runs quickly with her crutches to the store.
b. Anna runs with her crutches.

Landman (2000, p. 88ff.) demonstrates a reformulation of McConnell-Ginet's approach which also yields the correct entailments as well as free permutation of the adverbial modifiers.

2.2.4 Conclusion

This section gave an overview over the three standard approaches to adverbial modification in formal semantics.

As I have tried to show, there are no technical reasons that allow for a decision in favour of any of the three approaches. The entailment data, for example, is one of the main arguments in favour of the event-based approach, but this data can also be accounted for in the two other approaches, albeit with the need of the assumption of some meaning postulates. I have shown in some detail how this can be done, because the entailment data is given much prominence in the literature on the semantics of adverbials (so much so that it appears as the main argument for event-semantics even in an introductory textbook, cf. Chierchia & McConnell-Ginet (2000, p. 469ff)). Note that this focus on entailment patterns is in itself a very arbitrary choice (cf. Bennett (1988, p. 165ff)). Or, as Cresswell (1985) puts it:

There is no more reason why the entailment of *John runs* by *John runs quickly* should be made explicit in the λ -deep structure than should the entailment of *John moves* by *John runs*. (p. 27)

The predicate-modifier theory, on the other hand, gives a very straightforward account of scope-taking manner adverbials, while McConnell-Ginet's account is especially convincing when the adverbials are obligatory.

This presentation of the three approaches is therefore perhaps most aptly concluded by the following quote from Kamp (1975):

It is bad to be left with a semantic phenomenon that is explained by no theory; but it does no harm to have two distinct theories which give equally adequate, albeit different, accounts of those phenomena that fall within the province of both. (p.154)

Except, of course, that Kamp's two should be read as three.

Chapter 3

The different readings of adverbial adjectives

3.1 Introduction

When German adjectives are used as adverbials, their contribution to the sentence meaning is so varied that it is necessary to distinguish several classes of adverbial usages or readings. Importantly, one and the same adjective can have two or more different adverbial usages.

The aim of this chapter is to introduce the different adverbial usages that are available for German adverbial adjectives. In order to distinguish between the usages, I introduce tests, which, when applied to a sentence containing an adverbial adjective, allow for a determination of which specific adverbial usage the adjective serves in that sentence.

The chapter is organized as follows:

In section 2, I introduce the group of manner adverbials. The discussion of manner adverbials is the most detailed, as this group represents the standard adverbial usage for German adjectives. This section is divided into six subsections. In subsection 1, standard tests for manner adverbials are introduced. In the following two subsections 2 and 3, I establish two subgroups of manner adverbials, pure manner adverbials and agent-oriented manner adverbials. Subsection 4 compares manner adverbials to two adverbial usages which appear to be very similar, method-oriented adverbials and degree adverbials. In subsection 5, I discuss the usage of adjectives as predicatives as opposed to their usage as manner adverbials. As already mentioned in section 2.1.1.4, the differentiation is sometimes difficult. Subsection 6 discusses the finding that manner adverbials are incompatible with stative verbs.

Section 3 is concerned with adjectives in their usages as non-manner adverbials. It is subdivided into five subsections, concerning the usage of adjectives as mental-attitude adverbials, event-external adverbials, subject-oriented adverbials, frame adverbials and speaker-oriented adverbials, respectively.

In section 4, I take a brief look at the classification of English adverbs given in Ernst (2001) and explain why this approach does not work for German.

3.2 Manner adverbials

3.2.1 Introduction

The bold-faced words in (1) all serve as manner adverbials.

- (1) a. Peter hat **laut/leise/schnell/langsam** gesungen.
 Peter has loudly/quietly/quickly/slowly sung
 ‘Peter sang loudly/low/quickly/slowly.’
- b. Peter hat sich **intelligent/geschickt** verteidigt.
 Peter has himself intelligently/skilfully defended
 ‘Peter defended himself intelligently/skilfully.’

In determining whether a certain adjective functions as a manner adverbial, I will use four tests, two tests using paraphrases, one test using the interaction between manner adverbial and negation, and the fourth test concerning the elicitation-behaviour.

The first paraphrase test for manner adverbials is TEST 3.1.

TEST 3.1 A sentence of the form
SUBJECT VERB MANNER ADVERBIAL ,
 where an adjective serves as the manner adverbial, can be paraphrased by
How SUBJECT VERB, that is *PREDICATIVE*,
 where the same adjective serves as predicative.
 Cf. [s] in Bartsch (1972, p.150), Bartsch (1976, p. 153)

The application of this test is illustrated in examples (2) through (4), where the b-sentences give the paraphrases of the a-sentences.

- (2) a. Petra tanzt **wunderbar**.
 ‘Petra dances wonderfully.’
 b. Wie Petra tanzt, das ist wunderbar. (≈ a)
 ‘The way Petra dances is wonderful.’
 Cf. Bartsch (1972, p. 150), Bartsch (1976, p. 153)
- (3) a. Petra singt **laut**.
 ‘Petra sings loudly.’
 b. Wie Petra singt, das ist laut. (≈ a)
 ‘The way Petra sings is loud.’
- (4) a. Petra tanzt **elegant**.
 ‘Petra dances elegantly.’

- b. Wie Petra tanzt, das ist elegant. (\approx a)
‘The way Petra dances is elegant.’

Some examples of adverbial adjectives which do not allow this paraphrase are given in (5) and (6).

- (5) a. Jürgen zielt **absichtlich** daneben.
Jürgen aims on.purpose off.target
‘Jürgen shoots to miss.’
b. Wie Jürgen daneben zielt, das ist absichtlich. ($\not\approx$ a)
‘The way Jürgen shoots off target is on purpose.’
- (6) a. Mama hat **angeblich** ihr Portemonnaie verloren.
Mama has allegedly her purse lost
‘Allegedly, Mama lost her purse.’
b. Wie Mama ihr Portemonnaie verloren hat, das ist angeblich. ($\not\approx$ a)
‘The way Mama lost her purse was alleged.’

The second paraphrase test is TEST 3.2.

TEST 3.2 A sentence containing an adjective serving as manner adverbial can be paraphrased by a sentence where, instead of the adjective, the prepositional phrase *auf ADJEKTIVE Art und Weise* ‘in an ADJECTIVE manner’ is used.¹

The usage of TEST 3.2 is illustrated in (7) and (8).

- (7) a. Petra tanzt **wunderbar**.
‘Petra dances wonderfully.’
b. Petra tanzt auf wunderbare Art und Weise. (\approx a)
‘Petra dances in a wonderful manner.’
- (8) a. Franz hat den Text **oberflächlich** gelesen.
Franz has the text cursory read
‘Franz read the text cursorily.’
b. Franz hat den Text auf oberflächliche Art und Weise gelesen. (\approx a)
Franz has the text in a superficial manner read
‘Franz read the text in a cursory manner.’

That this test is not satisfied by all adverbial adjectives can again be shown with the help of sentences containing *absichtlich* and *angeblich*, cf. (9) and (10).

¹In German, it is sometimes also possible to use the preposition *in* ‘in’ instead of *auf* ‘on’, but its usage is restricted and often seems somewhat unnatural.

- (9) a. Jürgen zielt **absichtlich** daneben.
 Jürgen aims on.purpose off.target
 ‘Jürgen shoots to miss.’
- b. Jürgen zielt auf absichtliche Art und Weise daneben. (≠a)
 ‘Jürgen aims off target in an on purpose manner.’
- (10) a. Mama hat **angeblich** ihr Portemonnaie verloren.
 Mama has allegedly her purse lost
 ‘Allegedly, Mama lost her purse.’
- b. Mama hat ihr Portemonnaie auf angebliche Art und Weise verloren. (≠a)
 ‘Mama lost her purse in an alleged manner.’

TEST 3.2 shows two peculiarities. First, as noted for the English translation equivalent in Ernst (1984), some adjectives that can be used successfully in the *in ADJECTIVE manner* construction cannot be used as manner adverbials. One such example is *unglaublich* ‘unbelievable’, cf. (11), which gives the German equivalent as well as the original English example.²

- (11) a. *Sie hat die Karten **unglaublich** ausgespielt.
 She has the cards unbelievably put.down
 ‘*She put the cards down unbelievably.’
- b. Sie hat die Karten auf ungläubliche Art und Weise ausgespielt.
 ‘She put the cards down in an unbelievable manner.’
 = (7,8) in Ernst (1984, p. 24) (for the English sentences)

The above mismatch does not result from the fact that *unglaublich* ‘unbelievably’ in general cannot be used as an adverbial. Even if it can be used as an adverbial, it does not receive a manner reading, but rather a degree reading. Informally, degree adverbials specify the intensity of the action referred by the verb. One example for this usage of *unglaublich* is given in (12) (for degree adverbials in general and more discussion of *unglaublich*, cf. section 3.2.4.2).

²In Ernst’s examples, *predictably* is treated alongside *unbelievably* and displays the same pattern. In contrast to Ernst’s finding, *vorhersagbar* ‘predictable’ seems to be OK as a manner adverbial in the same combination in German, cf. (i-a).

- (i) a. Sie hat die Karten vorhersagbar ausgespielt.
 She has the cards predictably put.down.
 *She put the cards down predictably. [starring from Ernst]
- b. Sie hat die Karten auf vorhersagbare Weise ausgespielt.
 She has the cards in predictable manner put.down.
 ‘She put the cards down in a predictable manner.’

Sentence (i-a) is acceptable in German, but the English translation equivalent is judged to be ungrammatical in Ernst (2001).

- (12) Franz hat Lisa **unglaublich** gehaßt.
 Franz has Lisa unbelievably hated
 ‘Franz hated Lisa unbelievably.’

In (12), *unglaublich* ‘unbelievably’ does not specify the manner of the hating, but rather the intensity of the hating.

The second peculiarity of this test is that its paraphrase does not yield good results for some adverbial adjectives that are usually understood as core instances of manner modification, e.g. *laut/leise* ‘loudly/quietly’ and *schnell/langsam* ‘quickly/slowly’. This can be seen via a direct comparison of the paraphrases from TEST 3.1 and TEST 3.2 for sentences containing these adverbials, cf. (13) for *laut/leise* ‘loudly/quietly’ and (14) for *schnell/langsam* ‘quickly/slowly’.

- (13) a. Ephraim hat das Lied **laut/leise** gesungen.
 Ephraim has the song loud/quiet sung
 ‘Ephraim sang the song loudly.’
 b. Ephraim hat das Lied auf laute/leise Art und Weise gesungen. (??≈ a)
 Ephraim has the song in a loud/quiet manner sung
 ‘Ephraim sang the song in a loud/quiet manner.’
 c. Wie Ephraim das Lied gesungen hat, das war laut/leise. (≈a)
 How Ephraim the song sung has, that was loud/quiet.
 ‘The way in which Ephraim sang the song was loud/quiet.’
- (14) a. Kord ist **schnell/langsam** gelaufen.
 Kord is quick/slow ran
 ‘Kord ran quickly/slowly.’
 b. Kord ist auf schnelle Art und Weise gelaufen. (?? ≈a)
 Kord is in a quick manner ran
 ‘Kord ran in a quick manner.’
 c. Wie Kord gelaufen ist, das war schnell/langsam. (≈ a)
 How Kord run is, that was quick/slow
 ‘The way in which Kord ran was quick/slow.’

As the comparison between (13-b) and (13-c) and (14-b) and (14-c) shows, both *laut/leise* ‘loudly/quietly’ and *schnell/langsam* sound doubtful under the paraphrase from TEST 3.2, while the paraphrase from TEST 3.1 is acceptable. Note that for some speakers the two different paraphrases are both acceptable in the same way. A more principled problem for TEST 3.2 lies in the fact that it is also satisfied by method-oriented adverbs, cf. the discussion in section 3.2.4.1.

TEST 3.3 is another test for the identification of manner adverbials. Its usage is illustrated by the sentences (15) and (16).

TEST 3.3 If an adjective is used as a manner adverbial, it cannot have scope over negation.

- (15) a. *Peter hat **wunderbar** nicht getanzt.
Peter has wonderfully not danced
b. Peter hat nicht **wunderbar** getanzt.
Peter has not wonderfully danced
'Peter did not dance wonderfully.'
- (16) a. *Frieda hat **laut** nicht gesungen.
Frieda has loudly not sung
b. Frieda hat nicht **laut** gesungen.
Frieda has not loudly sung
'Frieda did not sing loudly.'

In both examples, the linear ordering MANNER ADVERBIAL > NEGATION leads to ungrammaticality, cf. (15-a) and (16-a), while the order NEGATION > MANNER ADVERBIAL is acceptable. The reasons for this behaviour will be discussed in section 4.3.1.

Related to this test is the question of what sort of relationship holds between sentences containing a negation and manner modification and those sentences without the manner modifier and the negation (= the sentential base). The data that is important here is given in (17) and (18).

- (17) a. Petra singt nicht **laut**.
Petra sings not loudly
'Petra does not sing loudly.'
b. Petra singt.
'Petra sings.'
- (18) a. Petra tanzt nicht **wunderbar**.
Petra dances not beautifully
'Petra does not dance beautifully.'
b. Petra tanzt.
Petra dances

Intuitively, (17-a) implies (17-b), and, similarly, (18-a) implies (18-b). However, it is not intuitively clear whether this implication is an entailment or an implicature.³

The implication relationship seems stronger if the manner adverbial bears main stress, cf. (19), where (19-a) does seem to imply the sentential base more strongly

³I use the standard distinction that if we can judge that *A implies B* on the basis of the truth-conditional content of *A*, then *A entails B*. If the reasons for the judgement concern pragmatics, e.g. conversational strategies, speaker/hearer expectations etc., then *B* is an implicature of *A*.

than (19-b).⁴

- (19) a. Petra singt nicht **LAUT**.
 Petra sings not loudly
 ‘Petra does not sing loudly’
 b. Petra singt **NICHT laut**.

For the parallel case in English, Bellert (1977, p. 339) explicitly mentions main stress on the adverbial as a prerequisite for the implication relationships.

This contrasts with the the positive case, i.e. the relation between unnegated modified sentence and the sentential base, where the implication from modified sentence to sentential base is clearly an entailment, cf. (20), where (20-a) entails (20-b).

- (20) a. Petra singt **laut**.
 Petra sings loudly
 b. Petra singt.
 Petra sings

I assume with Jacobs (1982, pp. 175ff), that, for the sentence containing negation, the implication is best understood as implicature. Jacobs’s (1982) argumentation rests on examples like (21) vs (22).⁵

- (21) *Ich bin mir nicht sicher, ob Petra singt. Sicher ist aber: Sie singt LAUT. Wenn sie singt, tut sie das nämlich immer laut.
 ‘I am not sure that Petra sings. One thing is sure, though: she sings loudly. When she sings, she always sings loudly’
 Cf. the parallel example (3.114) in Jacobs (1982)

In (21), the proposition that *Petra sings* is doubted, while at the same time the proposition that *Petra sings loudly* is asserted. Because the latter entails the former, the

⁴If the adverbial bears main stress, the negation can also be interpreted as contrastive or replacive negation, cf. (i).

- (i) Petra singt nicht LAUT, sondern leise.
 Petra sings not loudly, but quietly
 ‘Petra does not sing loudly, she sings quietly!’

I do not consider this interpretation here.

⁵Jacobs himself uses the example in (i), where *heimlich* ‘secretly’ functions, according to the classification used in this work, as a mental-attitude adverbial.

- (i) Luise bewundert Dr. No nicht **heimlich**.
 Luise admires Dr. No not secretly
 ‘Luise does not admire Dr. No secretly’
 =3.112 Jacobs (1982, p. 175)

I believe his argumentation can be carried over to manner adverbials.

juxtaposition of the two sentences is impossible.

In contrast, no such clash arises in (22).

- (22) Ich bin mir nicht sicher, ob Petra irgendwie singt. Sicher ist aber: Sie singt nicht LAUT. Wenn sie singt, dann singt sie nur leise.
 ‘I am not sure that Petra sings in some manner. One thing is sure, though: she does not sing loudly. When she sings, she sings only quietly’
 Cf. the parallel example (3.116) in Jacobs (1982)

In (22), the doubting of the proposition that *Petra sings in some manner*, which again also entails *Petra sings*, does not clash with the assertion that *Petra does not sing loudly*. This shows that the sentence containing the negation does not entail the proposition expressed by the sentential base, i.e. that Petra sings, but only conversationally implies it.

The fourth test uses the behaviour of manner adverbials when elicited by questions, cf. 3.4 and the example in (23).

TEST 3.4 Manner adverbials can be elicited by
How does sb. do sth.?

- (23) Wie tanzt Petra?
 ‘How does Petra dance?’
Wunderbar/Schön/Schlecht.
 ‘Wonderfully/beautifully/badly.’

Again, this test, like TEST 3.2, is not a very precise test for whether or not something is used as a manner adverbial, because very many other types of adverbials can also be used to answer this question, cf. e.g. (24), where an instrumental adverbial is used, or (25), where a degree adverbial is used.

- (24) Wie hat Fritz die Räuber aufgehalten?
 ‘How did Fritz delay the robbers?’
Mit einem Trick.
 ‘With a trick.’

- (25) Wie gefällt dir die Stadt?
 ‘How do you like this town?’
Sehr/Gut/Schlecht.
 very/well/badly
 ‘Very much/I like it/No so much.’

Two subclasses These four tests are satisfied by all manner adverbials. By taking a closer look at this group, it turns out that it can be further subdivided into two classes. This holds already for the opening example, repeated as (26) for convenience.

- (26) a. Peter hat **laut/leise/schnell/langsam** gesungen.
Peter has loudly/quietly/quickly/slowly sung
'Peter sang loudly/low/quickly/slowly.'
- b. Peter hat sich **intelligent/geschickt** verteidigt.
Peter has himself intelligently/skilfully defended
'Peter defended himself intelligently/skilfully.'

Although all the adverbials in (26) specify the manner in which the actions referred to by the verbal predicate are carried out, manner adverbials do not form a homogeneous group. The adverbials in (26-a) intuitively differ from those in (26-b) in that only the adverbials in (26-b) stand in a special relation to the agent of the sentence. In the following, I refer to the adverbials in (26-a) as pure manner adverbials, and to those in (26-b) as agent-oriented manner adverbials. I will discuss the two groups separately in sections 3.2.2 and 3.2.4.1, respectively.

3.2.2 Pure manner adverbials

The term pure manner adverbials is used to indicate that the semantic contribution of these adverbials to the sentence meaning is restricted to the specification of the manner in which the action referred to by the verbal predicate is carried out.⁶

Pure manner adverbials are those given in (27).

- (27) a. Klaus singt **laut/leise/schnell/langsam**.
Klaus sings loudly/quietly/quickly/slowly
- b. Klaus tanzt **wunderbar/hölzern**.
Klaus dances beautifully/woodenly

This group is heterogeneous in so far as that there are on the one hand, adjectives as those in (27-a), which specify only one dimension, either sound or speed, of the event in question, whereas those in (27-b) are more colourful and specify many dimensions at once.⁷ Most part-synonyms of the adjectives in (27-b) differ in exactly this respect, that is, besides sound or speed, they specify some other dimension of the event, adding colour, cf. the part-synonyms for *laut* 'loudly' in (28-a) and those for *schnell* 'quickly' in (28-b).

⁶The usage of this terminology is inspired by the use of the attribute *pure* for a certain subclass of manner adverbs in Ernst (1984, p. 94) and Ernst (1987).

⁷*Schnell* 'quickly' is discussed in more detail in 3.3.2.

- (28) a. Klaus singt **lautstark/lauthals**.
 Klaus sings at the top of his voice/vociferously
 b. Klaus klettert **flink/hurtig**.
 Klaus climbs swiftly/lightfooted

Note also that *laut* ‘loudly’, *leise* ‘quietly’, *schnell* ‘quickly’, *langsam* ‘slowly’ can specify the manner of a wide range of activities and do not have any requirements on the highest ranked argument of the sentence, whereas *lautstark* ‘at the top of one’s voice’ *lauthals* ‘vociferously’ *flink* ‘swiftly’ *hurtig* ‘lightfooted’ require animacy, cf. (29) vs (30).⁸

- (29) a. Der Stein rollt **laut/leise** den Berg runter.
 The stone rolled loudly/quietly/quickly/slowly down the hill.
 b. Der Stein rollt **schnell/langsam** den Berg runter.
 The stone rolled loudly/quietly/quickly/slowly down the hill.
 (30) a. *Der Stein rollt **lautstark/lauthals** den Berg runter.
 The stone rolled vociferously down the hill.
 b. *Der Stein rollt **flink/hurtig** den Berg runter.
 The stone rolled swiftly down the hill.

The implication given in TEST 3.5 holds for pure manner adverbials. Examples of the application of this test are given in (33) and (32).

TEST 3.5 A sentence of the form
SUBJECT VERB ADVERBIAL
 entails the sentence of the form
VERB_NOMINALIZATION COPULA PREDICATIVE,
 where the ADVERBIAL and the PREDICATIVE are realized by the same adjective.
 Cf. the implication [*i*] in Bartsch (1972, p.151)⁹

⁸In addition, *lautstark* is, in its attributive and predicative usage, restricted to event-nominalizations, and *lauthals* cannot be used predicatively or attributively.

⁹Bartsch’s formulation of this implication differs in that she does not use VERB_NOMINALIZATION, but instead uses either the nominalization of the verb as a process or as a state. Her examples thus look like (i).

- (i) a. Petra tanzt **schön**. (→b,c)
 ‘Petra dances beautifully.’
 b. Der Tanzvorgang ist schön.
 ‘The process of dancing is beautiful.’
 c. Das Tanzen ist schön.
 ‘The dancing is beautiful.’
 Cf. Bartsch (1972, p. 151), Bartsch (1976, p. 154)

- (31) a. Petra tanzt **schön**. (→b)
 ‘Petra dances beautifully.’
 b. Das Tanzen ist schön.
 ‘The dancing is beautiful.’
 Cf. Bartsch (1972, p. 151), Bartsch (1976, p. 154)

- (32) a. Der Fluß fließt **träge**. (→b)
 ‘The river runs sluggishly’
 b. Das Fließen ist träge.
 ‘The running is sluggish.’
 Cf. Bartsch (1972, p. 151), Bartsch (1976, p. 154)

To see that this entailment does not hold generally for sentences containing adverbial adjectives, consider (33).

- (33) a. Petra tanzt **wahrscheinlich**. (→ b)
 ‘Probably, Petra dances.’
 b. Das Tanzen ist wahrscheinlich.
 ‘The dancing is probable.’

3.2.3 Agent-oriented manner adverbials

All the boldfaced words in (34) serve as agent-oriented manner adverbials. Intuitively, they describe how a specific manner of executing an action reflects a specific temporary property of the agent.

- (34) a. Petra löst das Problem **intelligent/elegant**.
 Petra solves the problem intelligently/elegantly
 b. Sebastian hat Arnd **fies/gemein** getreten.
 Sebastian has Arnd nastily/meanly kicked
 ‘Sebastian kicked Arnd nastily/meanly.’

Agent-oriented manner adverbials pass all the tests for manner adverbials discussed in section 3.2. They differ from pure manner adverbials in that the highest ranked argument of sentences containing agent-oriented manner adverbials must always contain some sort of agency properties, cf. (35).

- (35) a. Der Stein rollte **laut/leise/schnell/langsam** den Abhang runter.
 The stone rolled loudly/quietly/quickly/slowly the hill down
 ‘The stone rolled loudly/quietly/quickly/slowly down the hill.’
 b. *Der Stein rollte **intelligent/geschickt** den Abhang runter.
 The stone rolled intelligently/skillfully the hill down
 ‘The stone rolled intelligently/skillfully down the hill.’

In particular, the agent must be in control of the action described by the verbal predicate. As a consequence of this agent-sensitivity, TEST 3.5 is not satisfied by agent-oriented manner adverbials, as the nominalizations need to have the respective agents as complements, cf. (36).

- (36) Peter schreibt **sorgfältig**. (\approx a, $\not\approx$ b)
 Peter writes carefully
 a. Peters Schreiben ist sorgfältig.
 ‘Peter’s writing is careful.’
 b. Das Schreiben ist sorgfältig.
 ‘The writing is careful.’
 Cf. Bartsch (1972, p.153), Bartsch (1976, p. 156f.)

One additional paraphrase test can be used to set apart agent-oriented manner adverbials from pure manner adverbials, cf. TEST 3.6 and the paraphrase patterns for sentence (37) vs (38) and (39).

TEST 3.6 Sentences with agent-oriented manner adverbials can be paraphrased by
It is ADJ of X, how X does something.
 Cf. [w₂] in Bartsch (1972, p. 150), Bartsch (1976, p. 153)

- (37) a. Peter verkaufte seine Bücher **klug**.
 Peter sold his books prudently
 b. Es war klug von Peter, wie er seine Bücher verkaufte. (\approx a)
 ‘The way in which Peter sold his books was prudent.’
- (38) a. Petra tanzt **wunderbar**.
 Petra dances beautifully
 b. Es ist wunderbar von Petra, wie sie tanzt. ($\not\approx$ a)
 ‘It is beautiful of Petra, how she dances.’
- (39) a. Der Reifen knallt **laut**.
 The tire blows loud
 b. Es ist laut von dem Reifen, wie er knallt. ($\not\approx$ a)
 ‘It is loud of the tire how it blows.’
 Cf. Bartsch (1972, p. 151), Bartsch (1976, p. 153)

The fact that TEST 3.6 cannot be used for (39) does not entirely depend on the fact that its subject is not volitional, cf. (40).

- (40) a. Petra singt **laut**.
 Petra sings loudly
 b. Es ist laut von Peter, wie er singt. ($\not\approx$ a)

‘It is loud of Petra how she sings.’

Although *laut* ‘loudly’ is used here in combination with a volitional subject, the paraphrase remains inappropriate.

3.2.4 Manner adverbials vs method-oriented and degree adverbials

3.2.4.1 Method-oriented adverbials

A group of adverbials that bears close similarity to manner adverbials is the group of method-oriented adverbials. Examples are given in (41).

- (41)
- a. Alma hat die Pflanzen **biologisch** kategorisiert.
Alma has the plants biologically categorized
‘Alma categorized the plants biologically.’
 - b. Noam hat die Daten **linguistisch** ausgewertet.
Noam has the data linguistically evaluated
‘Noam evaluated the data linguistically.’
 - c. Wilhelm hat die Nudeln **italienisch** zubereitet.
Wilhelm has the noodles Italian-style prepared
‘Wilhelm prepared the noodles Italian-style.’
 - d. Dirk hat seine CDs **alphabetisch** sortiert.
Dirk has his CDs alphabetically arranged
‘Dirk arranged his CDs alphabetically.’

I have called these adverbials method-oriented because they indicate the methods, principles or style used in doing something. That is, (42-a) can be interpreted as (42-b).

- (42)
- a. Fritz hat die Tiere **genetisch** klassifiziert.
Fritz has the animals genetically classified
‘Fritz classified the animals genetically.’
 - b. Fritz used genetics (genetic methods) in classifying the animals.

The adjectives that can serve as method-oriented adverbials are typically derived from nouns, cf. the adjectives in (41) and (42) and the nouns they derived from in (43).

- (43)
- a. *biologisch* Biologie ‘biology’, *linguistisch* Linguistik ‘linguistics’, *genetisch* Genetik ‘genetics’
 - b. *italienisch* Italien ‘Italia’
 - c. *alphabetisch* Alphabet

As the division of (43) into (43-a), (43-b) and (43-c) indicates, there are some typical domains from which method-oriented adverbials are derived: branches of science, geographic regions, or ordering principles as such.

While TEST 3.2 is satisfied by method-oriented adverbials, TEST 3.1 is not satisfied and therefore distinguishes between manner and method oriented adverbs, cf. the questionable paraphrases of the sentences from (41) given in (44).

- (44) a. ??Wie Alma die Pflanzen kategorisiert, das ist biologisch.
 ‘The way Alma categorizes the plants is biological.’
 b. ??Wie Noam die Daten auswertet, das ist linguistisch.
 ‘The way Noam evaluated the data is linguistical.’
 c. ??Wie Wilhelm die Nudeln zubereitet, das ist italienisch.
 ‘The way Wilhelm prepared the noodles, that was Italian-style.’
 d. ??Wie Dirk seine CDs sortiert hat, das war alphabetisch.
 ‘The way Dirk arranged his CDs was alphabetical.’

3.2.4.2 Manner adverbials vs degree adverbials

Manner adverbials must be distinguished from degree adverbials. Degree adverbials are used to indicate the extent to which somebody does something or the intensity with which somebody does something.

An example for an adjective serving as a degree adverbial is given in (45).¹⁰

- (45) Peter liebt sie **unglaublich**.
 Peter loves her unbelievably
 ‘Peter loves her very much.’

A good paraphrase for (45) is given in (46).

- (46) Peter liebt sie mit unglaublicher Intensität.
 ‘Peter loves her with an unbelievable intensity.’

In addition, the paraphrases for manner adverbials from TEST 3.2 and TEST 3.1 do not work for degree adverbials, cf. (47-a-b).

- (47) Peter liebt sie **unglaublich**. (≠a,b)
 Peter loves her unbelievably
 a. Peter liebt sie auf unglaubliche Art und Weise.
 ‘Peter loves her in an unbelievable manner.’
 b. Wie Peter sie liebt, das ist unglaublich.
 ‘The way in which Peter loves her is unbelievable.’

¹⁰The semantics of some particles is similar to that of degree adverbials. *Sehr* ‘very’ in (i), e.g., also answers the question *To what extent does he love her?*

- (i) Er liebt sie **sehr**.
 He loves her very.
 ‘He loves her very much.’

Note that the usage of an adjective as a degree adverbial is not determined by whether the modified verb is typically interpreted as a stative verb, as e.g. *lieben* ‘love’ in (47). The usage of *unglaublich* ‘unbelievably’ in (48) is a case in point.

- (48) Sie haben **unglaublich** gespielt.
They have unbelievably played
‘They played unbelievably.’

On its preferred interpretation, (48) is interpreted as (49-a) or (49-b).

- (49) a. Sie haben unglaublich gut gespielt.
They have unbelievably well played
‘They played unbelievably well.’
b. Sie haben unglaublich schlecht gespielt.
They have unbelievably badly played
‘They played unbelievably bad.’

Both times, *unglaublich* functions as degree adverbial, although *spielen* ‘play’ is a process verb.

Similar ambiguities exist for some adverbials in English, cf. *badly* and *perfectly* in (50), where (50-a) and (51-a) have manner readings, whereas (50-b) and (51-b) receive degree interpretations.

- (50) a. He sang **rather badly**.
b. He **badly** misrepresented my position.
= (4) in Huddleston & Pullum (2002, p. 721)
(51) a. She answered the question **perfectly**.
b. I **perfectly** understand your reasoning.
= (4) in Huddleston & Pullum (2002, p. 721)

To avoid terminological confusion, I will here briefly discuss a class of adverbial usages labelled *degree of perfection adverbs* in Eckardt (1998, p. 160). This class compromises adverbial usages of, for example, *perfekt* ‘perfectly’, *exzellent* ‘excellently’, *schön* ‘beautifully’, *schlecht* ‘badly’, *gut* ‘well’, *indiskutabel* ‘unacceptably’, *halb* ‘halfway’, *schlampig* ‘sloppily’ and *korrekt* ‘correctly’. Note that according to the tests used in this work, these are all adjectives serving as manner adverbials. This can be seen by looking at the three example sentences that Eckardt uses to illustrate this group, cf. (52), which I will use for discussion.

- (52) a. Olga spielte die Sonate **perfekt**.
Olga played the sonata perfectly
b. Paul hat den Handstand **mittelgut** ausgeführt.
Paul has the handstand moderately well performed
‘Paul performed the handstand moderately well.’

- c. Tim baute das Zelt **schlampig** auf.
 Tim built the tent sloppily up
 ‘Tim put up the tent sloppily.’
 Cf. (1,5,7) in Eckardt (1998, p. 160)

The three sentences in (52) all satisfy the two standard tests for manner adverbials, TEST 3.1 and TEST 3.2, cf. the paraphrase in (53) to (55).

- (53) a. Wie Olga spielt, das ist perfect. [TEST 3.1]
 ‘The way Olga plays is perfect.’
 b. Olga spielt auf perfekte Art und Weise. [TEST 3.2]
 ‘Olga plays in a perfect manner.’
- (54) a. Wie Paul den Handstand ausführt, das ist mittelgut. [TEST 3.1]
 ‘The way Paul performed the handstand is moderately good.’
 b. Paul führt den Handstand auf mittelgute Art und Weise aus. [TEST 3.2]
 ‘Paul performs Handstands in a moderately good manner.’
- (55) a. Wie Tim das Zelt aufbaute, das war schlampig. [TEST 3.1]
 ‘The way Paul put up the tent was sloppy.’
 b. Tim baute das Zelt auf schlampige Art und Weise auf. [TEST 3.2]
 ‘Tim put up the tent in a sloppy manner.’

Eckardt (1998, p. 161) argues that these adverbs “say something about the degree of perfection to which a certain action has been performed”. This suggests that they form a subgroup within the group of manner adverbials whose defining characteristic is a common scale on which they map, namely some perfection-scale. In this sense, *fast* and *slow* also form a subgroup of manner adverbials, since they both map to the speed-scale. However, in the case of the adverbials given by Eckardt, there seems to be no common single scale on which they are mapped. Consequently, its members can co-occur without any semantic clashes, cf. e.g. (56).

- (56) Gaspar hat die Sonate **perfekt** gespielt, allerdings nicht **schön**.
 Gaspar has the sonata perfectly played, but not beautifully
 ‘Gaspar played the sonata perfectly, but not beautifully’

Therefore, I subsume all the adverbials Eckardt calls ‘degree of perfection adverbs’ under the group of manner adverbials.

3.2.5 Manner modification vs secondary predication

Manner modification differs from secondary predication. Secondary predication can be expressed either through *resultatives*, *depictives* or *implicit resultatives*. I will discuss each group in turn.

3.2.5.1 Manner adverbials vs resultatives

Resultatives can be clearly differentiated from manner modification. Typical examples for resultatives are given in (57).

- (57)
- a. Er putzte die Böden **blank**.
He cleaned the floors shining
'He cleaned the floors till they shone.'
 - b. Er malte die Wand **blau**.
He painted the wall blue
'He painted the wall with blue colour.'
 - c. Er schmirgelte die Schwerter **glatt**.
He sandpapered the swords smooth
'He sandpapered the swords so they were smooth.'
 - d. Er aß den Teller **leer**.
He ate the plate empty.
'He ate everything on his plate'
 - e. Er kochte die Kartoffeln **gar**.
He cooked the potatoes done.
'He cooked the potatoes so that they are good'

Sentences containing resultatives allow paraphrases as given in TEST 3.7, an example of its application is given in (58).

TEST 3.7 A sentence containing an adjective serving as resultative and having the form

SUBJECT VERB OBJECT RESULTATIVE,

can be paraphrased with the help of the schema

SUBJECT VERB OBJECT, so that as a result, OBJECT is ADJECTIVE.

- (58)
- a. He painted the wall **blue**.
 - b. He painted the wall, so that as a result, the wall is blue. (\approx a)

This paraphrase is not available for sentences containing manner adverbials, cf. e.g. (59).

- (59)
- a. He painted the wall **quickly**.
 - b. He painted the wall, so that as a result, the wall is quick. ($\not\approx$ a)

Similarly, the paraphrases from TEST 3.1 and TEST 3.2 never work for resultative, cf. (60) for (59-a).

- (60)
- a. Er putzte die Böden **blank**.
'He scrubbed the floors shining.'
 - b. Wie er den Boden putzt, das ist **blank**. ($\not\approx$ a)

- ‘The way he scrubbed the floors was shining.’
 c. ??Er putzt die Böden auf blanke Art und Weise. (\neq a)
 ‘He scrubbed the floors in a shining manner.’

Due to this mutual impossibility to apply the respective paraphrases, resultatives and manner adverbials are always easily distinguished.

3.2.5.2 Manner adverbials vs depictives

Manner adverbials share their position in a sentence with depictives, which predicate over the subject or the object, cf. (61).

- (61) a. Er ißt das Fleisch **langsam**. [manner adverbial]
 He eats the meat slowly
 b. Er ißt das Fleisch **roh**. [object depictive]
 He eats the meat raw
 c. Er ißt das Fleisch **nackt**. [subject depictive]
 He eats the meat nude

However, the semantics of manner adverbials and depictives are clearly different. In particular, depictives always allow a paraphrase along the lines of TEST 3.8, cf. (62) for object depictives and (63) for subject depictives.

TEST 3.8 A sentence of the form
SUBJECT VERB OBJECT DEPICTIVE
 can be paraphrased by
SUBJECT VERB OBJECT, while SUBJECT/OBJECT is PREDICATIVE,
 where DEPICTIVE and PREDICATIVE are realized by the same adjective

- (62) a. Er ißt das Fleisch **roh**. [object depictive]
 He eats the meat raw
 b. He eats the meat while it is raw. (\approx a)
- (63) a. Er ißt das Fleisch **nackt**. [subject depictive]
 He eats the meat nude
 b. He eats the meat, while he is nude. (\approx a)

In general, TEST 3.1 and TEST 3.2 never work for depictives, cf. (64) and (65).

- (64) a. Er ißt das Fleisch **roh**. [object depictive]
 He eats the meat raw
 b. Wie er das Fleisch ißt, das ist roh. (\neq a)
 ‘The way he eats the meat is raw.’

- c. Er ißt das Fleisch auf rohe Art und Weise.
'He eats the meat in a raw manner.' (≠ a)
- (65) a. Er ißt das Fleisch **nackt**. [subject depictive]
He eats the meat nude.
b. Wie er das Fleisch ißt, das ist nackt. (≠a)
The way he eats the meat is nude
c. Er ißt das Fleisch auf nackte Art und Weise. (≠a)
He eats the meat in a nude manner

This clear differentiation also holds for the agent-oriented manner adverbials, which additionally can be distinguished from depictives through their different inference patterns, cf. (66) vs (67).

- (66) a. Er flüchtete **geschickt** aus dem Lager. (→ a,b)
'He fled ingeniously from the camp'
b. Sein Handeln war geschickt.
'His acting was ingenious.'
c. Sein geschicktes Handeln...
'His ingenious acting ...'
Cf. Bartsch (1972, p.152), Bartsch (1976, p.156)
- (67) a. Er flüchtete **krank** aus dem Lager. (↯ a,b)
'He fled sick from the camp'
b. Sein Handeln war krank.
'His acting was sick.'
c. Sein krankes Handeln...
'His sick acting ...'
Cf. Bartsch (1972, p.152), Bartsch (1976, p.156)

Complications The difference between depictive and manner adverbials becomes blurred when the adjective denotes a mental state. Examples for this kind of adjectives are *traurig* 'sad', *nervös* 'nervous' and *freudig* 'glad'. I will refer to these types of adjectives as *psychological adjectives*. In many circumstances, these adjectives allow for all three paraphrases, cf. (68).

- (68) Gudrun ist **traurig** nach Hause gegangen.
Gudrun is sad towards home gone
'Gudrun went home sad' or 'Gudrun sadly went home'
- a. Gudrun ging nach Hause, während sie traurig ist.
'Gudrun walked home while she was sad.'
- b. Wie Gudrun nach Hause geht, das ist traurig

- ‘The way Gudrun walked home was sad.’
 c. Gudrun ging auf traurige Art und Weise nach Hause
 ‘Gudrun walked home in a sad manner.’

As the translation indicates, in English the different usages can sometimes be told apart via the absence or presence of the *-ly* suffix. For a detailed account of the subtle semantic differences of these two usages, cf. Geuder (2004).

3.2.5.3 Implicit resultatives

Consider the sentence in (69) and the two different interpretations given in (70).¹¹

- (69) Julia schmückte die Festtafel **elegant**.
 Julia decorated the table elegant.
- (70) a. The way Julia decorated the table was elegant.
 b. The decoration of the the table was elegant.

In the reading paraphrased in (70-a), *elegant* serves as a manner adverbial (e.g. Julia’s movements etc. were elegant). In contrast, in the reading paraphrased in (70-b), *elegant* is a secondary predicate. In this reading, the manner of Julia’s movements is not characterized. This type of secondary predication differs from resultatives and depictives as discussed in 3.2.5 in that the object over which *elegant* predicates is not given in the sentence itself. Therefore, I refer to them here as *implicit resultatives*.¹² Note that there are also many cases where an adjective can only be used as an implicit resultative and is not available for a manner reading, cf. e.g. (71).

- (71) Sie beluden den Wagen schwer.
 They loaded the cart heavy
 ‘They loaded the cart until it was heavy.’
 =(8a) in Geuder (2000, p. 23)

Ambiguity or vagueness A question that arises for sentences like (69) is whether they also allow for an interpretation that includes both readings given in (70), cf. the interpretation in (72).

¹¹For the differentiation of the two readings, cf. (Dölling 2003, Eckardt 1998, Eckardt 2003, Geuder 2000).

¹²Geuder (2000, chapter 3) uses the term *resultative adverbs* for the usages which I call implicit resultatives. Geuder’s terminology reflects the fact that in English, wordforms interpreted as implicit resultative are often morphologically adverbs, while the wordforms used for resultatives are adjectives. This allows him to contrast *resultative adjectives* with *resultative adverbs*. This terminology does not make sense in German, as the wordforms used for resultatives and implicit resultative are in both cases adjectives, not adverbs.

- (72) Julia looked elegant and moved elegantly while decorating the table and the resulting arrangement of the table is elegant, too.

In the case of (69), such an interpretation seems impossible. This points to a true ambiguity in the usage of *elegant* as either manner adverbial or predicative. This view is further strengthened by the fact that we can conceptually distinguish between (a) a person decorating a table and looking/moving elegant while doing so and, (b) a person decorating a table so that the table looks elegant but not looking/moving elegantly while doing so.¹³

In many other cases it seems impossible to distinguish between two different readings, and manner and resultative readings are mixed into one, cf. the following sentence with *decorate*.¹⁴

- (73) Arnd hat das Schaufenster **liebevoll** dekoriert.
Arnd has the display lovingly decorated
'Arnd decorated the display lovingly.'

In contrast to (69), it is not possible to conceptually distinguish two different readings. What seems responsible for this is that the adverbial here cannot be construed with the agent's movements/looks alone, that is, the agent does not look/move *liebevoll* 'lovingly'. On the other hand, the adjective is not only an implicit resultative, either: if the result is *liebevoll*, the manner of bringing about this result was *liebevoll*, too.

Other examples where a dissociation seems impossible are given in (74) and (75).

- (74) Er hat das Zelt **schlampig** aufgebaut.
He has the tent sloppily put.up
'He put up the tent sloppily'
- (75) Er hat das Buch **kongenial** uebersetzt.
He has the book congenially translated
'He congenially translated the book'

¹³*Elegant* used with a manner reading does not necessarily mean that the event in question must have been openly perceivable as 'looking elegantly', cf. such usage as in (i).

- (i) Er hat die Einnahmen **elegant** am Finanzamt vorbeigeschleust.
He has the profits elegantly at.the tax.office past.channeled
'He elegantly channeled the profits past the tax office'

¹⁴Sometimes, *decorate*-sentences can exclude the manner interpretation, cf. (i).

- (i) a. Arnd hat das Schaufenster **weihnachtlich** dekoriert.
Arnd has the display Christmassy decorated
'Arnd decorated the display Christmassy.'
- b. Arnd hat das Schaufenster auf weihnachtliche Art und Weise dekoriert. (≠ a)
'Arnd decorated the display in a Christmassy manner.'

In both (74) and (75) it is conceptually impossible that the manner is *schlampig/kongenial*, while the resultant implicit object is not and vice versa.

Quirk, Greenbaum, Leech & Svartvik (1985, p. 560) speak of *blends* in the cases of similar English examples. The example sentences that they use are the following:

- (76) a. She fixed it **perfectly**. [in such a way that it was perfect - manner and result]
 b. He grows chrysanthemums **marvellously**. [in such a way that the results are good - manner and result]
 c. The soldiers wounded him **badly**. [in such a way and to such an extent that it resulted in his being in a bad condition - manner, intensifier and result]

Cf. Quirk et al. (1985, p. 560), comments theirs.

The availability of the two readings depends on the combination of verb and adjective both. To have an implicit resultative reading, the verb must be a verb of change and there must be either an affected or an effected entity involved. Similarly, to have manner readings, the adjective involved must fulfill the minimal requirement that it can be predicated over other things besides physical objects.¹⁵

3.2.6 Manner adverbials and statives

Manner adverbials do not combine with all statives, cf. (77-a) for *ähneln* ‘resemble’, (77-b) for *heißen* ‘be called’ and (77-c) for *besitzen* ‘own’ (cf. the examples in Maienborn (2003a, p. 89.)).

- (77) a. *Paul ähnelt **laut/wunderbar** Romy Schneider.
 Paul resembles loudly/wonderfully Romy Schneider.
 b. *Paul ähnelt **elegant/intelligent** Romy Schneider.
 Paul resembles elegantly/intelligently Romy Schneider.
- (78) a. *Das Unihochhaus heißt jetzt **laut/wunderbar**
 The University skyscraper is called now loudly/wonderfully
 Cityhochhaus.
 City Scyscraper
 b. *Das Unihochhaus heißt jetzt **elegant/intelligent**
 The University skyscraper is called now elegantly/intelligently
 Cityhochhaus.
 City Scyscraper

¹⁵Adjectives that are restricted in this way are, for example, colour- adjectives (*blue*, *red* etc.) and adjectives specifying physical properties like eg. *viereckig* ‘rectangular’ or *dünn* ‘thin’.

- (79) a. *Jochen besitzt **laut/wunderbar** viel Geld.
 Jochen owns loudly/wonderfully much money.
 b. *Jochen besitzt **elegant/intelligent** viel Geld.
 Jochen owns elegantly/intelligently much money.

A subgroup of statives, the *positionals* (This term is taken from Dik (1975)), combines with manner adverbials. Typical positionals are verbs like *sitzen* 'sit', *stehen* 'stand', *liegen* 'lie', *hocken* 'squat' and *hängen* 'hang'.¹⁶ Below is an example with *sitzen* 'sit'.

- (80) Sebastian sitzt **kerzengerade/hippelig** auf dem Stuhl.
 Sebastian sits erect/fidgety in his chair

Of the four adjectives used in (77) to demonstrate the incompatibility of statives with manner modification, only *elegant* 'elegantly' can be used with positionals. This shows that the range of adjectives that can be used with positionals is relatively small. The sentence (81) passes both standard tests, cf. (81-a) for TEST 3.1 and (81-b) for TEST 3.2.

- (81) Sebastian sitzt **elegant** auf seinem Stuhl. (\approx a,b)
 'Sebastian sits elegantly in his chair.'
 a. Wie Sebastian auf seinem Stuhl sitzt, das ist elegant.
 'The way Sebastian sits on his chair is elegant.'
 b. Sebastian sitzt auf elegante Art und Weise auf seinem Stuhl.
 'Sebastian sits in an elegant manner in his chair.'

As (82) shows, positionals do not take manner adverbials which require dynamic eventualities.

- (82) *Sebastian sitzt **rhythmisch** auf dem Stuhl.
 Sebastian sits rhythmically in his chair

Manner modification and non-positional D-statives Maienborn (2003a, p. 88ff) argues that manner adverbials can be applied to all *Davidsonian statives* (D-statives).¹⁷ Importantly, Maienborn's (2003a) conception of manner adverbials differs from the one used in this work. For her, all modifiers that relate to the internal functional structure of a situation fall into a more general group of manner adverbials. This group comprises instrumentals and comitatives, for example. In the discussion here, I will use my narrower conception of manner adverbials.

Above, I already discussed the positionals, which Maienborn classifies as D-Statives. The other members of this class are verbs such as *schlafen* 'sleep', *ruhen* 'relax',

¹⁶This corresponds to the *position* subgroup of D-statives in Maienborn (2003a).

¹⁷Maienborn (2003a, pp. 54ff) defines the class members by (a) their ability to appear in the progressive form in English (as opposed to *Kimian statives* like *know*, *hate* etc.) and (b) their behaviour with regard to their subintervals (allowing a distinction from process verbs).

warten ‘wait’, *gl”anzen* ‘shine’, *kleben* ‘stick’, *ankern* ‘anchor’, *parken* ‘park’ (cf. Maienborn (2003a, p. 54)). Maienborn (2003a) uses (83) as evidence for her claim that these verbs take manner adverbials.

- (83) Wie hat Bardo geschlafen? ‘How did Bardo sleep?’
- a. Bardo hat **gut/ausgezeichnet/wunderbar/schlecht** geschlafen.
Bardo has well/superbly/wonderfully/badly slept
‘Bardo slept well/superbly/wonderfully/badly’
 - b. Bardo hat **fest/tief/unruhig** geschlafen.
Bardo has soundly/deeply/badly slept
‘Bardo slept soundly/soundly/troubled’
- Cf. 72 in Maienborn (2003a, p. 90)

The adjectives in (83-a) can be argued to be non-manner adverbials, as they do not pass TEST 3.1 and TEST 3.2, cf. (84).

- (84) Bardo hat **gut/ausgezeichnet/wunderbar/schlecht** geschlafen. (≠a,b)
- a. Wie Bardo geschlafen hat, das war gut/ausgezeichnet/wunderbar/schlecht
‘The way Bardo slept, that was good/superb/wonderful/bad.’
 - b. Bardo hat **auf gute/ausgezeichnete/wunderbare/schlechte Art und Weise** geschlafen.
‘Bardo slept in an good/superb/wonderful/bad manner.’

This failure to be paraphraseable in this way is due to the fact that all four adjectives in this usage are nothing more than stock answers to the conventional morning question ‘How did you sleep’ and do not in fact characterize a specific manner of sleeping. In contrast, the paraphrases imply that the manner of sleeping was in some way under the active control of the agent, as it would be for example in a theatrical performance.

The adjectives in (83-b) are also not manner adverbials, as they do not pass the relevant test, cf. (85) for *fest/tief* ‘soundly’, which fail TEST 3.1 and TEST 3.2.

- (85) Bardo hat **fest/tief** geschlafen. (≠a,b)
- a. Wie Bardo geschlafen hat, das war fest/tief.
‘The way Bardo slept was thick/deep.’
 - b. Bardo hat **auf feste/tiefe Art und Weise** geschlafen.
‘Bardo slept in a thick/deep manner.’

Both *fest* ‘thickly’ and *tief* ‘deeply’ do resemble degree modification more so than manner modification. In addition, the fact that they can be used interchangeably reveals the idiomaticity of their use.

On a more speculative note, it might be possible that all the adverbials in (83) are best understood as attributes of hidden nominal arguments (for the assumption of these hidden nominal arguments, cf. e.g. the discussion of the lexical relational structure of

unergative verbs in Hale & Keyser (1993)).¹⁸ That is, (86-a) should be reanalyzed as (86-b).

- (86) a. Bardo hat **ausgezeichnet** geschlafen.
 Bardo has superbly slept
 ‘Bardo slept superbly.’
 b. Bardo hat **einen ausgezeichneten Schlaf** geschlafen.
 Bardo has a superb sleep slept
 ‘Bardo slept a superb sleep.’

This analysis could then also be used for other unergative verbs when they co-occur with the same adverbials, cf. e.g. (87) for *essen* ‘eat’.

- (87) a. Wir haben **ausgezeichnet** gegessen.
 We have superbly eaten
 ‘We ate superbly.’
 b. Wir haben **ein ausgezeichnetes Essen** gegessen.
 We have a superb meal eaten
 ‘We had a superb meal.’

Schlafen ‘sleep’ cannot be combined with other standard manner adverbials, cf. (88).

- (88) a. *Bardo hat **laut/langsam** geschlafen.
 Bardo has loudly/slowly slept
 b. *Bardo hat **elegant/intelligent** geschlafen.
 Bardo has elegantly/intelligently slept

All other non-positional D-statives are either more restricted or equally restricted in their possibilities for manner modification.

Other idiosyncrasies Some other statives allow for adverbial modifiers that seem to have some things in common with manner modification, cf. (89).

- (89) a. Er weiß die Antwort **genau**.
 He knows the answer exactly
 b. Er glaubt **fest** an ihre Unschuld.
 He believes firmly in her innocence
 c. Er liebt/haßt sie **bedingungslos**.
 He loves/hates her unconditionally/unquestionably
 d. Er ähnelt ihr nur **oberflächlich**.
 He resembles her only superficially

These adjectives, again, are not manner adverbials. This can be easily seen in the case of (89-a) and (89-b), since here TEST 3.1 and TEST 3.2 cannot be used, cf. (90) and

¹⁸This analysis was suggested to me by the incredible Stefan Sudhoff.

(91).

- (90) Er weiß die Antwort **genau**. ($\not\approx$ a,b)
 He knows the answer exactly
- a. Er weiß die Antwort auf genaue Art und Weise.
 ‘He knows the answer in a sure manner.’
 - b. Wie er die Antwort weiß, das ist genau.
 ‘The way he knows the answer is exact.’

- (91) Er glaubt **fest** an ihre Unschuld. ($\not\approx$ a,b)
 He believes firmly in her innocence
- a. Er glaubt auf feste Art und Weise an ihre Unschuld.
 ‘He believes in her innocence in a firm manner.’
 - b. Wie er an ihre Unschuld glaubt, das ist fest.
 ‘The way he believes in her innocence is solid.’

It is more difficult to see this in the case of (92) and (93).

- (92) Er liebt/haßt sie **bedingungslos**. ($? \approx$ a,b)
 He loves/hates her unconditionally/unquestionably
- a. Er liebt/haßt sie auf bedingungslose Art und Weise.
 ‘He loves/hates her in an unconditional manner.’
 - b. Wie er sie liebt, das ist bedingungslos.
 ‘The way he loves her is unconditional.’

- (93) Er ähnelt ihr **oberflächlich**. (\approx a, $? \approx$ b)
 He resembles her superficially.
- a. Er ähnelt ihr auf oberflächliche Art und Weise.
 ‘He resembles her in a superficial manner.’
 - b. Wie er ihr ähnelt, das ist oberflächlich.
 ‘The way he resembles her is superficial.’

Apparently, the paraphrase tests in these two cases do not back up the intuition that these are not instances of manner modification beyond all doubt.¹⁹ These cases nevertheless remain isolated, since it is not otherwise possible to modify these verbs with the help of adjectives that pass the paraphrase tests.

¹⁹Note, though, that TEST 3.5 cannot be applied to (93), thus excluding its usage as a pure manner adverbial.

3.3 Non-manner adverbials

3.3.1 Mental-attitude adverbials

Mental-attitude adverbials describe the attitude of the agent with regard to the activity described by the verbal predicate, cf. the examples in (94).

- (94) a. Martha geht **widerwillig** zur Schule.
Martha goes reluctantly to school
'Martha goes to school reluctantly.'
- b. Fritz schummelt **absichtlich**.
Fritz cheats on purpose
- c. Der Mann spielt **heimlich** Fußball.
The man plays secretly soccer
'The man secretly plays soccer.'

Widerwillig 'reluctantly' in (94-a), for example, does not primarily characterize the manner of going to school, but Martha's attitude towards going to school. That this attitude has repercussions on the manner of going is secondary. Mental-attitude adverbials are agent-oriented, but in contrast to the agent-oriented manner adverbials discussed in section 3.2.3 they have scope over negation, cf. (95), where (95-a) implies (95-b).²⁰

- (95) a. Martha geht **widerwillig/absichtlich/heimlich** nicht zur Schule. (→ b)
Martha goes reluctantly/on.purpose/secretly not to school
'Martha reluctantly/on purpose/secretly does not go to school.'
- b. Martha geht nicht zur Schule.
'Martha does not go to school.'

Mental-attitude adverbials vs depictives The interpretation of mental-attitude adverbials differs from that of subject depictives. Although subject depictives can also be used to describe the state of mind of the subject, this state of mind is not related to the event denoted by the verbal predicate, cf. (96).

- (96) a. Martha geht **glücklich** zur Schule.
Martha goes happily to school

²⁰Regarding the example sentence in (94), the addition of a sentence negation to (94-c), cf. (i), is not possible for pragmatic reasons.

- (i) ?Der Mann spielt **heimlich** nicht Fußball.
The man plays secretly not soccer
'The man secretly does not play soccer'

To do something secretly only makes sense if the lack of doing it leads to some sort of sanctions, a consequence that is hard to imagine in the case of not-playing soccer.

‘Martha goes to school happily.’

In other words, (96) does not mean or imply that the fact that Martha goes to school has anything to do with the fact that Martha is happy, whereas in the case of mental-attitude adverbials there is always a close connection between the adverbial and the event denoted by the verb, cf. (94).

A further contrast between mental-attitude adverbials and depictives is that latter force an interpretation as a shortened adverbial sentence when outscoping negation, cf. (97).

- (97) Er kam **krank** nicht aus dem Urlaub zurück.
 He came sick not from the holiday back
 ‘Because he was sick, he did not return from his vacations.’
 =117a in Pittner (1999, p.105)

If an interpretation as a shortened adverbial sentence is not possible, the sentence cannot be interpreted, cf. (98).

- (98) *Er kam **glücklich** nicht aus dem Urlaub zurück.
 He came happily not from the holiday back

These two criteria are usually sufficient to distinguish between the two different usages.

Mental-attitude adverbials and passive sensitivity In English, the usage of MAAs in passive sentences leads to ambiguities, cf. (99) with the two possible interpretations (99-a) and (99-b).²¹

- (99) Joe was **reluctantly** hit by Fred.
 a. Joe was reluctant (to receive the hit).
 b. Fred was reluctant (to hit).

In German, a similar ambiguity does not exist. In standard passive sentences, MAAs have to be interpreted with regard to the agent, not the subject, cf. (100).

- (100) Uta wird **widerwillig/heimlich/absichtlich** von Julia geschlagen.
 Uta PASS-AUX reluctantly/secretly/on purpose by Julia hit
 ‘Uta is reluctantly/secretly/on purpose being hit by Julia.’

In (100), it is always Julia who acts reluctantly, secretly or on purpose, respectively. If the adverbial is meant to construe with the subject, a different construction has to be used, the so-called *lassen-passiv*. cf. (101).

²¹For formal analyses of this phenomenon, cf. e.g. Wyner (1998) or Eckardt (1998).

- (101) Uta läßt sich **widerwillig/gerne/absichtlich** von Julia schlagen.
 Uta lets herself reluctantly/gladly/on purpose by Julia hit
 ‘Uta is reluctantly/secretly/on purpose being hit by Julia.’

Differing from (100), it is Uta who acts reluctantly, gladly or on purpose, respectively. This difference in behaviour between the English and the German sentences suggests that the passive-sensitivity is not rooted in the semantics of the adverbials in question, but rather the nature of the English passive. I will therefore not discuss this problem further.²²

3.3.2 Event-external adverbials

Only adjectives that allow a temporal interpretation can be used as event-external adverbials, for example *schnell* ‘quickly’ and *langsam* ‘slowly’.²³ Maienborn (2003a) exemplifies the event-external usage of *schnell* ‘quickly’ with the help of sentence (102) on the interpretation given in (103).

- (102) Jochen schmückte **schnell** den Weihnachtsbaum.
 Jochen decorated quickly the Christmas.tree
 ‘Jochen quickly decorated the Christmas tree.’
 = (82) in Maienborn (2003a, p. 94)
- (103) The duration of Jochen’s decorating_the_Christmas_tree was short.
 Cf. Maienborn (2003a, p. 93)

In addition to the reading given in (103), (102) has, according to Maienborn, an additional reading, given in (104).²⁴

²²In other languages, this kind of ambiguity is expressed by yet other means. Mandarin Chinese, for example, uses the position of the adverbial to express whether it is supposed to construe with the subject or the agent, cf. (i).

- (i) a. Zhāngsān gāogāoxìngxìng de bèi Lǐsì kuājiǎng.
 Zhangsan happily DE BEI Lisi praise.
 ‘Zhangsan was happy in being praised by Lisi’
 b. Zhāngsān bèi Lǐsì gāogāoxìngxìng de kuājiǎng.
 Zhangsan BEI Lisi happily DE praise.
 ‘Zhangsan was praised in a happy way by Lisi.’
 = (21) in (Li & Thompson 1981, p.325)

²³The group of event-external adverbials is first described in Frey & Pittner (1998), Pittner (1999) and Frey & Pittner (1999), where the adverbials are referred to as event-related adverbials ‘ereignisbezogene Adverbiale’.

²⁴Maienborn (2003a) assumes that, syntactically, event-external adverbials are located at the periphery of the VP. She leaves it open whether this reading is also event-external or not, that is, whether the base position of the adjective is also located at the periphery of the verb phrase or perhaps higher up in the IP.

- (104) The distance in time between some contextual reference point and the beginning of the decoration event was short.
Cf. Maienborn (2003a, p. 93, fn. 21)

I refer to the reading of *schnell* under the interpretation in (104-a) as holistic reading, since it specifies the event of Jochen decorating the Christmas tree as a whole, to the reading under the interpretation in (104-b) as inchoative reading.

It is important to see the difference between the holistic reading and the manner reading of *schnell*. Maienborn (2003a), who speaks of the difference between event-external and event-internal reading, illustrates the event-internal reading with the help of the sentence (105).

- (105) Jochen schmückte den Weihnachtsbaum **schnell**.
Jochen decorated the Christmas.tree quickly
= (82) in Maienborn (2003a, p. 94)

According to Maienborn, the preferred interpretation of *schnell* in (105) is that *schnell* “evaluates the length of the subevents of processes and accomplishments; [. . .]. The interpretation of (105) on this reading is that Jochen executed the discrete acts which constitute the decoration of a Christmas tree (application of ornaments, fixation of the candles and distribution of tinsel) quickly, while the event as a whole might well have taken its time” (Maienborn 2003a, pp. 93f.)[my translation].

In addition, she comments that “By specifying the speed of the situation-internal progression of events, it also characterizes the manner in which the situation under discussion unfolds. This, in my view, explains why *schnell* is often counted among the manner adverbs.” (Maienborn 2003a, p. 94)[my translation]

This latter comment, however, partly contradicts the former, since, if the event-internal reading of *schnell* specifies the speed of the situation-internal progression of events as well as the speed of the situation-internal events themselves, the duration of the whole situation must have been short, too.

In the literature, Tenny (2000) also argues for a three-way distinction of the adverbial usage of *schnell* ‘quickly’. Tenny (2000) distinguishes two usages for *quickly* as a rate adverbial: one higher reading, corresponding to the inchoative reading discussed above, and one lower reading. In addition, she also assumes a manner reading. She illustrates the difference between the lower rate reading (‘true rate modification’) and the manner reading (‘pure manner modification’) with the help of (106), where the respective interpretations are given in (106-a) and (106-b).²⁵

- (106) Kazuko moved **quickly** to the window.
a. Kazuko moved her body in quick motions while progressing to the window, although her traversal of the path to the window may not have been a fast one.

²⁵She herself states that the pure manner reading in her example is odd.

- b. Kazuko's traversal of the path to the window was fast.
= (66) in Tenny (2000)

The two different interpretations of (106) as (106-a) and (106-b) are not very convincing. Although it is true that a verb such as *move to* allows, in a similar way as e.g. *swim* and *run*, modification of the path of movement, as well as of the manner of the movement (cf. the section on *Zweibewegungsverben* 'double-movement verbs' in Engelberg (2000b, pp. 294ff)), *quickly* is not a good candidate to demonstrate such a difference. On the contrary, a *quick* manner of movement does, in the case of swimming, usually directly correlate with a *quick* traversal of the path in question.

The event-external reading of *langsam* 'slowly' is exemplified by (107).

- (107) Mach **langsam** die Tür zu!
Close slowly the door PART
'It is high time you close the door!'

The event-external reading of *langsam* 'slowly' has, as the translation shows, a very idiosyncratic meaning, and in this it differs from *schnell* 'quickly', where the different readings are closely related.

Interestingly, the different linear position of *schnell* in (102) and (105) already shows that whether we distinguish two or even three possible adverbial functions for *schnell* 'quickly', and whatever the exact nature of these differences is, the different readings are somehow connected to the position of the adverbial in the sentence. I will therefore relegate all further discussion of these examples to the following two chapters.

3.3.3 Subject-oriented adverbials

The adverbials in the following sentences all serve as subject-oriented adverbials.²⁶ Informally, the speaker uses these adverbials to establish a link between a specific property or a specific reasoning of the subject to the action as described by the rest of the sentence.

- (108) **Idiotischerweise/Arroganterweise/Taktvollerweise** hat er seine
Idiotically/Arrogantly/Tactfully has he his
Liebesbriefe ins Netz gestellt.
loveletters on.the net put
'Idiotically/arrogantly/tactfully, he has put his loveletters on the net.'

²⁶This notion of subject-oriented adverbials corresponds to that of (Parsons 1990). In the terminology of Ernst (2001), the adverbials discussed here correspond to the clausal reading of agent-oriented adverbs, which form a subgroup of his subject-oriented adverbials.

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In German, adverbs formed from adjectives by adding the suffix *-weise* are typically used as subject-oriented adverbials. Other frequent adverbs that can serve as subject oriented adverbials are given in (109).

- (109) klugerweise ‘wisely’, intelligenterweise ‘intelligently’,
unhöflicherweise ‘rudely’, geschickterweise ‘cleverly’

Sentences with subject-oriented adverbials allow the paraphrase in (110), that is, they relate things to propositions (cf. Parsons (1990, p. 64)).

TEST 3.9 A sentence containing an adjective serving as subject-oriented adverbial can be paraphrased with the help of the following construction:
It was ADJECTIVE of him, that he did something.

The result of using 3.9 for (118) is given in (110).

- (110) Es war idiotisch/intelligent/arrogant/klug/unhöflich von ihm, daß er seine Liebesbriefe ins Netz gestellt hat.
‘It was idiotic/arrogant/tactful of him to put his loveletters on the net.’

TEST 3.9 allows to distinguish subject-oriented adverbials from mental-attitude adverbials, since mental-attitude adverbials do not satisfy this test, cf. e.g.(111).

- (111) a. Fritz ist **widerwillig** zur Schule gegangen.
Fritz is reluctantly to school gone
‘Fritz went to school reluctantly.’
b. ?Es war widerwillig von Fritz, daß er zur Schule gegangen ist. (\neq a)
‘It was reluctant of Fritz, that he went to school.’

Subject-oriented adverbials are all factive, cf. (112), where (112-a) implies (112-b).

- (112) a. **Idiotischerweise** hat er die Tür offen gelassen. (\rightarrow b)
Idiotically has he the door open let
‘Idiotically, he left the door open.’
b. Er hat die Tür offen gelassen.
‘He left the door open.’

As Parsons (1990) points out, they create opaque contexts for the direct object. This is shown in (113), where (113-b) does not follow from (113-a) under the assumption that Ortcutt is the spy.

- (113) a. **Idiotischerweise** hat er Ortcutt ermordet. ($\not\rightarrow$ b)
Idiotically has he Ortcutt killed
‘Idiotically he killed Ortcutt.’
b. **Idiotischerweise** hat er den Spion ermordet. [where Ortcutt = spy]
Idiotically has he the spy killed

‘Idiotically, he killed the spy’

That the opacity does not extend to the subject position is shown in (114).

- (114) a. **Idiotischerweise** hat Ortcutt den Briefträger ermordet. (→ b)
 Idiotically has Ortcutt the mailman killed
 ‘Idiotically, Ortcutt killed the mailman.’
 b. **Idiotischerweise** hat der Spion den Briefträger ermordet.
 Idiotically has the spy the mailman killed
 [where Ortcutt = spy]

‘Idiotically, the spy killed the mailman.’

Subject-oriented adverbials can take scope over quantificational noun phrases, cf. (115).

- (115) **Unhöflicherweise** hat er alle beleidigt.
 Rudely has he everyone insulted
 Rudely, he insulted everyone.
 Cf. (Parsons 1990, p. 64)

Adjectives can sometimes serve as subject-oriented adverbials, cf. (116) and (117).

- (116) **Taktvoll** hat er die Tür geschlossen.
 Discretely has he the door closed
 ‘Discretely, he closed the door’
 (117) Sebastian sitzt **tapfer** auf dem Stuhl.
 Sebastian sits bravely in his chair

This usage of adjectives is rather rare. Thus, for example, it is not possible to use the adjectives instead of the derived adverbs in the cases of *idiotischerweise* and *arroganterweise* as they appear in (118), cf. (118).

- (118) ***Idiotisch/Arrogant** hat er seine Liebesbriefe ins Netz gestellt.
 Idiotically/Arrogantly has he his loveletters on.the net put

The reasons for this difference in behaviour between e.g. *taktvoll* on the one hand, and *idiotisch* and *arrogant* on the other hand, are not clear to me.

3.3.4 Frame adverbials

Frame adverbials set the frame for the rest of the sentence; they restrict the domain in which the proposition expressed by the sentence without the adverbial holds true. Standard examples for these adverbials are given in (119), taken from Bartsch (1972, p.63).

- (119) a. **Gefühlsmäßig** ist er kalt.
Emotionally he is cold
'Emotionally, he is cold.'
- b. **Wirtschaftlich** ist er ein As, aber in sozialer Hinsicht
He is economically an ace, but in social respect
rücksichtslos.
ruthless
'Economically, he is extremely good, but socially, he is ruthless.'
- c. **Zeitlich** paßt es mir nicht.
Timewise fits it me not
'It does not fit my schedule.'

In German these are, according to Pittner (1999, p.118), best analyzed as shortened conditional/participial phrases, cf. (120), the full version of (119-a).

- (120) Wenn man es gefühlsmäßig sieht/Gefühlsmäßig betrachtet ist er kalt.
If one it emotionally views/Emotionally seen is he cold
'Emotionally, he is cold'

Almost any adjective that can be used as a method-oriented adverbial (cf. section 3.2.4.1), can also be used as a frame adverbial, cf. (121).

- (121) a. **Linguistisch** ist die Software eine Katastrophe.
Linguistically is the software a catastrophe
'Linguistically, this software is a catastrophe.'
- b. **Medizinisch** ist er schon lange tot.
Medically is he already long dead
'From a medical viewpoint, he is already dead.'

This fact is not surprising, as I already mentioned in section 3.2.4.1 that adjectives serving as method-oriented adverbials are often derived from nouns denoting specific domains.

3.3.5 Speaker-oriented adverbials

Examples for this type of adverbials are given in (122).²⁷

- (122) a. **Ehrlich**, ich verstehe überhaupt nicht wovon du redest.
Honestly, I understand completely not about what you talk
'Honestly, I have no idea what you are talking about.'
- b. **Wahrscheinlich** liebt sie mich.
Probably loves she me
'She probably loves me.'

²⁷The term for this group is borrowed from Ernst (2001). The corresponding term in Bellet's/Parsons' terminology is speech-act modifiers.

- c. **Glücklicherweise** hat Bush gute Berater.
 Fortunately has Bush good aides
 ‘Fortunately, Bush has good aides.’

They can be further divided into three subgroups, namely speech-act adverbials, epistemic adverbials and evaluative adverbials.²⁸ I will first describe the properties these adverbials have in common and then describe the three subgroups.

According to Parsons (1990, p. 62), the effect of these modifiers is to produce sentences that make two assertions: a main assertion, the fact that is determined by the rest of the sentence excluding the modifier, and a secondary assertion, stating that that fact has a certain property. They are all factive (epistemics only in a weak sense: the speaker does not take full responsibility for the truth of the main assertion), cf. (123) and (124), where (123-a) implies (123-b) and (124-a) implies (124-b), respectively.

- (123) a. **Ehrlich**, Franz kam heil nach Hause. (→b)
 Honestly, Franz came safely to home
 ‘Honestly, Franz got home safe and sound.’
 b. Franz kam heil nach Hause.
 ‘Franz got home safe and sound.’
- (124) a. **Wahrscheinlich/Glücklicherweise** kam Franz heil nach Hause. (→ b)
 Probably/Fortunately came Franz safe to home
 ‘Probably/Fortunately Franz got home safe and sound.’
 b. Franz kam heil nach Hause.
 ‘Franz got home safe and sound.’

Speaker-oriented adverbials also can produce opacity for the subject position. Under the assumption that Franz is a spy, (125-a) does not imply (125-b).

- (125) a. **Glücklicherweise** kam Franz heil nach Hause. (↯b)
 Fortunately Franz made it home safe and sound.
 b. **Glücklicherweise** kam der Spion heil nach Hause. [Franz = spy]
 Fortunately the spy made it home safe and sound.

They outscope all other scope-bearing elements and therefore cannot occur within the scopes of other adverbials or quantificational NPs. Due to their semantics, speaker oriented adverbials are ordered relative to each other, where the order is SPEECH-ACT>EVALUATIVE>EPISTEMIC, as exemplified in (126).

- (126) **Kurzum, bedauerlicherweise** hat der Einbrecher den Besitzer
 Briefly, unfortunately has the thief the proprietor
wahrscheinlich ermordet.
 probably killed

²⁸This division follows Ernst (2001).

‘To put it briefly, the thief has unfortunately probably killed the proprietor.’

Below I give short descriptions of each of the three subgroups.

Speech-act adverbials These adverbials characterize the speaker’s attitude towards what he is saying, cf. (127), or in which form he is saying something, cf. (128).²⁹ In German, these adverbials are always followed by a pause and seem to be reduced versions of the participial *ADJECTIVE* *gesagt*, ... ‘ADJECTIVE put, ...’ (cf. Pittner (1999)).

(127) **Ehrlich** (gesagt), Ich versteh überhaupt nicht wovon du redest.
Honestly, I understand completely not about what you talk
‘Honestly, I have no idea what you are talking about.’

(128) **Kurz** (gesagt)/ **kurzum**, du hast mehr Dreck am Stecken
Briefly (spoken), you have more skeletons in the cupboard[idiom]
als der ganze restliche Landtag zusammengenommen.
than the whole leftover parliament taken together
‘In short/in a word, you have more skeletons in your cupboard than all the rest of the parliament taken together’

Ehrlich ‘honestly’ and *kurz* ‘briefly’ are both adjectives serving as adverbials.

Epistemic adverbials Epistemic adverbials are used to express the speaker’s comments on the truth value the sentence without the adverbial is likely to receive. Typical exponents of this class are given in (129).

- (129) a. **Vielleicht** liebt sie mich.
Perhaps loves she me
‘Perhaps she loves me.’
b. **Wahrscheinlich** liebt sie mich.
Probably loves she me
‘She probably loves me.’
c. **Sicherlich** liebt sie mich.
Certainly loves she me
‘She certainly loves me.’

Pittner (1999, p.112) in addition counts adjectives which relativize propositions to certain sources as epistemics, cf. e.g. (130).

- (130) a. **Angeblich** hat er den Container mit einer Hand gefangen.
Allegedly has he the container with one hand caught

²⁹For the differentiation of these two usages cf. Bellert (1977, p. 349); the term speech-act adverbials corresponds to her term *pragmatic adverbs*.

‘Allegedly he caught the container singlehandedly.’

Epistemic adverbials also compromise the non-philosophical usage of *notwendigerweise* ‘necessarily’ and *möglicherweise* ‘possibly’, as in (131).³⁰

- (131) **Möglicherweise/Notwendigerweise** ist er der Verräter.
Possibly/Necessarily is he the traitor
‘He is possibly/necessarily the traitor.’

As far as their wordclass membership is concerned, epistemic adverbials are mostly adverbs (cf. the instances of *-weise* suffixation and the modal adverbs *vielleicht* ‘perhaps’ and *sicherlich* ‘probably’).

Evaluative adverbials In German, the wordforms serving as evaluative adverbials are typically adverbs derived from adjectives through the addition of the suffix *-weise*. They share this behaviour with subject-oriented adverbials, cf. section 3.3.3. Example sentences are given in (132), while (133) lists other common adverbs serving as evaluative adverbials.³¹

- (132) **Glücklicherweise/Überraschenderweise** hat Bush gute Berater.
Fortunately/Surprisingly has Bush good aides
‘Fortunately/Surprisingly, Bush has good aides.’
- (133) angemessenerweise ‘appropriately’, bedauerlicherweise ‘unfortunately’,
anerkennenswerterweise ‘commendably’, merkwürdigerweise ‘oddly’,
unbegreiflicherweise ‘unbelievably’

Evaluative adverbials express the opinion of the speaker with regard to the state of affairs expressed by the sentence without the adverbial. They can be paraphrased with the help of the pattern given in 3.10.

TEST 3.10 A sentence containing an evaluative adverbial can be paraphrased by
It was ADJECTIVE, that SUBJECT VERB OBJECT

Examples for the application of this test are given in (134).

- (134) It is fortunate/surprising, that Bush has good aides.

In contrast to subject-oriented adverbials, the judgement expressed via the evaluative adverbial does not bear any specific relation to the preferences of the subject.

- (135) **Fortunately/Unfortunately**, Bush won the elections.

³⁰For an account of the alethic usage of these adverbs, compare Parsons (1990, p. 63), who classifies these usages as sentence modifiers, as their behaviour differs from that of speaker-oriented adverbials.

³¹A longer list of evaluative adverbs can be found in Bartsch (1972, p.29); she calls this group *k*₁.

This can be seen with the help of pairs such as the one given in (135): different speakers might have opposite sentiments towards the fact expressed by the sentence without the adverbial, while its subject will only have one sentiment, necessarily contradicting one speaker judgement.

3.4 An alternative approach

In many publications, Ernst has given a very detailed analysis and classification of a set of English adverbs that share many usages with the German adjectives treated in this work (for overviews, cf. Ernst (1984) and Ernst (2001)). In Ernst (2001, chapter three), these are called *predicational adverbs* and described as in (136):

- (136) Predicational adverbs are those that are not quantificational (as are *frequently* and *daily*, for example), that represent gradable predicates taking (at least) events or propositions as their arguments, and that in English are almost always composed of an adjective plus *-ly*, such as *probably*, *amazingly similarly*, *cleverly*, *reluctantly*, or *loudly*. (Ernst 2001, p. 41)

Ernst proceeds to distinguish different classes of predicational adverbs, among them *subject-oriented adverbs*, *speaker-oriented predicationals*, *exocomparative adverbs* and *pure manner adverbs*. These are essentially lexical classes of adverbs. While much of the terminology overlaps with the terminology given here and many definitions of particular groups of adverbs can be matched to some group in my system, the main difference lies elsewhere: Ernst argues that most of the adverb classes, in particular the subject-oriented, speaker-oriented and the exocomparative adverbs possess two readings, a clausal and a manner reading. Of these two readings, Ernst takes the clausal readings to be primary and the manner readings to be derived via a template, the so-called manner rule (cf. especially Ernst (2001, chapter 2); the formalized version of the manner rule is given in Ernst (2001, p. 58, (2.49))).

In my view, this approach encounters massive problems when applied to the situation in German. As mentioned in passing in the previous sections, German adjectives are especially used for adverbial functions which are, in Ernst's sense, lower readings. For the higher readings, German uses adverbs derived from adjectives, typically with the help of the suffix *-weise*. The German equivalent of a typical higher-lower contrast in Ernst's work, cf. (137), is given in (138).

- (137) a. **Foolishly**, the Senator has been talking to reporters.
b. The Senator has been talking **foolishly** to reporters.
= (2.35) in Ernst (2001)
- (138) a. **Idiotischerweise** hat der Senator mit den Reportern geredet.
Foolishly has the senator with the reporters talked
b. Der Senator hat mit den Reportern **idiotisch** geredet.
The senator has with the reporters idiotically talked

Clearly, it is counterintuitive to posit, at least for German, that the reading that uses the derived adverb is the primary reading, while the reading that is realized with the adjectival short form is the derived reading.

A second problem for Ernst is, in my view, cases like *schnell* ‘quickly’, which exhibits three different adverbial readings, cf. the discussion in section 3.3.2. Such data cannot be easily accounted for in a system that emphasises the generality of the assumption of two readings for every adverb.

3.5 Conclusion

This chapter discussed the different usages of adjectives as adverbials. A series of tests (mainly using paraphrases) were introduced to distinguish the different usages. The first section gave a very short introduction to the chapter.

Section 2 was concerned with manner adverbials. In subsection 1, I introduced the tests that are satisfied by all manner adverbials. In the subsections 2 and 3, I looked at the two subgroups of manner adverbials, pure manner adverbials and agent-oriented manner adverbials, respectively. The semantic contribution of pure manner adverbials lies in specifying the manner of an action, while the semantic contribution of agent-oriented manner adverbials, in addition, links the specific manner in which an action is executed to temporal properties of the agent. This is reflected in the different paraphrases available for the two subgroups. An overview over this two subgroups and their behaviour with regard to the semantic tests is given in table 3.1. In the table, the two tests that allow to distinguish between pure manner adverbials and agent-oriented manner adverbials, TEST 3.5 and TEST 3.6, are given separately for each subgroup.

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SUBTYPE OF MANNER ADVERBIAL	EXAMPLE SENTENCE	TEST APPLICATION	TEST
Pure manner adverbials	Petra tanzt schön.	Wie Petra tanzt, das ist schön.	TEST 3.1
		Petra tanzt auf schöne Art und Weise.	TEST 3.2
		*Petra tanzt schön nicht.	TEST 3.3
		Wie tanzt Petra? Schön.	TEST 3.4
		Petra tanzt schön → Das Tanzen ist schön.	TEST 3.5
Agent-oriented manner adverbials	Petra tanzt geschickt.	Wie Petra tanzt, das ist geschickt.	TEST 3.1
		Petra tanzt auf geschickte Art und Weise.	TEST 3.2
		*Petra tanzt geschickt nicht.	TEST 3.3
		Wie tanzt Petra? Geschickt.	TEST 3.4
		Es ist geschickt von Petra, wie sie tanzt.	TEST 3.6

Tabelle 3.1

In subsection 4, I discussed the difference between usages of adjectives as manner adverbials and other, partly similar, adverbial usages: method-oriented adverbials and degree adverbials. I argued that, again, these different usages can be clearly differentiated with the help of the paraphrase tests. Example sentences and paraphrases for these two groups of adverbials are given in table 3.2.

ADVERBIAL	EXAMPLE SENTENCE	PARAPHRASE
Method-oriented adverbials	Fred hat die Tiere genetisch klassifiziert.	Fritz hat die Tiere durch Methoden aus der Genetik klassifiziert.
Degree adverbials	Hans haßt Petra unheimlich.	Hans haßt Petra mit großer Intensität.

Tabelle 3.2

Subsection 5 was concerned with the differentiation between the usage of adjectives as manner adverbials vs their use as predicatives, in particular as resultatives, depictives or implicit resultatives. While the differentiation between manner adverbials and resultatives is very straightforward, it turns out that for both other usages there are some instances where a clear differentiation is impossible. This holds in particular for

so-called psychological adjectives and their use as manner adverbials or subject depictives, respectively. An overview of the different usages of adjectives as secondary predicates is given in table 3.3.

TYPE OF SECONDARY PREDICATION	EXAMPLE SENTENCE	PARAPHRASE	TEST
Resultatives	Fritz hat die Wand blau gestrichen.	Fritz hat die Wand so gestrichen, daß die Wand nun blau ist.	TEST 3.7
Depiktives [subject]	Peter ißt das Fleisch nackt.	Peter ißt das Fleisch, während er nackt ist.	TEST 3.8
Depictive [object]	Peter ißt das Fleisch roh.	Peter ißt das Fleisch, während es roh ist.	TEST 3.8
Implicit resultatives	Fritz hat den Wagen schwer beladen.	Fritz hat den Wagen so beladen, daß seine Ladung schwer ist.	

Tabelle 3.3

In subsection 6, I ended the discussion of manner adverbials by looking at the interaction of manner adverbials and stative verbs. It was shown that although manner adverbials can sometimes co-occur with stative verbs, in particular with positionals, these usages are very restricted.

Section 3 was devoted to the remaining non-manner, adverbial usages of adjectives. It was divided into five subsections, each dealing with a specific non-manner usage. Subsection 1 discussed mental-attitude adverbials. The most prominent difference to the manner readings is the ability of mental-attitude adverbials to have scope over negation. Subsection 2 dealt with event-external adverbials. It was shown that they are restricted to adjectives which allow temporal readings, the most prominent example being *schnell* ‘quickly’.

In subsection 3, I discussed subject-oriented adverbials, which are only seldomly realized by adjectives. Instead, adverbs derived from adjectives with the help of the suffix *-weise* are used. Subsection 4 discussed frame adverbials. Most adjectives that can be used as method-oriented adverbials can also be used as frame adverbials.

Subsection 5 on speaker-oriented adverbials gave a further subclassification of these adverbials into three groups, speech-act adverbials, epistemic adverbials, and evaluative adverbials. Adjectives can only be used as speech-act adverbials, but not as epistemic or evaluative adverbials. Evaluatives, like subject-oriented adverbials, are predominantly formed via a derivation from adjectives with help of the suffix *-weise*. Table 3.5 gives an overview over the usages discussed in section 3.

CHAPTER 3. THE DIFFERENT READINGS OF ADVERBIAL ADJECTIVES

ADVERBIAL	EXAMPLE SENTENCE	PARAPHRASE	TEST
Mental-attitude adverbials	Fred schummelt absichtlich.		
Event-external adverbials	Hans schmückt schnell den Weihnachtsbaum.		
Subject-oriented adverbials	Taktvoll hat Peter die Tür geschlossen.	Es war taktvoll von Peter, dass er die Tür geschlossen hat.	TEST 3.9
Frame adverbials	Wirtschaftlich liegt Deutschland am Boden.	Wirtschaftlich gesehen liegt Deutschland am Boden.	
Speaker-oriented adverbials	Sicher liebt Daniela Franz.	Es ist sicher, dass Daniela Franz liebt.	TEST 3.10

Tabelle 3.4

In the section 4, I gave a short summary of the approach of Ernst (2001) to English predicational adverbs, and pointed to the difficulties in using this approach for the situation in German.

All in all, I have shown that German adverbial adjectives can be used in a surprisingly wide range of adverbial functions. These different functions, in turn, can be conveniently differentiated with the help of the semantic tests introduced.

Chapter 4

The syntactic positions of adverbial adjectives in German

4.1 Introduction

This chapter investigates the degree to which syntactic criteria allow an establishment of different adverbial classes. I argue that, for a large part, the different semantic classes can be linked to specific syntactic base positions. Seven different syntactic criteria can be used to determine the base position of adverbials in German:

1. *Negation*: Assuming that the position of the particle used for sentence negation is syntactically stable, the position of an adverbial relative to that particle may be used to indicate its base position.
2. *Focus projection*: Whether a sentence containing an adverbial can carry maximal focus or not can be linked to whether or not the adverbial appears in its base position.
3. *Theme-rheme condition*: Under certain conditions, an adverbial can only be part of the rheme when appearing in its base position.
4. *Principle C effects*: Some binding phenomena depend on whether or not the adverbial that contains the material sensitive to binding appears in its base position.
5. *Existentially interpreted w-phrases*: Taking the syntactic position of existentially interpreted w-phrases as fixed, the position of adverbials relative to that position can be used to indicate their base positions.
6. *Complex frontings*: The way that an adverbial can take part in complex frontings indicates its base position.
7. *Quantifier scope*: Scope ambiguities of adverbials containing quantification can be used in determining their base positions.

Most of the tests were originally introduced to account for the syntactic position of arguments in German sentences. Their adaption to adverbials is due to the work of Frey

and Pittner (cf. Frey & Pittner 1998, Frey & Pittner 1999, Frey 2003, Pittner 2004)¹, and the seven tests mentioned above are those used by Frey and Pittner.

The chapter is organized as follows: in section 2, the seven tests are presented. Of these, the most complex tests are those relying on information structure, that is, the tests using *focus projection* and the *theme-rheme condition*. They will therefore be discussed in most detail. In section 3, I apply these tests to adverbials, leading to the differentiation of five different classes (this, again, follows Frey & Pittner): process-related adverbials, event-internal adverbials, event-external adverbials, frame adverbials and sentence adverbials.

Note that the example sentence used throughout this chapter should be read without contrastive accents accents or bridge contours, unless otherwise indicated.

A note on relative vs fixed positions for adverbials In the syntactic literature on adverbial placement, there is disagreement as to whether the placement of adverbials should be accounted for by assuming different base positions for different adverbial classes, as the Frey and Pittner account does, or by assuming a scopal theory, where an adverbial can be placed quite freely in a sentence. One example for such a theory is Ernst (2001), who assumes that adverbials are adjuncts that can adjoin to different positions in a sentence. The position to which they are adjoined determines which specific semantic objects can serve as their arguments in the semantic interpretation of the sentence.

I remain agnostic here as to which solution is the theoretically better solution. The tests or conditions which are presented here are taken from Frey and Pittner and are therefore geared at definitions in terms of base positions. As far as I can see, however, the resulting definitions of different base positions as presented in section 4.3 can be easily reformulated as specific conditions, which must be met for the interpretation of some adverbial as e.g. sentence adverbial etc.

For a more detailed overview over the different syntactic approaches, cf. Ernst (2001, section 1.2.3) and Alexiadou (2004).

4.2 Testing for German word order

4.2.1 Negation

On the assumption that the position of the particle used for sentence negation is syntactically fixed, the position of an adverbial relative to this particle can be used to establish the base positions of the adverbial.

¹The papers differ in parts. For the topics discussed here, the most notable differences are between Frey & Pittner (1998) and Frey (1993): The latter (a) only uses three tests (existentially interpreted w-phrases, scope, and principle C effects) and (b) gives separate definitions for mental-attitude adjuncts, treating them as a special case of event-internal adjuncts.

According to Frey & Pittner (1998), the negation particle always precedes the *minimal verbal domain*.² On Frey & Pittner's (1998) account, the minimal verbal domain is the smallest maximal verbal projection. It is a reconstruction of V^u as described in Steinitz (1989).³ The minimal verbal domain does not participate in scrambling and is always preceded by the negation particle indicating sentence negation. Elements that typically appear in this domain are, as Steinitz (1989) shows, prepositional phrases serving as complements as well as noun phrases and adjective phrases in predicative functions. An example for a PP-complement in interaction with sentence negation is given in (1).⁴

- (1) a. daß er keine Sachen auf den Tisch stellt.
 that he not.any things on the.ACC table puts
 ‘that he does not put anything on the table.’
 b. daß er die Sachen nicht auf den Tisch stellt.
 that he the things not on the.ACC table puts
 ‘that he does not put anything on the table.’
 c. *daß er die Sachen auf den Tisch nicht stellt.
 that he the things on the.ACC table not puts
 = (1) in Steinitz (1989)

In (1-a) and (1-b) the morphological negation *keine* ‘no one’ as well as the particle *nicht* ‘not’ are used for sentence negation, whereas in (1-c) the negation particle cannot be used for sentence negation.⁵ Steinitz (1989) also takes sentence adverbials like *wahrscheinlich* ‘probably’, unaccented particles like the German *doch* and floating quantifiers like *alle* ‘all’ to be excluded from V^u .

Arguments cannot occur inside the minimal verbal domain. In turn, this means that the particle used for sentence negation needs to c-command the verbal predicate and is positioned between the lowest-ranked argument and the verbal complex V^u . This view of the position of the negation marker in the case of sentence negation is supported by the data given in (2).

- (2) a. daß Hans meines Wissens heute **nicht** das Fahrrad bringt,
 that Hans my.GEN knowledge.GEN today not the bicycle brings,
 (sondern . . .)
 but

²For a different account of the position of the negation particle in German, cf. Steube (to appear). According to Steube, the particle used for sentence negation is placed below the sentence adverbials but above all other actands and other adverbials.

³Steinitz attributes the first description of V^u to a 1989 Bierwisch-Handout.

⁴The examples with noun phrases and adjective phrases in predicative function are only relevant for copula verbs, Steinitz's (1989) examples are sentences like *Er ist Präsident geworden* ‘He became president’.

⁵The word order in (1-c) can be used in the case of contrastive negation. Even then it is marked in comparison with (1-b), which can also be used for replacive negation.

- ‘that, as far as I know, Hans today does not bring the bicycle, but ...’
- b. Daß Hans meines Wissens heute das Fahrrad **nicht** bringt
 that Hans my.GEN knowledge.GEN today the bicycle not brings
 ‘that Hans, as far as I know, does not bring the bicycle today.’
 = (19a-b) in Frey & Pittner (1998)

In (2-a), the negation particle *nicht* is positioned before the direct object. This is only possible because (2-a) contains contrastive negation, which is indicated by the *sondern*-phrase, which can be used to continue the sentence. (2-b), on the other hand, contains sentence negation, and *nicht* must be placed between the lowest ranked argument and the minimal verbal domain.

According to Frey & Pittner (1998), resultatives are also positioned in the minimal verbal domain, as well as those direct objects which are integrated in the sense of Jacobs (1993). I will come back to this last claim in section 5.4.1.

4.2.2 Focus projection

The term *focus projection* was first introduced by Höhle (1982), whose focus was determining the normal/unmarked word order (“*Normalabfolge*”) of a given sentence. To understand the relation between Höhle’s (1982) notion of normal word order and focus projection, it is necessary to introduce a few of the main concepts of Höhle’s (1982) work.

To arrive at the standard word order of a sentence, Höhle (1982) makes use of the concept of *stilistisch normale Betonung* ‘stylistically standard accentuation pattern’, cf. (3)

- (3) [stylistically standard accentuation pattern]
 The intonation of a given sentence S_i is stylistically normal, if S_i is, as far as its accentuation pattern is concerned, contextually relatively unmarked. The accentuation pattern is stylistically not normal, if the accentuation pattern of S_1 is contextually marked.
 Cf. (79) in Höhle (1982, p. 103)

The phrase *contextually relatively unmarked*, on the other hand, is defined in (4).

- (4) [Contextuell relativ unmarkiert]
 Given a set of sentences whose only distinguishing characteristic is the accentuation of their constituents, there will be sentences in this set that are *contextually relatively unmarked* as far as their intonation is concerned. These sentences can appear in the highest number of different types of contexts. All other sentences in this set are, as far as their prosody is concerned, contextually marked.
 Cf. (78) in Höhle (1982, p.102)

Given these two notions, Höhle (1982) defines *Stilistisch normale Wortstellung* ‘stylistically standard word order’ as follows:

- (5) [stylistically standard word order]
 Given be a set of sentences whose only distinguishing characteristic is the accentuation of their constituents and/or the linear order of those constituents. Among all sentences in this set, those sentences have *stylistically standard word order*, for which holds: In the set of sentences differing only in their accentuation, there exists one sentence, which can appear, from all sentences in the set of sentences differing in accentuation and/or linear order of their constituents, in the most types of contexts.
 Cf. (147) in Höhle (1982, p. 123)

The ability of a sentence to appear in different contexts is closely linked to its ability to project focus. Consider the sentence in (6), where UPPERCASE indicates the main accent.

- (6) Karl hat dem Kind das BUCH geschenkt.
 Karl has the.DAT child the.ACC book given
 ‘Karl gave the child the book’

Sentence (6) contains at least one accented element, in this case the two elements of the noun phrase *das Buch* ‘the book’. These two accented elements form a possible focus, the minimal focus (cf. 66 in Höhle (1982, p. 98)).^{6 7}

If we model contexts for the sentence in (6) with the help of questions, the question (7-a) yields an appropriate context for the minimal focus, e.g. focus on the noun phrase *das Buch* ‘the book’, cf. (7-a). Sentence (6) does fit other contexts, too. E.g., it can answer the questions in (7-b) to (7-e), resulting in the different foci for (6) given in (8). All these foci include the accented elements contained in the minimal focus and are the result of focus projections (for the exact definition of focus projection, cf. (70) in Höhle (1982, p. 99)).

- (7) a. Was hat Karl dem Kind geschenkt?
 ‘What did Karl give to the child?’
 b. Was hat Karl hinsichtlich des Kindes getan?
 ‘What did Karl do with regard to the child?’

⁶Höhle’s (1982) conception of focus is given in (i).

- (i) Focus (informal definition)
 If a sentence S_i is uttered, that part of S_i is the focus $Fc(S_i)$, whose function in S_i is not known on the basis of the relevant context. (The other parts of S_i form the topic $Tc(S_i)$)
 = (32) in Höhle (1982, p. 86)

⁷Höhle (1982) speaks of ‘elements’ and not of ‘constituents’, because he assumes that elements in the focus must not form a constituent, cf. the discussion of his (50d) in Höhle (1982, p. 92).

- c. Was hat Karl getan?
'What did Karl do?'
 - d. Was hat das Kind erlebt?
'What did the child experience?'
 - e. Was ist geschehen?
'What happened?'
- = (49-a-e) in (Höhle 1982)

- (8)
- a. das Buch [minimal focus]
 - b. das Buch + geschenkt
 - c. dem Kind + das Buch + geschenkt
 - d. Karl + das Buch + geschenkt
 - e. Karl + dem Kind + das Buch + geschenkt (=set of all constituents)
- = (50) in (Höhle 1982)

The representation of focus projection to this point exactly followed Höhle (1982). Frey & Pittner's (1998) usage of focus projection to establish base positions, however, is based on one further assumption: in cases where a non-verbal element is accented, focus projection is only possible if this non-verbal element is the element closest to the verb (cf. Frey & Pittner (1998, p. 492)).⁸ Frey & Pittner (1998) illustrate their usage of focus projection to determine base positions with the example (9).

- (9) Was ist geschehen?
'What happened?'
- a. Ein Kollege hat einer Dame ein GedICHT vorgetragen
A colleague has a.DAT lady a.ACC poem recited
'A colleague recited a poem to a lady.'
 - b. #Ein Kollege hat ein Gedicht einer Dame vorgetragen
A colleague has a.ACC poem a.DAT lady recited
- Cf. (6) in Frey & Pittner (1998)⁹

Only (9-a) is a good answer to the question in (9). Apparently its focus exponent allows

⁸Frey & Pittner (1998) credit this assumption to Höhle (1982) and Cinque (1993). Apparently, they allude to the hypothesis in Höhle (1982, p. 108, hypothesis 103) given as (i).

- (i) For some three-place predicates and the word order
subject > object > object
the last object constitutes the focus exponent of S, whenever the objects are definite non-pronominal NPs.

Cinque (1993) argues that his null theory of phrasal and compound stress assignment predicts that for German VPs, "the primary stress falls on the XP to the immediate left of the verb, or verbal group [...]"(Cinque 1993, p. 250f). Cinque's (1993) theory generates the correct stress assignment from the syntactic structure of the sentence in question.

⁹The original example used by Frey & Pittner (1998) differs from (9) in containing the temporal modifier *gestern* 'yesterday', which in my view makes both answers inappropriate.

focus projection up to the whole sentence. (9-a) therefore represents the normal word order.

Note that the usage of data concerning focus projection to determine the syntactic position of constituents of a clause goes against the intention of Höhle's (1982) paper. Höhle (1982) sees his *stylistically standard word order* ('stilistisch normale Wortstellung') as a pragmatic phenomenon and explicitly allows for two different linear orderings to function as stylistically standard word orders. Sentences (10-a) and (10-b) represent for Höhle (1982) such a case.

- (10) a. Karl hat dem Kind das Buch geschenkt.
Karl has the.DAT child the.ACC book given.as.a.present
'Karl gave the book to the child as a present.'
- b. Karl hat das Buch dem Kind geschenkt.
Karl has the.ACC book the.DAT child given.as.a.present
'Karl gave the book to the child as a present.'
- = (130) in Höhle (1982, p. 120)

For Höhle (1982), both the order IDO>DO in (10-a) as well as the order DO > IDO in (10-b) allow focus on the whole sentence, as long as in both cases the accentuation is on the object closest to the verb, cf. Höhle (1982, p. 120 (130-31)). Note also that this data is structurally parallel to Frey & Pittner's (1998) example (9), where Frey & Pittner (1998) assume that only (9-a) may carry wide focus.

In this work, I will follow Frey & Pittner's assumption that there is only one stylistically standard word order.

4.2.3 Theme-rheme condition

The *theme-rheme condition* proposed by Lenerz (1977) is another test for argument serialization:¹⁰

- (11) Whenever two *satzglieder*¹¹ A and B can occur in the order AB as well as BA, and if BA occurs only under certain, testable conditions, which do not hold for AB, then AB represents the unmarked order and BA the marked order.
Cf. (14) in Lenerz (1977, p. 27)

Frey & Pittner (1998) illustrate this principle with the data in (12) and (13), where the two different constituent questions used are to be understood as one of the 'certain, testable conditions' referenced in the definition (11).

¹⁰According to Haider (1993, p. 209,fn. 9), it is in a way a special case of the focus projection principle. However, cf. the remarks on Höhle's (1982) view of the theme-rheme condition given at the end of this section.

¹¹For a definition of *satzglied*, cf. (4) in chapter 2.

- b. *Ich habe ein Buch einem Schüler geschenkt.
 I have a book a.DAT student given.as.a.present
 = (19b/d) in Lenerz (1977, p. 54)

In fact, (14) leads Lenerz to formulate a *Definitheitsbedingung* ‘Definiteness Constraint’, given in (15).

- (15) The word order DO IDO is not allowed, if an indefinite NP serves as DO.
 = (24) in Lenerz (1977, p. 55)

Frey (2001, fn. 7) seems to agree with Lenerz’ grammaticality judgements on (14) (this contrasts with Frey & Pittner’s (1998) judgement on (12)!), and argues that scrambling of the indefinite is disfavoured in these contexts, since “It seems that a constituent which fills the open position indicated by a preceding wh-phrase wants to precede other non-familiar elements in the clause.” (Frey 2001, fn. 7). This additional principle is responsible for the different patterns in (16) and (17).

- (16) Wem hat Otto was mitgebracht?
 To whom has O. something brought
 ‘To whom did Otto give something?’
 a. Otto hat einem Nachbarn Äpfel mitgebracht.
 O. has a.DAT neighbour apples brought
 ‘Otto brought some neighbour apples.’
 b. ??Otto hat Äpfel_i einem Nachbarn t_i mitgebracht.
 Otto has apples a.DAT neighbour brought
 = (ii) in Frey (2001, fn. 7)
- (17) Was hat Otto wem mitgebracht?
 What has O. to whom brought
 ‘What did Otto bring whom?’
 a. ??Otto hat einem Nachbarn Äpfel mitgebracht.
 Otto has a.DAT neighbour apples brought
 b. Otto hat Äpfel_i einem Nachbarn t_i mitgebracht.
 Otto has apples a.DAT neighbour brought
 ‘Otto brought some neighbour apples.’
 = (iii) in Frey (2001, fn. 7)

According to Frey, (17-b) contains a scrambled weak indefinite and therefore shows that (15) does not hold in all generality. Another possible interpretation of the patterns of acceptability in (16) and (17) is to assume that these double w-questions suggest a context where there is a limited available set of people and things to be matched against each other. If the sets are already given, then the members of the set are not new information in the strict sense. Rather, it is only how the members of the two sets

are matched against each other is new information.¹² Note that for some speakers, the grammaticality judgements on (17-a) and (17-b) should be exactly opposite.

Höhle on Lenerz Höhle (1982, p. 130-140) gives a detailed comparison of his concept of *stilistisch normale Wortstellung* against the concept introduced by Lenerz, which Höhle (1982) calls *strukturell normale Wortstellung*. For Höhle (1982), the results of Lenerz's tests are of doubtful empirical relevance. He also strongly rejects the assumption that there has to be a level of grammar where we find something like a structural normal ordering.

In contrast to Höhle, I follow here again Frey & Pittner in (a) using the theme-rheme test and (b) assuming a level of grammar where we find structural normal ordering.

4.2.4 Principle C effects

Principle C effects result from constraints on binding resulting from specific structural configurations. These constraints are referred to as principle C and given in (18).

- (18) [principle C]
 A referential term α cannot be coindexed with a term β if one of the following conditions holds on the surface structure.
- (i) β c-commands γ , or
 - (ii) β c-commands a trace of γ where $\gamma = \alpha$ or γ contains α
- Cf. Frey & Pittner (1998, p. 494)¹³

Assuming that all traces in the middle field are base generated, (18-ii) allows a location of the base positions. This will become clearer after looking at the two example sentences in (19).

- (19) a. *Den Assistenten von Peter₁ hat man dem Peter₁ für diese Aufgabe
 The assistant of Peter has one the Peter for this assignment
 empfohlen.
 recommended
- b. Dem Chef von Peter₁ hat man den Peter₁ für diese Aufgabe
 The.DAT Boss of Peter has one the Peter for this assignment
 empfohlen.
 recommend
 'People recommended Peter to Peter's boss for this assignment.'
 = (11a-b) in Frey & Pittner (1998, p. 494)

¹²This interpretation corresponds to an In-Group reading in the sense of Eckardt (2003) for the indefinites in (17) and (16), cf. the discussion of In-Group readings in section 5.4.4.

¹³This specific condition on binding was first described in Frey (1993). For the classic formulation of 'principle C', cf. Chomsky (1981).

Sentence (19-a) does not allow a coindexing of the two occurrences of *Peter*. In contrast, (19-b) allows an interpretation where both occurrences of *Peter* refer to the same person. According to Frey & Pittner (1999), it is the principle C that explains this constraint. The trace of the phrase *Den Assistenten von Peter* in (19-a) has been moved to the vorfeld and is c-commanded by the indirect object *Peter*. This is represented in (20-a). This constellation is explicitly forbidden by the principle C, and results in the failure of this coindexing. The structure of (19-b) given in (20-b), on the other hand, does not conflict with principle C, and a coindexing is thus possible.

- (20) a. *[Den Assistenten von Peter₁]₂ hat man dem Peter₁ t₂ für diese
The assistant of Peter has one the Peter for this assignment
Aufgabe empfohlen.
recommended
- b. [Dem Chef von Peter₁]₂ hat man t₂ den Peter₁ für diese Aufgabe
The.DAT Boss of Peter has one the Peter for this assignment
empfohlen.
recommend
= (11') in Frey & Pittner (1998, p. 494)

If these structures are correct, then the normal word order of the arguments of the verb *empfehlen* 'recommend' is DAT>AKK.

4.2.5 Positional restrictions on existentially interpreted w-phrases

When w-phrases are existentially interpreted, they are restricted in the number of positions available to them.¹⁴ This restriction can be seen in the examples (21) to (23).

- (21) a. weil ein Professor wen beleidigt hat.
because a professor someone.ACC insulted has
'because a professor insulted someone.'
- b. *weil wen ein Professor beleidigt hat.
because someone.ACC a professor insulted has
= (12a-b) in Frey & Pittner (1998)

If, as in (21), an existentially interpreted w-phrase serves as the direct object, only the word order SUBJECT > DIRECT OBJECT is possible. The word order DIRECT OBJECT > SUBJECT is not possible. If, on the other hand, personal pronouns or names function as direct objects, both word orders are possible, cf. (22) and (23), respectively.

- (22) a. weil ein Professor ihn beleidigt hat.
because a.NOM professor him insulted has

¹⁴German w-phrase also have usages that correspond to the usages of English wh-phrases, to which they are historically related. That is, they can be used as interrogative pronouns.

- ‘because a professor insulted him.’
- b. weil ihn ein Professor beleidigt hat.
because him a.NOM professor insulted has
‘because a professor insulted him.’
- (23) a. weil ein Professor Petra beleidigt hat.
because a.NOM professor Petra insulted has
‘because a professor insulted Petra.’
- b. weil Petra ein Professor beleidigt hat.
because Petra a.NOM professor insulted has
‘because a professor insulted Petra.’

Frey & Pittner (1998, p. 495) argue that the most plausible explanation for this behaviour is the assumption that existentially interpreted w-phrases cannot move out of their base position. Assuming this, their placement can be used to establish base positions for other constituents of a sentence relative to the position of the existentially interpreted w-phrases.

4.2.6 Complex frontings

The complex frontings test is based on the assumption that traces in the surface structure produced by scrambling must be bound by their antecedent.¹⁵ If this is not the case, acceptability of the sentences is much decreased. An example of this is given in (24).

- (24) a. Den Preis gegönnt hat dem Otto wohl jeder.
The.ACC price not.begrudged has the.DAT Otto arguably everybody
‘Nobody begrudged Otto the price.’
- b. ??Dem Otto gegönnt hat den Preis wohl jeder.
The.DAT Otto not.begrudged has the.ACC price arguably everybody
= (13a-b) in Frey & Pittner (1998, p. 495)

The reduced acceptability of (24-b) is argued by Frey & Pittner (1998) to result from the sentence having the structure given in (25).

- (25) Dem Otto t_i gegönnt hat den Preis _{i} wohl jeder.
The.DAT Otto not.begrudged has the.ACC price arguably everybody

According to (25), before the phrase *Dem Otto gegönnt* is topicalized the accusative object must be moved out of its position between the IDO and the verb. This, in turn, leaves a trace which remains unbound after the topicalization of IDO+VERB is complete. This structure is not allowed, given Frey & Pittner’s (1998) assumptions. This in

¹⁵As Frey & Pittner (1998) mention, the validity of this assumption is not shared by all authors, cf. e.g. Müller (1996).

turn allows one to deduce the base positions for the arguments of *gönnen*, which must have the order DAT>ACC.

Note that the positioning of the designated argument in sentence initial position is not allowed for independent reasons.¹⁶

4.2.7 Quantifier scope

The scope principle first introduced in Frey (1993) can also be used to determine base positions.

- (26) [Scope principle]
 A quantified expression α can have scope over a quantified expression β if the head of the local chain of α c-commands the base position of β .
 = (2) in Frey (2003)

Instances of local chains are movements in the middle field. If α has not been moved, the head of its local chains is its base position.

In practice, this means that when two sentences only differ in the relative order of the quantified arguments in their middle field, the ordering that allows only one reading represents the unmarked order. An example for this is given in (27), where the quantified NPs must always be read without accents.

- (27) a. Gestern HAT er mindestens einer Dame fast jedes Gedicht
 Yesterday has he at.least one.DAT lady nearly every poem
 vorgetragen
 recited.to
 ‘Yesterday, he recited all poems to one lady.’
 → one reading: $\exists\forall$
- b. Gestern HAT er mindestens ein Gedicht fast jeder Dame vorgetragen
 Yesterday has he at.least one poem nearly every lady recited to
 ‘Yesterday, he read at least one poem to nearly every lady.’
 → two readings: $\exists\forall$ or $\forall\exists$
- Cf. = (15a-b) in Frey & Pittner (1998).¹⁷

The scope principle suggests (28) as the structure of (27-b).

- (28) Gestern HAT er [mindestens ein Gedicht]₁ fast jeder Dame t₁
 Yesterday has he at.least a poem nearly every lady
 vorgetragen
 recited.to

¹⁶Cf. the comments in Frey & Pittner (1998, fn. 8). For a different view, cf. Haider (1993, pp207ff), who accepts sentences like his 30a [*Krasse Außenseiter gewonnen*] *haben hier noch nie ohne Bestechung* ‘Blatant outsiders never won here without bribery’ and 30b [*Blutige Anfänger operiert*] *haben auch schon in dieser Abteilung*. ‘Absolute beginners also already did surgery in this department’.

¹⁷A similar example is (3) in Frey (2003)

= (15')b in Frey & Pittner (1998)

The unmarked word order of the arguments of *vortragen* 'recite' thus corresponds to the surface order in (27-a).

4.3 Using the tests for classification

In this section, I present five classes of adverbials that result from the application of the tests introduced in the previous section. The subsections are all structured similarly, beginning with a syntactic definition of a subclass of adverbials as given by Frey and Pittner. I then present the data that led to this definition.¹⁸ Differing from Frey and Pittner, I will show for each group how far this definition can be convincingly established for adverbial adjectives. Note that I do not consider sentence readings which need contrastive focus or so-called *Hutkonturen* 'bridge-contours'.¹⁹

4.3.1 Process-related adverbials

According to Frey and Pittner, the base position of process-related adverbials can be characterized as in (29). In terms of the semantic classification in chapter 3, process-related adverbials correspond to manner, degree and method-oriented adverbials.

- (29) [Process-related adverbials]
The base position of a process-related adverbial minimally c-commands a base position of the main predicate.²⁰
Cf. (71) in Frey (2003)

Frey and Pittner motivate this positioning of process-related adverbials with data using the scope principle, the remnant topicalization test, existentially interpreted w-phrases and the position of the adverbial relative to the particle used for sentence negation. I will discuss each of their original examples in turn.

Under the assumption of the scope principle in (26), the explanation for the availability of just one reading for (30-a) and two readings for (30-b) is that in (30-a) the adverbial appears in its base position, in (30-b) it has been moved, leaving a trace between the DO and the main verb.

- (30) a. Er HAT mindestens eine Frau **auf jede Art und Weise** umworben.
He has at.least one woman in every way courted

¹⁸Note Frey (2003) uses the term *adjunct* instead of adverbial.

¹⁹For *Hutkonturen* in German, cf. Steube (2003).

²⁰Frey speaks of 'a base position' and not of 'the base position' because, in discussing English data, he assumes that all verb positions necessary to license arguments can be viewed as base positions, cf. Frey (2003, p. 188).

- ‘He courted at least one woman in every way.’
 $(\exists\forall)$
- b. Er HAT **auf mindestens eine Art und Weise** fast jede Frau
 He has in at least one way nearly every woman
 umworben.
 courted
 ‘He courted every woman in at least one way.’
 $(\exists\forall, \forall\exists)$
 = (32) in Frey & Pittner (1998)

Structurally, (30-b) can be represented as in (31).

- (31) Er HAT [auf mindestens eine Art und Weise]_i fast jede Frau t_i
 He has in at least one way nearly every woman
 umworben.
 courted
 $(\exists\forall, \forall\exists)$

Further evidence for this positioning of process-related adverbials comes from data containing complex frontings, cf. (32), where sentence (32-a) is not acceptable, while (32-b) is acceptable.

- (32) a. *Einige Artikel gelesen hat Hans heute **sorgfältig**.
 A.few articles read has Hans today carefully
 b. **Sorgfältig** gelesen hat Hans heute einige Artikel.
 Carefully read has Hans today a.few articles
 ‘Today, Hans carefully read a few articles.’
 = (33) in Frey & Pittner (1998)

Frey & Pittner (1998) explain this pattern with their assumption about the configurations allowing complex frontings (cf. section 4.2.6): (32-a) contains traces which are not bound in its surface structure, while (32-b) does not contain such traces. If the base position of *sorgfältig* ‘carefully’ in these sentences is between direct object and the verb, then we find that (32-a) and (32-b) do differ in exactly this respect. A partial structural representation of (32-a) with the trace of the adverbial included is given in (33), the representation of (32-b) in (34).

- (33) *[Einige Artikel t_i gelesen]_j hat Hans heute sorgfältig_i t_j.
 A.few articles read has Hans today carefully
 (34) [**Sorgfältig** gelesen]_i hat Hans heute einige Artikel t_i.
 Carefully read has Hans today a.few articles

In (33), the trace of the adverbial *sorgfältig* is included in the fronted complex, while its binder is in sentence-final position and therefore not able to bind its trace on the

surface structure. In (34), on the other hand, the fronted complex contains no unbound traces.

The data using existentially interpreted w-phrases also exhibits the by-now familiar pattern: the manner adverbial is positioned between the lowest-ranked argument *was*, per assumption in its base position, and the minimal verb domain, cf. (35).

- (35) weil Maria heute was **sorgfältig** durchgearbeitet hat.
 because Maria today something carefully worked.through has
 ‘because today Maria carefully has worked through something.’
 Cf. (34) in Frey & Pittner (1998)

However, this data is problematic, because the ordering in (36) is also acceptable.²¹

- (36) weil Maria heute **sorgfältig** was durchgearbeitet hat.
 because Maria today carefully something worked.through has
 ‘because today Maria carefully has worked through something.’

The negation test also yields the pattern predicted by the other tests, cf. (37).

- (37) a. weil Maria heute was nicht **sorgfältig** durchgearbeitet hat.
 because Maria today something not carefully worked.through has
 ‘Because today Maria worked through something not carefully.’
 b. *weil Maria heute was **sorgfältig** nicht durchgearbeitet hat,
 because Maria today something carefully not worked.through has,
 sondern ...
 but
 ‘because today Maria did not work through something carefully, but ...’
 For (8-a), cf. (34) in Frey & Pittner (1998)

Whereas (37-a) yields a standard sentence negation, (37-b) can only be interpreted as a contrastive negation. In Frey and Pittner’s view, the data from negation again supports the positioning of the base position of process-related adverbials between the direct object and the minimal verb domain, as the base position of the particle used for sentence negation is below that of the arguments, cf. the discussion in section 4.2.1.

The data in (37) can also be explained by semantic considerations alone: if the adverbial *sorgfältig* is process-related, it obviously needs a process that it can relate to. When the sentence is negated, there is no such process, because a negated activity is not a process (for more discussion, cf. section 5.2).

It thus turns out that not all of the data adduced by Frey and Pittner to motivate the position for process-related adverbials given in (29) is not convincing; only the data using quantifier scope and complex frontings supports their position. Eckardt (1998, 2003) argues that the base position of manner adverbials is instead before the direct object. As the data for or against the two positionings of manner adverbials is very

²¹For some speakers, (36) is only acceptable with contrastive focus.

complex, I will postpone a detailed discussion to chapter 5.

4.3.2 Event-internal adverbials

The conditions for the base position of event-internal adverbials are given in (38).

- (38) [Event-internal adverbials]
 The base position of an event-internal adverbial α is minimally c-commanded by the base position of the highest ranked argument β , i.e. there is, modulo adverbials of the same class, no γ whose base position is c-commanded by β and c-commands α .
 Cf. (33) in Frey (2003)

Typical members of this class include locatives, instrumentals and benefactives. A sentence containing these three types of event-internal adverbials is given in (39), where the prepositional phrase *mit dem Messer* ‘with the knife’ serves as instrumental adverbial, *im Wald* ‘in the wood’ as locative adverbial and *für seine Mutter* ‘for his mother’ as benefactive adverbial.

- (39) Frank hat **mit dem Messer im Wald für seine Mutter** einen Hasen
 Frank has with the knife in.the wood for his mother a rabbit
 getötet.
 killed
 ‘Frank killed a rabbit with a knife in the wood for his mother.’

If, instead of a prepositional phrase, an adjective is used as an event-internal adverbial, it typically serves as mental-attitude adverbial.

4.3.2.1 Data motivating the definition

The positioning of event-internal adverbials given in (38) is supported by data involving negation, focus projection, complex frontings and existentially interpreted w-phrases. Again, I will discuss each of them in turn.

Event-internal adverbials can have scope over sentence negation, as (40-a) shows, contrasted against a manner adverbial in (40-b).

- (40) a. weil er **absichtlich** nicht arbeitet.
 because he on.purpose not works
 ‘because he gladly does not work/because it is on purpose that he does not work.’
 b. *weil er **laut** nicht singt
 because he loudly not sings
 = (62) in (Frey & Pittner 1998)

Sentence (40-a) is interpreted as *He intentionally does not work* and *He enjoys not*

working, respectively. This data suggests that mental-attitude adverbials must be positioned outside of the minimal verbal domain.

Data involving focus projection shows that the mental-attitude adverbials not only have to be positioned outside of the minimal verb domain, but also above the direct object.

- (41) a. weil Otto **absichtlich** den ZAUN zerstörte (wide focus)
because Otto on.purpose the fence destroyed
‘because Otto destroyed the fence on purpose’
b. weil Otto den Zaun **abSICHTlich** zerstörte (narrow focus)
because Otto the fence on.purpose destroyed
c. weil Otto den Zaun **abSICHTlich** zerSTÖRte. (narrow focus).
because Otto the fence on.purpose destroyed
= (63) in (Frey & Pittner 1998)

Only in (41-a) is the direct object able to project a wide focus, which indicates that there is no trace between direct object and verb, whereas in (41-b) there is narrow focus on the adverbial, in (41-c) on the adverbial plus verb. Note that one accent suffices for wide focus projection in (41-a) (This is sometimes seen as an advantage, cf. the discussion in 5.3.1).

The data from complex frontings supports the positioning of mental-attitude adverbials before the direct object, cf. (42-a) vs. (42-b).

- (42) a. Den Zaun zerstört hat Otto **absichtlich**.
The.ACC fence destroyed has Otto on.purpose
‘Otto destroyed the fence on purpose.’
b. ??**Absichtlich** zerstört hat Otto den Zaun.
On.purpose destroyed has Otto the fence
= (64) in (Frey & Pittner 1998)

While (42-a) with a fronted direct object and main verb is perfectly acceptable, the fronted mental-attitude adverbials plus main verb is not. This pattern of acceptability suggests the underlying structure for (42-b) given in (43).²²

- (43) ??[Absichtlich t_i zerstört] $_j$ hat Otto [den Zaun] $_i$ t_j .
On.purpose destroyed has Otto the fence

Other mental-attitude adverbials like *bereitwillig* ‘willingly’ show the same pattern, cf. (44).

- (44) a. Einen Baum gefällt hat Fritz gestern **bereitwillig**.
A.ACC tree brought.down has Fritz yesterday willingly
‘Yesterday, Fritz willingly brought a tree down.’

²²For some speakers, (42-b) is acceptable.

- b. ??**Bereitwillig** gefällt hat Fritz gestern einen Baum.
Willingly brought.down has Fritz yesterday a.ACC tree

Note that the grammaticality judgement for the sentences containing complex frontings is ?? and not * as for (33), where, according to Frey & Pittner (1998), complex fronting is impossible due to the trace of the process-related adverbial in the fronted constituent, repeated here as (45).

- (45) *[Einige Artikel t_i gelesen] $_j$ hat Hans heute sorgfältig $_i$ t_j .
Some articles read has Hans today carefully

This difference might be rooted in the fact that (42-b) is acceptable as an echo-answer, cf. its usage in (46-b) as an answer to (46-a).

- (46) a. Was hat Otto denn **absichtlich** zerstört?
What has Otto PART on.purpose destroyed
'What was it that Otto destroyed on purpose?'
b. **Absichtlich** zerstört hat Otto den Zaun.
On.purpose destroyed has Otto the fence
'Otto destroyed the fence on purpose.'

This differs from the results for (33), where not even an echo context works, cf. the question-answer pair in (47).

- (47) a. Was hat Hans heute **sorgfältig** gelesen/sorgfältig gemacht?
What has Hans today carefully read/carefully done
'Today, what did Hans read carefully/do carefully?'
b. *Einige Artikel gelesen hat Hans heute **sorgfältig**.
Some articles read has Hans today carefully

Data with existentially interpreted w-phrases confirms the positioning established so far, cf. (48) and (49).

- (48) a. Wir wissen, daß Frank **absichtlich** wen umgebracht hat.
We know, that Frank on.purpose someone killed has
'We know that Frank killed someone on purpose.'
b. ?Wir wissen, daß Frank wen **absichtlich** umgebracht hat.
We know, that Frank someone on.purpose killed has
- (49) a. Gudrun hofft, daß Frank **bereitwillig** was spendet.
Gudrun hopes that Frank willingly something donates
'Gudrun hopes that Frank is willing to donate something'
b. *Gudrun hofft, daß Frank was **bereitwillig** spendet.
Gudrun hopes that Frank something willingly donates

The positional restriction that event-internal adverbials cannot be positioned before the

highest ranked argument is corroborated by the data in (50), with the highest ranked argument in nominative case, and (51), with the highest ranked argument in dative case.²³

- (50) a. *Otto sagt, DASS **absichtlich** jemand das Fenster beschädigt hat.
 Otto says that on.purpose someone the window damaged has
 b. Otto sagt, DASS jemand **absichtlich** das Fenster beschädigt hat.
 Otto says that someone on.purpose the window damaged has
 ‘Otto says that someone damaged the window on purpose.’
 For (50-a), cf. (65) in (Frey & Pittner 1998)
- (51) a. weil dem Peter **versehentlich** ein Fehler unterlaufen ist
 because the.DAT Peter accidentally a mistake slip.in is
 ‘because Peter accidentally let a mistake slip in’
 b. ?weil **versehentlich** dem Peter ein Fehler unterlaufen ist
 because accidentally the.DAT Peter a mistake slip.in is
 = (66) in (Frey & Pittner 1998)

This example shows that scrambling above the subject position is not possible for these adverbials. Note that (50-a) is acceptable for some speakers.

4.3.2.2 Special properties of mental-attitude adverbials

Frey (2003) notes that within the group of event-internal adverbials, mental attitude adverbials obey some special restrictions, cf. the definition in (52).

- (52) [Mental-attitude adverbials]
 The base position of a mental-attitude adverbial
- (i) is minimally c-commanded by the base position of the highest ranked argument of the main predicate, or
 - (ii) c-commands the maximal projection of the main predicate and is c-commanded by the highest ranked argument in the main predicate’s extended projection.

Semantically, a mental-attitude adjunct relates to the highest ranked argument closest to, and c-commanding, its base position.
 = (55) in Frey (2003)

Clause (52–i) in the definition (52) already shows the special status of mental attitude adverbials within the group of event-internal adverbials: whereas benefactives, locatives and instrumentals can rotate, mental-attitude adverbials like *absichtlich* ‘on purpose’ have to be minimally c-commanded by the highest ranked argument, cf. the

²³For more on base orders for German verb classes, cf. Haider & Rosengren (1998, p. 14f.).

pattern in (53).²⁴

- (53) a. Frieda hat Jochen **absichtlich** mit dem Hammer geschlagen.
 Frieda has Jochen on.purpose with the hammer hit
 ‘Frieda hit Jochen with the hammer on purpose.’
 b. *Frieda hat Jochen mit dem Hammer **absichtlich** geschlagen.
 Frieda has Jochen with the hammer on.purpose hit

Sentence (53-b) is only acceptable if it carries contrastive foci on either *absichtlich* or *geschlagen*.

Clause (52–ii) in the definition (52) is essentially used to account for differences in behaviour of mental-attitude adverbs in interaction with passive in English and German. Thus, in (54-a) *willingly* relates to Peter, while *bereitwillig* ‘willingly’ in (54-b) relates to the doctor.

- (54) a. that Peter **willingly** was examined by the doctor.
 b. daß Peter **bereitwillig** von dem Arzt untersucht wurde.
 = (50) in Frey (2003, p. 182)

This difference is explained by Frey with the help of (52) and the syntactic analysis of the two sentences in (55).

- (55) a. that [_{IP} Peter₁ willingly was [_{VP} t₁ examined by the doctor]]
 b. daß [_{VP} Peter bereitwillig von dem Arzt untersucht wurde]
 = (50) in Frey (2003, p. 185)

For more discussion, cf. Frey (2003, p.182ff.). Note that this analysis of the different behaviour of mental attitude adjuncts in passives in German and English cannot explain well known cases of ambiguity, e.g. (56).

- (56) Sandy was **reluctantly** hit by Kim.
 = (1b) in Wyner (1998)

Sentence (56) allows two readings. In one reading, the experiencer Sandy is reluctant to be hit by Kim. In the other, the agent Kim is reluctant to hit Sandy.

The treatment of these cases of ambiguity is made more difficult by structurally seemingly equivalent cases which are not ambiguous, cf. (57).

- (57) Sandy was **willingly** surprised by Kim.
 = (15b) in Wyner (1998)

Sentence (57) is not ambiguous: it must be Kim who is willing. Due to this data, it seems questionable whether the introduction of the clause (52–ii) is justified. To

²⁴This consequence of the definition by Frey (2003) seems to be unintentional, as he argues “if a mental-attitude adjunct and another even-internal adjunct co-occur inside the projection of the main predicate, the syntactic component will not prescribe an ordering between these adjuncts” (p. 183).

account for the German data, (52–i) suffices.

4.3.3 Event-external adverbials

Event-external adverbials have the base position given in (58).

- (58) [Event-external adverbials]
 The base position of an event-external adverbial α minimally c-commands the base position of the highest ranked argument β , i.e., there is, modulo adjuncts of the same class, no γ whose base position c-commands β and is c-commanded by α .
 Cf. (38) in Frey (1993)²⁵

According to Frey & Pittner (1998), temporal adverbials like *vor zwei Tagen* ‘two days ago’, adverbials of causation like *wegen XXX* ‘because of XXX’ and habitual adverbials like *gewöhnlich* ‘usually’ are all event-external. In addition, some readings of *schnell* ‘quickly’ and *langsam* ‘slowly’ are also event-external.

Data with complex frontings shows that event-external adverbials are positioned above event-internal adverbials. Frey & Pittner (1998) show this by comparing the effect of frontings on sentence (59), which contains an instrumental, i.e. an event-internal adverbial, and an event-external adverbial.

- (59) Hans hat **vor zwei Tagen mit dem Computer** gearbeitet.
 Hans has two days ago with the computer worked
 ‘Two days ago, Hans worked on the computer’

If the temporal adverbial is included in the fronted material, the sentence becomes ungrammatical, cf. (60-a). If the instrumental is included in the fronted material, cf. (60-b), the sentence is acceptable.

- (60) a. ***Vor zwei Tagen** gearbeitet hat Hans **mit dem Computer**.
 two days ago worked has Hans with the.DAT computer
 b. **Mit dem Computer** gearbeitet hat Hans **vor zwei Tagen**.
 With the.DAT Computer worked has Hans two days ago
 ‘Hans worked on the computer two days ago.’
 = (78) Frey & Pittner (1998)

The ungrammaticality of (60-a) can be explained if the representation of (60-a) with included traces given in (61) is correct.

- (61) *[Vor zwei Tagen t_1 gearbeitet]_j hat Hans [mit dem Computer]₁ t_j
 before two days worked has Hans with the.DAT computer
 Cf. (78a’) Frey & Pittner (1998)

²⁵In some publications, Frey and Pittner use the term event-related adverbial instead of event-external adverbial.

4.3. USING THE TESTS FOR CLASSIFICATION

For adjectives, the adverbial usage of *gewöhnlich* gives the same pattern, cf. (62) and the two complex frontings (63-a) vs. (63-b).

- (62) Fritz hat **gewöhnlich absichtlich** daneben geschossen.
 Fritz usually on.purpose off.aim shot
 ‘Usually, Fritz shot to miss.’
- (63) a. **Absichtlich** daneben geschossen hat Fritz **gewöhnlich** .
 On.purpose off.aim shot has Fritz usually
 ‘Usually, Fritz shot to miss.’
 b. ***Gewöhnlich** daneben geschossen hat Fritz **absichtlich**.
 Usually off.aim shot has Fritz on.purpose

In contrast, for the event-external usage of *schnell*, the data is not clear, cf. (64). and (65-a) and (65-b).

- (64) Peter ist **schnell mit dem Fahrrad** zum Bäcker gefahren.
 Peter is quickly with the bicycle to.the baker rode
 ‘Peter quickly rode his bike to the baker.’
- (65) a. **Mit dem Fahrrad** zum Bäcker gefahren ist Peter **schnell**.
 With the bicycle to.the baker rode is Peter quickly
 ‘Peter quickly rode his bike to the baker.’
 b. **Schnell** zum Bäcker gefahren ist Peter **mit dem Fahrrad**.
 Quickly to.the baker rode is Peter with the bicycle
 ‘Peter quickly rode his bike to the baker.’

For me, both complex frontings in (65) are equally acceptable.

If the order of event-internal adverbials and event-external adverbials containing quantifiers is exchanged, the results again point to a positioning of event-external adverbials before event-internal ones, cf. (66).

- (66) a. **WEIL an mindestens einem Abend mit fast jedem Computer**
 because on at.least one evening with almost every computer
 gearbeitet wurde.
 worked was
 ‘Because on at least one evening people worked on every computer.’
 ($\exists\forall$)
- b. **WEIL mit mindestens einem Computer an fast jedem Abend**
 because with at.least one computer on almost every evening
 gearbeitet wurde.
 worked was
 ‘Because on at least one computer people worked on every evening.’
 ($\exists\forall, \forall\exists$)

= (79) Frey & Pittner (1998)

As noted previously, this test cannot be used for the adverbial usage of adjectives since adjectives do not contain quantification.

The patterns using the theme-rheme condition result in the same relative order of event-external and event-internal adverbials, cf. (67) and (68).

- (67) Mit was hat er gestern abend gearbeitet?
 What did he use to work yesterday evening?
- a. ??Er hat [mit dem ComPUter]_{RHEME} [gestern abend]_{THEME}
 He has with the computer yesterday evening
 gearbeitet.
 worked
- b. Er hat [gestern abend]_{THEME} [mit dem ComPUter]_{RHEME}
 He has yesterday evening with the computer
 gearbeitet.
 worked
 ‘Yesterday evening he worked with the help of the computer.’

Cf. (80) Frey & Pittner (1998)

- (68) Wann hat er mit dem Computer gearbeitet?
 When did he work on the computer?
- a. Er hat mit dem Computer gestern ABEND gearbeitet.
 He has with the computer yesterday evening worked
 ‘He worked yesterday evening on the computer.’
- b. Er hat gestern ABEND mit dem Computer gearbeitet.
 He has yesterday evening with the computer worked
 ‘He worked yesterday evening on the computer.’

For (68-b), cf. (81) Frey & Pittner (1998)

For *gewöhnlich* ‘usually’, the position after an event-internal adverbial is ungrammatical whether the event-internal adverbial is part of the theme or not, cf. (69) and (70).

- (69) Wie hat er gewöhnlich daneben geschossen?
 ‘How did he usually shoot to miss?’
- a. *Er hat absichtlich gewöhnlich daneben geschossen.
 He has on.purpose usually off.target shot
- b. Er hat gewöhnlich absichtlich daneben geschossen.
 He has usually on.purpose off.target shot

- (70) Wann hat er absichtlich daneben geschossen?
 ‘When did he shoot to miss?’

- a. *Er hat absichtlich gewöhnlich daneben geschossen.
He has on.purpose usually off.target shot
- b. Er hat gewöhnlich absichtlich daneben geschossen.
He has usually on.purpose off.target shot

Frey & Pittner (1998) also use the theme-rheme condition for the event-external usage of *langsam* 'slowly', cf. (71).

- (71) Wer sollte für uns **langsam** das Essen kochen?
Who should cook for us about now?
- a. ??Für uns sollte OTto langsam das Essen kochen
For us should Otto slowly the food cook
 - b. Für uns sollte **langsam** OTto das Essen kochen
For us should slowly Otto the food cook
'It is high time that Otto cooks for us.'
- = (94) in Frey & Pittner (1998)

Existentially interpreted *w*-phrases can be used to establish the base position of the event-external usages of *schnell* and *langsam* relative to the position of the subject, cf. (72) and (73).

- (72) a. *weil wer **langsam** das Essen kochen könnte.
because someone slowly the food cook could
- b. weil **langsam** wer das Essen kochen könnte.
because slowly someone the food cook could
'because it is high time someone cooked the food'
- = (93) in Frey & Pittner (1998)

- (73) a. *daß wer **schnell** Brötchen holt.
that someone quickly rolls gets
- b. daß **schnell** wer Brötchen holt.
that quickly someone rolls gets
'that someone quickly gets some rolls.'

As the results of the test applications show, the definition in (58) gives the correct conditions for the syntactic position of adjectives serving as event-external adverbials, although the complex fronting test does not yield any reliable results for *schnell*.

4.3.4 Frame adverbials

The class of frame adverbials is defined in (74).

- (74) [Frame adverbials]
The base position of a frame adverbials c-commands the base positions of all

arguments and of all remaining adverbial types except sentence adverbials
Cf. (21) in Frey (2003)²⁶

Frey (1993) uses the example (75) to show that frame adverbials usually follow sentence adverbials.²⁷

- (75) a. *Otto ist **in keinem Land** erstaunlicherweise sehr berühmt.
Otto is in no country surprisingly very famous
b. Otto ist erstaunlicherweise **in keinem Land** sehr berühmt.
Otto is surprisingly in no country very famous
'Surprisingly, Otto is famous in no country.'
= (13) in Frey (1993)

The same effect can be obtained for adjectives serving as frame adverbials, cf. *wirtschaftlich* in (76).

- (76) a. *Otto hat **wirtschaftlich** erstaunlicherweise viel Erfolg.²⁸
Otto has economically surprisingly much success
b. Otto hat erstaunlicherweise **wirtschaftlich** viel Erfolg.
Otto has surprisingly economically much success
'Surprisingly, Otto has economically much success.'

Frey (2003) uses principle C data to corroborate this finding, cf. (77).

- (77) a. * [In Peters₁ Firma]₂ entscheidet er₁ **offensichtlich** t₂ t₁ allein über
In Peter's company decides he apparently alone about
die Ausgaben.
the expenses

²⁶Frey & Pittner (1998) differentiate between frame and domain adverbials. In addition, they claim in their definition (Frey & Pittner 1998, p. 521, (114)) that the base position of these adverbials c-commands the base positions of all the other constituents and the base position of the finite verb.

²⁷Frey (2003) points out that referential frame adverbials might also be positioned before a sentence adverbial.

²⁸In contrast to (75-a), (76-a) is acceptable when used with a bridge accent and a continuation like *, aber er hat keinen Erfolg in der Liebe* 'but he doesn't have any success when love is concerned.' A similar accentuation and continuation does not work for (75-a), because there are no alternatives to *in keinem Land* 'in no country'. If alternatives exist, e.g. when a specific country is used and other countries serve as alternatives, as in (i), the sentence is acceptable, too.

- (i) Otto ist **in Deutschland** erstaunlicherweise sehr berühmt, **in England** dagegen gänzlich
Otto is in Germany surprisingly very famous, in England in.contrast wholly
unbekannt.
unknown
'Surprisingly, Otto is very famous in Germany, but wholly unknown in England.'

- b. [In Peters₁ Firma]₂ entscheidet **offensichtlich** t₂ er₁ allein über die Ausgaben.
 In Peter's company decides apparently he alone about the expenses
 'In Peter's company he alone decides about the expenses'
 = (14') in Frey (2003)

The personal pronoun in (77-a) cannot refer to Peter, whereas this is possible in (77-b). If we call back the principle C (cf. (18)), the reason for the unacceptability of coindexing in (77-a) is that the pronoun c-commands the trace of the preposed prepositional phrase. In (77-b), on the other hand, the pronoun c-commands neither the trace nor the preposed prepositional phrase, and a coindexing is therefore possible.

The base position of frame adverbials in relation to arguments can be established with the help of existentially interpreted w-phrases, cf. (78).

- (78) a. *daß wer **in diesem Dorf** weltberühmt ist.
 that someone in this village world-famous is
 b. daß **in diesem Dorf** wer weltberühmt ist.
 that in this village someone world-famous is
 'that someone in this village is world-famous.'
 Cf. (18) in Frey (2003)

- (79) a. *daß wer **wirtschaftlich** den Krieg verloren haben muß.
 that someone economically the war lost have must
 b. daß **wirtschaftlich** wer den Krieg verloren haben muß.
 that economically someone the war lost have must
 'that, economically, someone has lost the war.'

The data on frame adverbials becomes less clear when looking at the behaviour of *wirtschaftlich* 'economically' in more detail, cf. (80).

- (80) a. Wir wissen, daß die USA diesen Krieg **wirtschaftlich** gewonnen haben.
 We know, that the USA this war economically won have
 b. Wir wissen, daß die USA **wirtschaftlich** diesen Krieg gewonnen haben.
 We know, that the USA economically this war won have
 c. Wir wissen, daß **wirtschaftlich** die USA diesen Krieg gewonnen haben.
 We know, that economically the USA this war won have
 'We know, that the USA won this war with the help of economics/by economic means/as far as the economy is concerned'

On Frey and Pittner's account, *wirtschaftlich* 'economically' in (80-a) should be interpreted as a process-related adverbial, since it shares this position. That is, in winning the war, the USA used economical means, such as sanctions, economic pressure on allies of the enemy etc. In contrast, (80-c) should yield a frame reading, that is, from

an economic point of view, the USA have won the war, i.e. they are now economically better off than before the war. The position in (80-b) should yield yet another, third reading, as it is neither the position of a frame nor a process adverbial. None of this is the case. In speaker judgements, (80-a) is the unmarked order, but that order can receive either interpretation. (80-c) seems most marked, and there might be a slight preference for the domain interpretation. However, more empirical studies are needed to see if these two usages can really be linked to different positions.

4.3.5 Sentence adverbials

The definition in (81) specifies the base positions of sentence adverbials.

- (81) [Sentence adverbials]
 The base position of a sentence adverbial must c-command
- (i) the base positions of all arguments and of all other adjuncts and
 - (ii) the base position of the finite verbal form.
- Cf. (20) in Frey (2003)

In terms of the semantic classification of adverbials given in chapter 3, sentence adverbials correspond to subject-oriented adverbials and speaker-oriented adverbials. With regard to adverbial adjectives, this group is of relatively little interest, because adjectives hardly serve as sentence adverbials (for the exceptions, cf. examples (87) and (88)). Sentence adverbials are positioned above the base position of all arguments. The relevant data is given below.

- (82) a. *weil wer **vermutlich** geraucht hat.
 because someone probably smoked has
- b. weil **vermutlich** wer geraucht hat.
 because probably someone smoked has
 ‘because probably someone smoked.’
- Cf. (100) in Frey & Pittner (1998)

The base position for sentence adverbials is higher than that of event-external adverbials, as can be seen from Frey & Pittner’s (1998) example in (83).

- (83) a. weil er **wahrscheinlich** wegen was eingeschnappt war.
 because he probably because.of something huffy was
 ‘since he was huffy because of something.’
- b. *weil er wegen was **wahrscheinlich** eingeschnappt war.
 because he because.of something probably huffy was
 = (101) in Frey & Pittner (1998)

The same pattern emerges when adjectives serve as event-external respective event-internal adverbials, cf. (84).

4.3. USING THE TESTS FOR CLASSIFICATION

- (84) Fritz ist nicht da,
'Fritz is not here,'
a. weil er **angeblich** schnell zur Post gegangen ist.
because he allegedly quickly to.the post.office gone is
'because he allegedly quickly went to the post office.'
b. *weil er schnell **angeblich** zur Post gegangen ist.
because he quickly allegedly to.the post.office gone is

In addition, sentence adverbials must c-command the finite verb, as can be seen from the examples in (85).

- (85) a. * **Glücklicherweise** viel gelacht wird in diesem Land.
Luckily much laughed is in this country
b. * **Vermutlich** geraucht wird heute abend.
Probably smoked is today evening
= (106a-b) in Frey & Pittner (1998)

Frey & Pittner (1998) also give some examples containing subject-oriented adverbials (in their terminology: subject-oriented sentence adverbials). These adverbials also must c-command the finite verb, cf. (86).

- (86) a. * **Ungeschickterweise** falsche Antworten gegeben hat er.
Infelicitously wrong answers given has he
b. * **Klugerweise** geschwiegen hat er.
Intelligently kept.silent has he
= (108) in Frey & Pittner (1998)

Both adjectives mentioned as being able to serve as subject-oriented adverbials in section 3.3.3 of chapter 3 do not display this pattern, cf. (87) and (88).

- (87) a. Er hat **taktvoll** geschwiegen.
He has discretely said.nothing
'Discretely, he said nothing.'
b. **Taktvoll** geschwiegen hat er.
Discretely said.nothing has he
'Discretely, he said nothing.'
- (88) a. Sebastian saß **tapfer** auf dem Stuhl.
Sebastian sits bravely in his chair
'Bravely, he sat on the chair'
b. **Tapfer** auf dem Stuhl gesessen hat er.
Bravely on the chair sat has he.
'Bravely, he sat on the chair'

The reasons for the deviating behaviour of *taktvoll* and *tapfer* are not clear.

4.4 Conclusion

This chapter introduced seven tests to be used in order to determine the base positions of adverbials in German. In a second step, it was shown how the application of these tests leads to a syntactic classification of adverbials into five distinct classes.

Section 2 introduced the tests in detail. The tests can be grouped according to the techniques they use. The negation test and the test using *w*-phrases rely on the assumption that the positions of both the particle used for sentence negation and the existentially interpreted *w*- phrases are fixed. Consequently, the positions of other elements relative to these two kinds of constituents allows a positioning of these other elements. The test using focus projection and the test using the theme-rheme structure are both based on the information structure of the sentence whose linear order is under investigation. The test using complex frontings does rely solely on speaker judgements of single sentences. The two remaining tests, the principle C test and the quantifier scope test yield very clear results; however, they may not, due to their nature, be applied to adverbial adjectives, since adjectives per their definition do not contain bound nominals or quantifiers.

In section 3, I have shown that the application of the tests resulted in a syntactic classification of adverbials into five groups: process-related adverbials, event-internal adverbials, event-external adverbials, frame adverbials and sentence adverbials. These five groups can be distinguished through their structural position, cf. the table 4.1.

ADVERBIAL CLASS	STRUCTURAL POSITION
Process-related adverbials	c-command the predicate complex
Event-internal adverbials	are minimally c-commanded by the highest ranked argument
Event-external adverbials	c-command the base position of the highest ranked argument
Frame adverbials	c-command the base position of all arguments and all adverbial types except sentence adverbials
Sentence adverbials	c-command the finite verb and the base position of all arguments and other adverbials

Table 4.1

It turns out that when looking only at data containing adverbial adjectives, only event-internal and event-external adverbials can reliably be classified with the help of the tests. The group of sentence adverbials can be disregarded, because hardly any adjectives can serve as a sentence adverbial. For frame adverbials, it was shown that at least for those adjectives that also allow a method-oriented reading, the dependence of the interpretation on the positioning is not wholly clear. Adjectives serving as process-related adverbials, the group which includes manner adverbials, also result in no decisive positioning. One of the reasons why the results for adjectives serving as adverbials are not as clear as the results for other adverbials is that of the seven tests, two, namely the principle C test and the test involving quantifiers, cannot be used, since adjectives contain neither quantification nor bound material.

Chapter 5

The syntactic position of manner adverbials

5.1 Introduction

In section 4.3.1, I presented data showing that the syntactic position of process-related adverbials, including manner adverbials, is not clear, due to conflicting evidence. Since, as argued earlier, manner adverbials present the prototypical usage of adverbial adjectives in German, I will discuss the problem of their syntactic position in detail in this chapter. I argue that the data can only be accounted for if several independent factors that influence the positioning of manner adverbials are taken into account.

This chapter is organized as follows: in section 2, I introduce the data showing that the conclusions drawn by Frey & Pittner with regard to the positioning of adverbials are not conclusive. This is done with the help of their own test methods. In section 3, I use information structure in another attempt to establish a base position for manner adverbials. The result of these two sections is that none of the seven tests by Frey & Pittner yields conclusive results, since many other factors interfere. In section 4, I investigate these other factors, which concern *integration*, *associative readings*, data from textual cohesion and the status of the direct object, i.e. whether it is indefinite, topical or quantified.

5.2 Frey and Pittner's data revisited

In section 4.3.1, I presented Frey & Pittner's (1998) argumentation for a base position of process-related adverbials that is lower than the base position of all arguments and sentence negation. Since manner adverbials form a subgroup of process-related adverbials, they are also positioned between arguments and verbs. In contrast, Eckardt (1998, 2003) favours a base position of manner adverbials (MA) before the direct object (DO). The two word orders under discussion are thus (1-a) and (1-b).

- (1) a. subject manner_adverbial direct_object verb (=MA DO)
 b. subject direct_object manner_adverbial verb (=DO MA)

Eckardt's argumentation for the word order in (1-a) rests mainly on data from focus projection, but also on further data using Frey and Pittner's tests. In this section, I will again present Frey and Pittner's original data, along with Eckardt's counterexamples. Data using focus projection will be discussed in the next section.

In determining the base position of manner adverbials, Frey & Pittner used four tests: scope, complex frontings, w-phrases, and negation (cf. examples (30), (32), (35) and (8-a) in section 4.3.1). For adjectives, only the complex fronting test delivers clear results, whereas the other tests either cannot be applied (quantifier scope), do not deliver clear results (w-phrases) or seem doubtful due to alternative explanations (negation). Below, I will look at these points in detail.

Complex frontings Frey & Pittner's (1998) data using complex frontings, cf. (32) in chapter 3, is repeated here as (2).

- (2) a. *Einige Artikel gelesen hat Hans heute **sorgfältig**.
 A.few articles read has Hans today carefully
 b. **Sorgfältig** gelesen hat Hans heute einige Artikel.
 Carefully read has Hans today a.few articles
 'Today, Hans carefully read a few articles.'
 = (33) in Frey & Pittner (1998)

As mentioned at the beginning of this section, the results of these tests are the ones that cannot be called into question. Other manner adverbials display the very same pattern, cf. e.g. *laut/leise* 'loudly/quietly' in (3).

- (3) a. * Ein Lied gesungen hat Fritz **laut/leise**.
 A song sung has Fritz loudly/lowly
 b. **Laut/Leise** gesungen hat Fritz ein Lied.
 Loudly/lowly sung has Fritz a song
 'Fritz loudly sang a song.'

The data from the complex frontings test thus supports Frey & Pittner's analysis.

Quantifier scope Eckardt (2003) points out that the test involving quantifier scope cannot be used in determining a base position for adjectives serving as manner adverbials. The adjectives themselves cannot display scope effects, as they do not contain any quantification. Frey & Pittner therefore use the common paraphrase *in ADJ Weise* 'in ADJ manner' (cf. TEST 3.2) and replace the adjective with the quantifier *jeder* 'every', yielding *in jeder Weise* 'in every manner'. Eckardt (2003) correctly points out that this phrase need not be a manner modification. She shows this with the help of (4). The adverbial in (4-a), a subordinated clause, and the adverbial in (4-b), an adjective, can

both be used in answering the question *In welcher Weise* ‘in what manner’. They both specify manner and are therefore manner adverbials. However, the same question can also be answered with the help of an instrumental, cf. (4-c)¹ and (4-d). Furthermore, mental-attitude adverbials can be used in the answer, cf. (4-e) (Cf. also the discussion of the *in X manner* paraphrase in section 3.2).

- (4) In welcher Weise hat er die Frau umworben?
 ‘In which way did he court the woman?’
- a. Er hat sie umworben, **indem er ihr Blumen auf den Balkon warf**.
 He has her courted by he her flowers onto the balcony threw
 ‘He courted the woman by throwing flowers onto the balcony.’
 - b. Er hat die Frau **schmierig** umworben. (manner)
 He has the woman smarmily courted
 ‘He courted the woman smarmily.’
 - c. Er hat die Frau **mit Liedern und Geschenken**
 He has the woman with songs and gifts
 umworben. (instrument)
 courted
 ‘He courted the woman with songs and gifts.’
 - d. Er hat die Frau **mit einer Balalaika** umworben. (instrument)
 He has the woman with a balalaika courted
 ‘He courted the woman with a balalaika.’
 - e. Er hat die Frau **bereitwillig** umworben. (mental-attitude)
 He has the woman willingly courted.
 ‘He courted the woman willingly.’
- = (92) in Eckardt (2003)

Frey and Pittner assume that instrumentals, as well as mental-attitude adverbials, are event-internal adverbials (cf. section 4.3.2). Since the base position of these types of adverbials differs from that of process-related adverbials, this test cannot be used to yield any decisive results.

Existentially interpreted w-phrases Frey & Pittner (1998) assume that existentially interpreted w-phrases always appear in their base position in German and they use w-phrases to establish the base positions for manner adverbials, cf. (5) and (6).

- (5) weil Maria heute was (nicht) **sorgfältig** durchgearbeitet hat.
 because Maria today something (not) carefully worked.through has
 ‘because today, Maria did work through something not carefully.’
 = (34) in Frey & Pittner (1998, p 502)

¹Eckardt (2003) gives ‘*theme?*’ instead of instrument as the function of this adverbial.

- (6) Peter will jetzt was **konzentriert** lesen.
 Peter will now something carefully read
 'Peter will now read something carefully.'
 = (61) in Frey (2003)

If *was* 'something' appears in its base position in these sentences, then, according to Frey & Pittner's (1998) assumption, the base position of manner adverbials is to the right of the DO.

Eckardt (2003) argues against this analysis with the help of the examples in (7).

- (7) a. Alicia hat dann **gierig** was gegessen.
 Alicia has then greedily something eaten
 'Alicia then greedily ate something.'
 b. Peter hat dann **vorsichtig** wen gefragt.
 Peter has then carefully someone asked
 'Peter then carefully asked someone.'
 c. Claudia hat **demonstrativ** was gelesen.
 Claudia has ostentatiously something read
 'Claudia ostentatiously read something.'
 d. Eberhard zog **schüchtern** was aus.
 Eberhard took shyly something off
 'Eberhard shyly took something off.'
 = (91) in Eckardt (2003)

In all four sentences, the manner adverbial is positioned before the existential interpreted w-phrase. Taking a closer look at this data, we find that some adjectives are clearly better in either pre- or post-object position, while others seem to allow for both positions. For me, *sorgfältig* 'carefully', *vorsichtig* 'cautiously', *konzentriert* 'concentratedly' and perhaps *gierig* 'greedily' are acceptable in either position, whereas *schüchtern* 'shyly' and *demonstrativ* 'ostentatiously' are only possible before the w-phrase.²

The test by itself thus does not contribute much to the question. The question why some adjectives have preferences for only pre- or post-object position will be discussed in more detail in section 5.4.

Negation Frey & Pittner (1998) also use negation data, cf. (37) from section 4.3.1, repeated here as (8).

- (8) a. weil Maria heute was nicht **sorgfältig** durchgearbeitet hat.
 because Maria today something not carefully worked.through has
 'Because today Maria worked through something not carefully.'
 b. *weil Maria heute was **sorgfältig** nicht durchgearbeitet hat.
 because Maria today something carefully not worked.through has
 For (8-a), cf. (34) in Frey & Pittner (1998)

²For this data, speaker judgements vary.

This test is problematic because there exists an alternative explanation for the pattern. In particular, the ungrammaticality of the pattern in (8-b) can also be accounted for on purely semantic grounds.³ Intuitively, it is clear that a manner can only be specified if there is an action or a process that can be executed or can happen in some specific manner. However, no such process or action is available in (8-b), nor in the acceptable variant without the manner adverbial, cf. (9).

- (9) weil Maria heute was nicht durchgearbeitet hat.
because Maria today something not worked.through has, but
'because today Maria did not work through something.'

The proposition expressed by (9) simply states that Maria did not do something, and it is generally impossible to not do things in a particular manner (For a rare exception, cf. example (42) in chapter 6 and the discussion there).

5.3 Manner modification and information structure

This section turns to the use of tests involving information structure and their application to sentences containing manner adverbials. In section 4.3.1, neither data from focus projection nor from the theme-rheme condition was used to determine the base position of manner adverbials. Eckardt, in her critique of the positioning of manner adverbials propagated by Frey and Pittner, relies heavily on data from focus projection. Below, I will first discuss two arguments from Eckardt, namely that (a) with maximal focus, only the word order MA DO is possible and (b) only this order can be realized with just a single accent. Following this, I will discuss the application of the theme-rheme test to material containing manner adverbials and then take stock of the results.

5.3.1 Focus projection

Eckardt (2003) in her discussion of the correct base position for manner adverbials makes use of out-of-the-blue contexts.⁴ In particular, she argues that the behaviour of sentences containing manner adverbials in out-of-the-blue contexts can be counted as evidence for the correct assignment of the base position of manner adverbials. A standard way to model out-of-the-blue contexts is to use questions such as *What happened?/What happened then?* (cf. e.g. Eckardt (2003, p. 294), where *What happened then* is said to be a 'common test for wide focus').⁵

³Similar argumentation can also be found in Huang (1988, p. 285) and Maienborn (2004, p. 25). Huang discusses Chinese data parallel to the German data presented here, that is, where sentence negation is incompatible with manner modification. Maienborn argues that "The result of negating *The train arrived* does not express an event anymore. Thus, the addition of [...] a manner adverbial is excluded."

⁴Cf. also Eckardt (1996)

⁵For a general critique of the usage of questions to model out-of-the-blue contexts, cf. Weskott (2003, p. 12f). Höhle (1982, p. 91) already argues that the function of these and similar questions should be

A further crucial assumption of Eckardt is that definite NPs cannot be used to reliably establish wide focus. According to Eckardt (2003, p. 294), if the subject and the object of a sentence refer to a known object in the common discourse universe, then the question *What happened then?* is interchangeable with the question *What did the subject do to the object?*. Therefore, only indefinite NPs should be used in out-of-the-blue-contexts.

Note that Eckardt's (2003) understanding of focus thus clearly and significantly differs from that of Höhle (1982), cf. footnote 6 in section 4.2.2, where Höhle makes it clear that for him known material can be in the focus whenever its function is new.

If we only consider sentences with indefinite DOs, only the order MA DO can be used in out-of-the-blue contexts, while the order DO MA cannot, cf. (10-a) vs. (10-b).

- (10) Was ist dann passiert?
 'What happened then?'
 a. ??Hans hat ein Lied **laut** gesungen.
 Hans has a song loudly sung
 b. Hans hat **laut** ein Lied gesungen.
 Hans has loudly a song sung

However, this pattern cannot be obtained for all sentences containing manner adverbials, cf. the data for *intelligent* 'intelligently', *schlampig* 'sloppily' and *schön* 'beautifully' given below.

- (11) Was ist dann passiert?
 'What happened then?'
 a. Hans hat eine Frage **intelligent** beantwortet.
 Hans has a question intelligently answered
 'Hans answered a question intelligently.'
 b. Hans hat **intelligent** eine Frage beantwortet.
 Hans has a question intelligently answered
 'Hans answered a question intelligently.'

Both answers in (11) are equally acceptable, but both are more marked than the answer (10-b). The degree to which they are felt as marked differs considerably: some informants gave both answers in (11) a question mark, some find them both a bit marked, with (11-a) being more marked than (11-b), yet others do not see a different pattern than in (10). The reason for the different patterns of judgements between (10) and (11) are not wholly clear to me. Two candidates for an explanation are (a) the Gricean maxims concerning quantity and (b) the very idea of a null-context.

Grice (1975) distinguishes two maxims that fall into the category quantity, cf. (12).

- (12) a. Make your contribution as informative as is required (for the current pur-

understood as assistance for the reader to see what is supposed to be new information and what is supposed to be in the relevant context.

poses of exchange).

- b. Do not make your contribution more informative than is required.

For our discussion, a point that Grice raises with respect to (12-b) is of interest: “[...] overinformativeness may be confusing in that it is liable to raise side issues; and there may also be an indirect effect, in that the hearers may be misled as a result of thinking that there is some particular *point* in the provision of the excess of information.” Grice (1975, p. 152)

For (10), the answer in (10-b) is more informative than the three answers in (13).

- (13) Was ist dann passiert?
 ‘What happened then?’
- a. Hans hat ein Lied gesungen.
 ‘Hans sang a song.’
- b. Hans hat laut gesungen.
 ‘Hans sang loudly.’
- c. Hans hat gesungen.
 ‘Hans sang.’

None of these answers, however, appears to contain excessive information in the sense of Grice. Maybe one could argue that (13-c) contains too little information, but again, this does not have a very strong effect. This contrasts with the two answers in (11). Both word orders seem to suggest that there is some particular point in adding the adverbial.

A second factor that might account for the different behaviour of these two sentence pairs with regard to null-contexts lies in the concept of a null-context itself: Ideally, nothing is given and everything is new information. In the case of (11), this kind of null-context seems already questionable by the very fact that the activity expressed in the sentences serving as answers is not compatible with a null-context: if Hans is to answer a question, then someone must have asked that question and the question is given.

The pattern for *schlampig* ‘sloppily’ is given in (14), for *schön* ‘beautifully’ in (15).

- (14) Was ist dann passiert?
 ‘What happened then?’
- a. ?? Hans hat ein Zelt **schlampig** aufgebaut.
 Hans has a tent sloppily put.up
- b. * Hans hat **schlampig** ein Zelt aufgebaut.
 Hans has sloppily a tent put.up
- (15) Was ist dann passiert?
 ‘What happened then?’
- a. * Hans hat eine Arie **schön** gesungen.
 Hans has an aria beautifully sung

- b. ?? Hans hat **schön** eine Arie gesungen.
 Hans has beautifully an aria sung

The first striking difference between these two sentence pairs and those containing *laut* ‘loudly’ and *intelligent* ‘intelligently’ discussed above is that in both cases both answers are not good. The second notable fact is that the degree of their unacceptability varies, and that this variation is in each case different: in (14), the word order DO MA is extremely marked, but not unacceptable, while for (15), the word order MA DO is extremely marked and the other linearization unacceptable. To complicate the case, intuitions over the two last sentence pairs are not as uniform as the judgement on the first two pairs. For some speakers, (14-b) is better than (14-a), for other speakers, (15-b) is just as bad as (15-a). The uncertainties with regard to the correct judgement of (15-b) might be due to the fact that there are some usages of *schön* ‘beautifully’ that require this word order.⁶

Wide Focus with one accent In Eckardt’s view, it is a benefit of the sentences with the order MA DO that they can carry maximal focus with only a single accent. The

⁶More specifically, *schön* ‘beautifully’ before the direct object allows a reading that somehow relates to the activity as a whole and also expresses the speaker’s opinion that the fact that the event takes place is in accordance with his own preferences.

- (i) a. Die Kinder haben **schön** im Garten gespielt.
 The children have beautifully in.the garden played
 ‘Luckily, the children played quietly in the garden’
 b. Der Vater hat **schön** die Wasserkisten hochgeschleppt.
 The father has beautifully the water.crates carry.upstairs
 ‘Luckily, the father has nicely carried the water crates upstairs’

These usages of *schön* are classified as event-external usages in Pittner (1999, p. 107) [there: event-related], where the minimal pair (ii) is used.

- (ii) a. Sie hat **schön** das Bild gemalt.
 She has beautifully the picture painted
 ‘Luckily, she quietly painted the picture.’
 b. Sie hat das Bild **schön** gemalt.
 She has the picture beautifully painted
 ‘She painted the picture beautifully’
 = (122) Pittner (1999, p. 107)

In (ii-a), the activity as a whole, as Pittner writes, proceeded *schön*, e.g. quietly and peaceful etc., whereas in (ii-b) Pittner speaks of a ‘resultatsbezogenes Adverbial der Art und Weise’.

Similar effects arise sometimes with other AAs, for example *wunderbar* in (iii), whose positioning might be explained in a similar way.

- (iii) Sie hat heute **wunderbar** Sonaten gespielt.
 She has today wonderfully sonatas played
 ‘Today the wonderfully played sonatas’
 = (63b) in Frey (2003) (there explained as a case of object integration)

In the context of a *Wie ... ?* ‘How ...?’ question, only the word order DO MA is acceptable. It is tempting to explain this word order restriction by reference to some sort of topicality effect. The pattern that results from the above examples, i.e. (19), corresponds to the information-structural commonplace that known material tends to be placed to the left, new material to the right. In (18), the DO is already known, as is indicated by the usage of the definite article in the question.

- (19) a. theme > rheme
 b. *rheme > theme

However, this pattern usually does not override the base order. This fact is the basis of the Lernerz-test, discussed in section 4.2.3. Recall that the main tenet of this test is that of two word orders AB and BA, one can be restricted insofar as it does not allow an ordering where the rheme precedes the theme. If it were the case that known material always moves to the left, this test would not work at all, since then the argument asked for by the respective constituent questions should always be following the argument already contained in the question. If we now contrast the behaviour of the material used in (18) to the same material in the context of a *Was ... ?* ‘what’ question, we see a different pattern, cf. (20).

- (20) Was hat Otto laut vorgesungen?
 ‘What did Otto sing loudly?’
 a. Otto hat [laut]_A [ein Lied]_B vorgesungen.
 Otto has loudly a song sung
 theme > rheme
 b. Otto hat [ein Lied]_B [laut]_A vorgesungen.
 Otto has a song loudly sung
 rheme > theme
 ‘Otto loudly sang a song.’

The result of the application of the Lernerz test is therefore that the unmarked word order is DO MA.⁸

Similar to the results of the focus test, the results for this test become a bit unclear if a larger set of data is considered. I demonstrate this below by looking at the behaviour of the same set of adjectives, *intelligent* ‘intelligently’, *schlampig* ‘sloppily’, and *schön* ‘beautifully’.

- (21) Wie hat Otto die Frage beantwortet?
 ‘How did Otto answer the question?’
 a. Otto hat die Frage intelligent beantwortet.
 Otto has the question intelligently answered
 ‘Otto answered the question intelligently.’

⁸Lernerz (1977, pp. 85ff) also uses his test in order to determine the word order of some adverbials relative to the DO and the indirect object, but he does not use it for manner adverbials.

- b. *Otto hat intelligent die Frage beantwortet.
 Otto has intelligently the question answered
- (22) Was hat Otto intelligent beantwortet?
 ‘What answered Otto intelligently?’
- a. Otto hat eine Frage intelligent beantwortet.
 Otto has a question intelligently answered
 ‘Otto answered a question intelligently.’
- b. ?Otto hat intelligent eine Frage beantwortet.
 Otto has intelligently a question answered

The pattern for *intelligent* deviates from the patterns exhibited by the sentence pair containing *laut* ‘loudly’. While the result for the *How ... ?* question is similar, cf. (21), the results from the *What ... ?* question are different, because (22-a) seems to be a better answer than (22-b) in this context. The two other adjectives, *schlampig* and *schön* yield yet another pattern, compare below.

- (23) Wie hat Otto das Zelt aufgebaut?
 ‘How did Otto put up the tent?’
- a. Hans hat das Zelt schlampig aufgebaut.
 Hans has the tent sloppily put.up
 ‘Hans sloppily put the tent up.’
- b. *Hans hat schlampig das Zelt aufgebaut.
 Hans has sloppily the tent put.up
- (24) Was hat Otto schlampig aufgebaut?
 ‘What did Otto sloppily put up?’
- a. Hans hat das Zelt schlampig aufgebaut.
 Hans has the tent sloppily put.up
 ‘Hans sloppily put the tent up.’
- b. *Hans hat schlampig das Zelt aufgebaut.
 Hans has sloppily the tent put.up
- (25) Wie hat Otto die Arie gesungen?
 ‘How did Otto sing the aria?’
- a. Otto hat die Arie schön gesungen.
 Otto has the aria beautifully sung
 ‘Otto sang the aria beautifully.’
- b. *Otto hat schön die Arie gesungen.
 Otto has beautifully the aria sung
- (26) Was hat Otto schön gesungen?
 ‘What did Otto sing beautifully?’
- a. Otto hat die Arie schön gesungen.
 Otto has the aria beautifully sung

- ‘Otto sang the aria beautifully.’
 b. *Otto hat schön die Arie gesungen.
 Otto has beautifully the aria sung

Again, for both *schlampig* ‘sloppily’ and *schön* ‘beautifully’ the pattern with regard to the *how*-question resembles the results presented so far, cf. (23) and (25): only the order DO MA is acceptable, but not the order MA DO. The results for the *what*-question, in contrast, differ from the pattern obtained for *intelligent* ‘intelligently’: the judgements correspond exactly to the pattern exhibited in the context of the *how*-question, cf. (24) and (26): again, only DO MA is acceptable, while MA DO is not acceptable. This suggests that for *schlampig* ‘sloppily’ and *schön* ‘beautifully’ the position before the direct object is more marked than for *intelligent* ‘intelligently’.

5.3.3 Conclusion

The application of Frey & Pittner’s information structure tests have yielded inconclusive results as far as the base position of manner adverbials is concerned. The one clear result achieved by using focus projection supports the positioning of the manner adverbial before the direct object, the one clear result using the theme-rheme condition supports the opposite order. If the condition that a sentence may carry only one accent is added to the focus test, then only the word order MA DO is acceptable. However, the addition of this condition is an ad-hoc measure and is not supported by independent arguments.

One reason for the different results for the theme-rheme condition and the focus projection could lie in the fact that for the focus test, an indefinite direct object is used, while for the theme-rheme condition I use in the answer to the *what*-constituent question an indefinite object, but in the answer to the *how*-constituent question a definite direct object. The reason for this difference is that the *wie*-constituent question does not go together with an indefinite noun phrase, cf. (27) and (28).⁹

- (27) ??Wie hat Hans ein Lied gesungen?
 ‘How did Hans sing a song?’
 a. Hans hat ein Lied laut gesungen.
 Hans has a song loudly sung
 b. Hans hat laut ein Lied gesungen.
 Hans has loudly a song sung
- (28) ??Wie ist Holger ein Rennen angegangen?
 ‘How did Holger start a race?’
 a. Holger ist ein Rennen langsam/schnell angegangen.
 Holger is a race slowly/fast start.out

⁹*Wie*-questions with indefinite DOs might be used as echo-questions, though.

- b. Holger ist schnell/langsam ein Rennen angegangen.
 Holger is quickly/slowly a race start.out

I will come back to the problem of indefinite vs definite direct objects in the discussion in section 5.4.4.

5.4 Independent factors

The previous two sections have shown that a mechanic application of the tests for determining base positions does not yield clear results for manner adverbials. One of the reasons for the unclear result lies in the existence of a series of other factors that also play a role in the positioning of manner adverbials. Two such factors that are already referred to by Frey & Pittner and Eckardt are integration and the definiteness/indefiniteness of the direct object. They will be discussed in section 5.4.1 and 5.4.4, respectively. In addition, I will argue that sometimes the different positions lead to different readings (cf. section 5.4.2). Further factors that influence the positioning are textual cohesion (cf. section 5.4.3) and whether or not the direct object is quantified (cf. section 5.4.5).

5.4.1 Integration

Frey & Pittner (1998, pp.502ff) argue that variation in word order between MA DO and DO MA can be explained by taking recourse to integration in the sense of Jacobs (1993). They hold that the basic linear order is DO MA and the deviant MA DO results from the direct objects in question being integrated in the verb, forming a structurally complex predicate.¹⁰ To adequately judge this explanation it is necessary to introduce the idea of *integration* in more detail. The basic idea behind integration in the sense of Jacobs (1993) is best illustrated by his original introductory examples, cf. (29), and his own comments on them in (30).

- (29) a. [Flüssig₁treibstoff₂]
 Liquid.fuel
 ‘liquid fuel’
 b. [[Ein Gewitter]₁[zieht auf]₂]
 A thunderstorm draws up
 ‘A thunderstorm is brewing up.’
 c. [[Eine Türe]₁öffnen₂]
 a door open
 ‘to open a door’
 d. [auf₂[dem Auto]₁]
 on the car

¹⁰Frey & Pittner (1998, p. 501) point out that this departs from Jacobs view of integration, as he does not assume that the integration relations are structurally reflected in the syntactic representation.

- (30) “The common property that makes (29-a-d) good examples for integration is the holistic manner in which these utterances establish reference to whatever they refer to. Although their meaning is composed out of the meaning of two sisterconstituents each, this does not correspond to a double reference to language external entities. Rather, no extra semantic processing is required for at least one of the sisterconstituents.” (p.64) ¹¹ [my translation]

In my view, these opening examples from Jacobs in combination with his comments already expose the weakest point of the concept of integration: it is so informal and vague, that it is not clear when something is integrated or not. Intuitively, I can follow Jacobs’ comments especially in view of the examples (29-a) and (29-b), but already (29-c) and (29-d) are not very convincing.

Formally, integration is a relationship that holds between two constituents if the conditions in (31) are fulfilled.

- (31) Constituent X_1 is integrated into constituent X_2 , iff the following holds:
- a. X_1 and X_2 are daughters of the same constituent Y , and X_2 is the head of Y
 - b. (i) X_1 is an argument of X_2 , or
(ii) Y is a word and X_1 is a modification (‘eine nähere Bestimmung zu’) of X_2
 - c. if X_1 is assigned a theta-role through X_2 , the following holds:
 - (i) X_2 does not assign a property to X_1 which is unlimited in time
 - (ii) X_1 has prototypical semantical object properties
 - d. X_2 contains no more constituents than the following:
 - (i) a non-complex core-constituent L
 - (ii) (optionally) functional elements, that extend L

Cf. Jacobs (1993, p. 71, Bed1)

Frey & Pittner now adduce the following examples:

- (32) a. Ich habe den Mann **abgrundtief** verachtet.
I have the.ACC man profoundly despised
‘I profoundly despised the man.’
- b. *Ich habe **abgrundtief** den Mann verachtet.
I have profoundly the.ACC man despised
= (36a) in Frey & Pittner (1998)
- (33) a. Sie hat jedes Hemd **sorgfältig** gebügelt.
She has every shirt carefully ironed

¹¹“Die für Integration konstitutive gemeinsame Eigenschaft von (29)[a]-(29)[d] ist die holistische Weise, in der der außersprachliche Bezug dieser Ausdrücke hergestellt wird: Obwohl sich ihre Bedeutung aus den Bedeutungen der beiden Tochterkonstituenten zusammensetzt, ist mit den Ausdrücken (29)[a]-(29)[d] nicht ein zweifacher Zugriff auf Außersprachliches verbunden. Vielmehr entspricht jeweils mindestens einer Teilkonstituente kein eigener semantischer Verarbeitungsschritt.”

- ‘She ironed every shirt carefully.’
 b. *Sie hat **sorgfältig** jedes Hemd gebügelt.
 She has carefully every shirt ironed
 = (36b) in Frey & Pittner (1998)¹²

According to Frey & Pittner, there is no integration in the above examples because in (32) the DO is the stimulus, that is, the DO is not a proto-patients a la (Dowty 1989), and in (33) the DO contains *jeder*-quantification, and quantifiers with distributive readings block integration (as Frey & Pittner argue).¹³

Note that the adverbial *abgrundtief* ‘profoundly’ is, within the terminology of this work, not a manner but a degree adverbial. I will discuss data involving quantified direct objects in more detail in section 5.4.5.

5.4.1.1 W-phrases and integration

Frey (2003, p. 206, fn 14) claims that w-phrases can participate in the formation of a complex predicate. If this were the case, then the order adverbial-w-phrase is simply the result of complex predicate formation. If we look at the conditions on integration given in (31), then the w-phrases in Eckardt’s examples, repeated here as (34), all pass them: the verb and the w-phrase are daughters, cf. (31-a); the w-phrases are arguments of the verb, cf. (31-b-i), they are not assigned properties unlimited in time (31-c-i) and their theta-roles are prototypical (31-c-ii).¹⁴

¹²For me, [b] sentence is OK if interpreted holistically, cf. footnote 13.

¹³Frey & Pittner argue that quantized NPs can be integrated if they are interpreted holistically. To force a holistic interpretation, they use the quantifier *alle* ‘all’ instead of *jeder* ‘every’. For a DO containing the quantifier *alle* ‘all’, the word order MA DO is acceptable, cf.(i).

- (i) weil Hans **sorgfältig** alle Hemden bügelte.
 because Hans carefully all shirts ironed
 ‘because Hans ironed all shirts carefully.’
 = (38) in Frey & Pittner (1998)

Frontings of the verb without the DO, however, are not possible, cf. (ii-a) , where this is contrasted with the behaviour of *jeder* ‘every’, cf. (ii-b).

- (ii) a. *Gebügelt hat Hans **sorgfältig** alle Hemden.
 Ironed has Hans carefully all shirts
 b. Gebügelt hat Hans jedes Hemd **sorgfältig**.
 Ironed has Hans every shirt carefully
 ‘Hans carefully ironed every shirt.’
 = (39) Frey & Pittner (1998)

¹⁴As an approximation of what a prototypical theta-role is, cf. the list taken from Dowty (1991):

- (i) Contributing properties for the Patient Proto-Role:
 a. undergoes a change of state

- (34) a. Alicia hat dann **gierig** was gegessen.
Alicia has then greedily something eaten
'Alicia then greedily ate something.'
- b. Peter hat dann **vorsichtig** wen gefragt.
Peter has then carefully someone asked
'Peter then carefully asked someone.'
- c. Claudia hat **demonstrativ** was gelesen.
Claudia has ostentatiously something read
'Claudia ostentatiously read something.'
- d. Eberhard zog **schüchtern** was aus.
Eberhard took shyly something off
'Eberhard shyly took something off.'
- = (91) in Eckardt (2003)

Thus, Frey & Pittner can simply argue that in all of Eckardt's examples, the DO is integrated and therefore they do not constitute counterexamples to their own data. However, this cannot possibly be the whole story. Consider again Frey's example (6) vs Eckardt's (34-c), both repeated in (35).

- (35) a. Peter will jetzt was **konzentriert** lesen.
Peter will now something carefully read
- b. Claudia hat **demonstrativ** was gelesen
Claudia has ostentatiously s.thing read

There are no reasons for the assumption that in (35-a) *was* 'something' is not integrated but in (35-b) it is integrated. Frey, however, would need to assume this in order to account for the data.

The integration account can be saved, at least for the two sentences discussed here, by claiming that only one of the adverbials receives a manner reading. Thus, it is in fact not clear if *demonstrativ* 'ostentatiously' is a manner modifier. To make this point clearer, consider (36).

- (36) Während alle mit glänzenden Augen auf ihren Freund starrten, hat
While everybody with bright eyes on her friend stare, has
Claudia **demonstrativ** was gelesen.
Claudia ostentatiously something read
'While everybody glared with bright eyes at her boyfriend, Claudia read ostentatiously.'

-
- b. incremental theme
c. causally affected by another participant
d. stationary relative to movement of another participant
e. (does not exist independently of the event, or not at all)
- = (28) in Dowty (1991)

Clearly, in this example, *demonstrativ* ‘ostentatiously’ does not modify the manner in which Claudia reads, but characterizes the fact (or event) that she reads as *demonstrativ*. Consequently, (37-a) but not (37-b) can be uttered in commenting on the situation described in (36).

- (37) a. Daß Claudia etwas gelesen hat, das war *demonstrativ*.
 ‘That Claudia read was ostentatious.’
 b. Wie Claudia etwas gelesen hat, das war *demonstrativ*.
 ‘How Claudia read, that was ostentatious.’

The upshot of this is that *demonstrativ* does not have a manner reading. It can be *demonstrativ* to read something, but the manner is not *demonstrativ*. This lines up nicely with the fact that *demonstrativ* can have scope over negation, cf. (38).

- (38) Claudia ist **demonstrativ** nicht zur Schule gegangen.
 Claudia is ostentatiously not to school gone
 ‘Ostentatiously, Claudia did not go to school.’

Even though this analysis of the reading of *demonstrativ* in (6) is possible, Frey’s argumentation is not entirely convincing. The reason for this lies in the very informal character of integration. Since there are no absolute rules to tell one when an object is or is not integrated, Frey can simply claim that whenever the adverbial is positioned before the object, it is integrated.

5.4.1.2 Resultatives and integration

Eckardt argues that the integration hypothesis will run into problems when extended to resultatives and verbs of creation. She demonstrates this with the help of the sentence (39).

- (39) Berenike hat den Baum dekoriert.
 Berenike has the tree decorated
 ‘Berenike decorated the tree.’

If a resultative is added, the word order MA DO is ungrammatical, cf. (40-a), while DO MA is OK, cf. (40-b).

- (40) a. *Berenike hat **üppig** den Baum dekoriert.
 Berenike has lavishly the tree decorated
 b. Berenike hat den Baum **üppig** dekoriert.
 Berenike has the tree lavishly decorated
 = (97) in Eckardt (2003)

If, however, a manner adverbial is added, the order MA DO is perfectly acceptable, cf. (41) (The order DO MA is also OK, incidentally).

- (41) Berenike hat **vorsichtig** den Baum dekoriert.
 Berenike has carefully the tree decorated
 = (98) in Eckardt (2003)

The unacceptability of (40-a) indicates that the DO *der Baum* ‘the tree’ cannot integrate with the verb, (41) seems to show the exact opposite.

Eckardt speculates that in order to defend integration in these cases, one might claim that the resultatives change the overall thematic structure of the verb, which is another licenser of integration. In other words, the resultative adverbial is also integrated, and it stands in a closer relation to the verb than the DO.¹⁵ This seems to correspond to the position defended by Frey (2003, fn. 14), where Frey holds that resultatives are part of the complex predicate in German. Frey assumes here that more than one element can participate in complex predicate formation.¹⁶

I believe that Frey’s assumption that resultatives take part in the process of predicate formation, and therefore are integrated, is a reasonable one. However, for this to work formally, the conditions on integration would have to be changed.

5.4.2 Associative readings

In this section, I investigate the interaction between associative readings and syntactic position.

I use the term *associative readings*¹⁷ for all adverbial usages which allow a paraphrase according to TEST 5.1, cf. (42).¹⁸

TEST 5.1 Sentences with the form
SUBJECT VERB AGENT-ORIENTED MANNER ADVERBIAL
 can be paraphrased by
SUBJECT VERB, wobei ‘in doing so’ SUBJECT is PREDICATIVE,
 where the adjective serving as adverbial is the same adjective as that serving as predicative.
 Cf. [w₁] in Bartsch (1972, p. 150)

- (42) a. Petra kocht **sorgfältig**.
 ‘Petra is cooking carefully.’
 b. Petra kocht, wobei sie sorgfältig ist. (≈ a)
 ‘Petra is cooking; in doing this she is careful.’

¹⁵Eckardt (2003, p. 296) argues that this is impossible because the resultative adverbial and the verb do not form a common focus domain. However, I do not think that this is a convincing argument.

¹⁶Note that this view of integration stands in conflict with Jacobs’s (1993) view, which explicitly states that, above the word level, only arguments can integrate, cf. (31-b-i).

¹⁷For this terminology, cf. the comments in chapter 7.

¹⁸Frey & Pittner (1999) use this test for English to differentiate manner adverbials from event-internal adverbs. For discussion, cf. section 5.4.2 in chapter 5.

Cf. Bartsch (1972, p.151), Bartsch (1976, p. 155)¹⁹

Note that the same effects can be obtained if *dabei* is used instead of *wobei* (cf. Bartsch (1972, p. 173ff.)), cf. (43).²⁰

- (43) Peter wäscht **sorgfältig** das Auto. (≈ a,b)
 Peter cleans the car carefully
- a. Peter wäscht das Auto. Dabei ist er sorgfältig.
 ‘Peter cleans the car. In doing so, he is careful.’
 Cf. Bartsch (1972, p. 178)
- b. Peter wäscht das Auto, wobei er sorgfältig ist.
 ‘Peter cleans the car. In doing so, he is careful.’

Typically, the verb in these sentences can be turned into a nominalized *beim*- Infinitive and answer the question *Wobei war er ADJ*, cf. (44).

- (44) Wobei war er sorgfältig?
 ‘In doing what was he careful?’
 Beim Autowaschen.
 ‘Cleaning his car.’

The availability of the word order MA DO seems to be related to the availability of the *wobei*-paraphrase as introduced in TEST 5.1.

Examples (10) and (18) in section 5.3 have shown that *laut* ‘loudly’ can be used in pre-object position in out-of-the-blue contexts, but must be used in post-object position in response to *wie*-constituent questions. In these examples, the situation is further complicated by the use of an indefinite DO in out-of-the-blue contexts and the use of a definite DO in the constituent-question-answer pairs. Below I will concentrate on examples with definite DOs (for the behaviour of indefinite DOs, cf. section 5.4.4).

Interestingly, sentences containing the manner adverbial *laut* ‘loudly’ and a direct object that only differ in the relative order of MA and DO, are preferably matched to different paraphrases, cf. (45-a) vs. (45-b).

¹⁹Bartsch’s original example also gives the paraphrase in (i-a) and (i-b).

- (i) Petra kocht **sorgfältig**. (≈ a,b)
 ‘Petra is cooking carefully.’
- a. Petra kocht, wobei sie sich sorgfältig verhält.
 ‘Petra is cooking; in doing so she acts carefully.’
- b. Petra kocht, wobei sie sorgfältig handelt.
 ‘Petra is cooking; in doing so she acts carefully.’
- Cf. Bartsch (1972, p.151), Bartsch (1976, p. 155)

²⁰The usage of *dabei* in connection with copula sentences is discussed in Maienborn (2003a, p. 113ff) and Maienborn (2004, p. 18f). I will say more about this in the discussion of the semantics of associative readings in chapter 7.

- (45) a. Peter singt **laut** das Lied. [MA DO]
Peter sings loudly the song
(i) Peter singt das Lied, wobei er laut ist. (\approx a)
'Peter sings the song. In doing that, he is loud.'
(ii) Wie Peter das Lied singt, das ist laut. ($??\approx$ a)
- b. Peter singt das Lied **laut**. [DO MA]
Peter sings the song loudly
(i) Peter singt das Lied, wobei er laut ist. ($??\approx$ b)
(ii) Wie Peter das Lied singt, das ist laut. (\approx b)
'The way in which Peter sings the song, that is loud.'

For (45-a), the *wobei*-paraphrase is more appropriate, indicating that the sentence is preferably understood with an associative reading. For (45-b), on the other hand, the *wie*-paraphrase (cf. TEST 3.1) is preferred.

The same preferences in paraphrasability are exhibited by *sorgfältig* 'carefully', cf. the pair of sentences in (46).

- (46) a. Peter hat **sorgfältig** das Buch durchgearbeitet.
Peter has carefully the book worked.through
'Peter carefully studied the book.'
(i) Peter hat das Buch durchgearbeitet, wobei er sorgfältig war. (\approx a)
'Peter studied the book. In doing that, he was careful.'
(ii) Wie Peter das Buch durchgearbeitet hat, das war sorgfältig. ($??\approx$ a)
'The way in which Peter worked through the book, that was careful.'
- b. Peter hat das Buch **sorgfältig** durchgearbeitet.
Peter has the book carefully worked.through
'Peter studied the book carefully.'
(i) Peter hat das Buch durchgearbeitet, wobei er sorgfältig war. ($??\approx$ b)
'Peter studied the book. In doing that, he was careful.'
(ii) Wie Peter das Buch durchgearbeitet hat, das war sorgfältig. (\approx b)
'The way in which Peter worked through the book, that was careful.'

Note that the intuitions for the preferred paraphrases for (45) as well as (46) are not shared by all speakers.

We would now expect that those agent-oriented manner adverbials that do not allow the *wobei*-paraphrase, e.g. *intelligent* 'intelligently' or *wunderbar* 'wonderfully' are not acceptable in pre-object position, and this is indeed the case, cf. (47) and (48).

- (47) a. *Petra löst **intelligent** die Aufgabe.
Petra solves intelligently the task
- b. Petra löst die Aufgabe **intelligent**.
Petra solves the task intelligently

- (i) Petra löst die Aufgabe, wobei sie intelligent ist. (\neq b)
 ‘Petra solves the problem, in doing so, she is intelligent’
- (ii) Wie Petra die Aufgabe löst, das ist intelligent. (\approx b)
 ‘How Petra solves the problem, that is intelligent’
- (48) a. *Robert hat **wunderbar** Stella geführt.
 Robert has wonderfully Stella led
- b. Robert hat Stella **wunderbar** geführt.
 Robert has Stella wonderfully led
 ‘Robert led Stella wonderfully.’
- (i) Robert hat Stella geführt, wobei er wunderbar war. (\neq b)
 ‘Robert led Stella, in doing so, he was wonderful.’
- (ii) Wie Robert Stella geführt hat, das war wunderbar. (\approx b)
 ‘How Robert led Stella, that was wonderful’

Note that although the positions lead to differences in preferred paraphrases, they are often semantically or pragmatically closely related. The simultaneous use of direct opposites in the two positions in one single sentence is in general not acceptable, cf. the two examples in (49) (For cases where this is possible, cf. chapter 6).

- (49) a. ??Er hat **laut** das Lied **leise** gesungen.
 He has loudly the song quietly sung
- b. ??Er hat **sorgfältig** das Buch **unachtsam** durchgearbeitet.
 He has carefully the book carelessly worked.through

The difference of adverbial readings which allow the *wobei*-paraphrase and those that do not allow this paraphrase is also influenced by the ability of the adjective used adverbially to be used predicatively. This becomes especially clear when looking at examples like (50), using the adverb *piano*, in contrast to (51), using *leise* ‘lowly’.

- (50) a. *Fritz hat **piano** die Einleitung gesungen.
 Fritz has piano the introduction sang
- b. Fritz hat die Einleitung **piano** gesungen.
 Fritz has the introduction piano sung
 ‘Fritz sang the introduction piano.’
- (51) a. Fritz hat **leise** die Einleitung gesungen.
 Fritz has lowly the introduction sang
 ‘Fritz has sang the introduction lowly.’
- b. Fritz hat die Einleitung **leise** gesungen.
 Fritz has the introduction lowly sung
 ‘Fritz sang the introduction lowly.’

While both (50-b) and (51-b) might be used to describe the very same situation, only *leise* can be positioned before the DO, and only *leise* allows a *wobei*-paraphrase. *Piano*

does not allow such a paraphrase, because it cannot be used to predicate of persons.²¹

5.4.2.1 Eckardt on degree of perfection adverbs

In this connection, it is interesting that Eckardt, in her discussion of degree of perfection adverbs (cf. for the semantic side 3.2.4.2, especially the discussion of (52)), notices that they always must be positioned after the DO and before the verb, and cannot precede the DO, cf. the data in (52)-(54).

- (52) a. Olga spielte die Sonate **perfekt**.
Olga played the sonata perfectly
b. *Olga spielte **perfekt** die Sonate .
Olga played perfectly the sonata
Cf. (1,3) in Eckardt (1998, p. 160)
- (53) a. Paul hat den Handstand **mittelgut** ausgeführt.
Paul has the handstand morderately good performed
'Paul performed the handstand moderately well.'
b. *Paul hat **mittelgut** den Handstand ausgeführt.
Paul has morderately good the handstand performed
'Paul performed the handstand moderately well.'
Cf. (5-6) in Eckardt (1998, p. 160)
- (54) a. Tim baute das Zelt **schlampig** auf.
Tim built the tent sloppily up
'Tim put up the tent sloppily.'
b. *Tim baute **schlampig** das Zelt auf.
Tim built sloppily the tent up
Cf. (7-8) in Eckardt (1998, p. 160)

Eckardt accounts for this pattern by assuming obligatory movement of the direct object. She rejects an explanation that assumes that the adverbials are base positioned between DO and verb on the grounds of the focus data (no wide focus with only one accent possible, for Eckardt's position on this cf. (15)).

²¹Such metaphoric usages seem to be possible in English, cf. (i).

- (i) The Marquis..looked thoroughly worn out and as **piano** as a beaten dog.
1900 E. GLYN Visits of Elizabeth 188 (OED online, second edition)

It is also possible in colloquial German, in phrases such as (ii).

- (ii) Nun mach mal **piano**!
now make PART piano
'Take it easy!'

Eckardt (1998) offers the following speculative explanation for the observed patterns:

We found that the existential statements made with pre-adverbial and verb-adjacent indefinite NPs differ slightly. Can this difference be turned into an explication why adverbs of degree of perfection only allow pre-adverbial objects? At this point, I have only a speculation to offer.

It has been argued that adverbs of degree of perfection are verified (in real use of language) by looking at the thing referred to with the object NP: We have to look at the kite in order to find out that it has been built correctly, or painted correctly. Thus, we might suggest that adverbs of degree of perfection express a relation between event and object. The object has therefore to be accessible for semantic composition, which it is if it's higher than the adverb but not if it's lower than the adverb. Therefore it has to be moved to the left of the adverb of degree of perfection.” (p. 163)

I have already argued at length that there are no reasons to assume that Eckardt's degree of perfection adverbs form a special class, cf. section 3.2.4.2. The phenomenon Eckardt observes can alternatively be explained with the unavailability of associative readings, cf. the patterns in (55) through (57).

- (55) a. Olga spielte die Sonate **perfekt**.
 Olga played the sonata perfectly
 b. Olga spielte die Sonate, wobei sie perfekt war. (~~≠~~ a)
 ‘Olga played the sonata, in doing so, she was perfect.’
- (56) a. Paul hat den Handstand **mittelgut** ausgeführt.
 Paul has the handstand moderately good performed.
 ‘Paul performed the handstand moderately well.’
 b. Paul führte den Handstand aus, wobei er mittelgut war. (~~≠~~ a)
 ‘Paul performed a Handstand, in doing so, he was moderately good.’
- (57) a. Tim baute das Zelt **schlampig** auf.
 Tim built the tent sloppily up
 ‘Tim put up the tent sloppily.’
 b. Tim baute das Zelt auf, wobei er schlampig war. (~~≠~~ a)
 ‘Tim put up the tent, in doing so, he was sloppy.’

Since none of these adjectives allow an associative reading, they cannot be positioned before the direct object. This data thus lends further support to the pattern seen in the previous section.

5.4.2.2 The temporal readings of *schnell* and *langsam*

In sections 3.3.2 and 4.3.3, I discussed non-manner readings of *langsam* ‘slowly’ and *schnell* ‘quickly’. Both adjectives are positioned before the DO when they receive a non-manner reading. In this respect, they resemble the adjectives allowing associative readings. Therefore, in this section I will discuss whether or not the event-external readings of *langsam* ‘slowly’ and *schnell* ‘quickly’ are in fact also associative readings.

Making use of the *wobei*-paraphrase for sentences containing *schnell* ‘quickly’, it turns out that the holistic interpretation of *schnell* can be paraphrased in this way, cf. (58), while this is not possible for the inchoative reading of *schnell*, cf. (59).

- (58) a. Jochen schmückte **schnell** den Weihnachtsbaum.
 Jochen decorated quickly the Christmas.tree
 b. The duration of Jochen’s decorating_the_Christmas_tree was short. (= holistic reading)
 c. Jochen hat den Weihnachtsbaum geschmückt, wobei er schnell war. (≈ a on the reading characterized in b)
 ‘Jochen decorated the Christmas tree, in doing so, he was quick.’

Sentence (58) was already discussed in the sections mentioned above, and on the holistic reading, where the sentence implies (58-b), the *wobei*-paraphrase is appropriate, cf. (58-c).

- (59) a. Jochen schmückte **schnell** den Weihnachtsbaum.
 Jochen decorated quickly the Christmas.tree
 b. The distance in time between some contextual reference point and the begin of the decoration event was short. (= inchoative reading)
 c. Jochen hat den Weihnachtsbaum geschmückt, wobei er schnell war. (≠ a on reading b)
 ‘Jochen decorated the Christmas tree, in doing so, he was quick.’

This is not the case for the inchoative reading of the same sentence, cf. (59-a), which implies (59-b) but cannot itself be paraphrased with the help of the *wobei*-paraphrase, cf. (59-c).

For the temporal interpretation of *langsam* ‘slowly’ the *wobei*-paraphrase is also not appropriate. The reason for this is that this reading of *langsam* is not available in declarative sentences, but only in imperatives (all previous example sentence with *langsam* on its temporal reading were also imperatives, cf. the examples (71) and (72) in chapter 4 as well as example (107) in chapter 3). The *wobei*-paraphrase, on the other hand, can only be used for declarative sentences. That *langsam* on its temporal reading is not available in declarative sentences is shown in (60) and (61).

- (60) a. Peter kocht das Essen.
 Peter cooks the food

- b. *Peter kocht **langsam** das Essen.
Peter cooks slowly the food
- c. Peter kocht das Essen **langsam**.
Peter cooks the food slowly
'Peter cooks the food slowly'

If *langsam* is added to the declarative sentence (60-a), the sentence becomes ungrammatical when the adverbial appears in the position for an event-external adverbial, cf. (60-b), while the same material with *langsam* serving as manner adverbial is fine, cf. (60-c).

Even if a single sentence allows both interpretations of the adverbial *langsam* 'slowly' and contains a modal auxiliary, the sentence can only be used as a declarative when the adverbial is used with a manner reading, cf. (61).

- (61) Peter kann **langsam** Essen kochen.
Peter can slowly food cook
 - a. 'Peter is able to cook food slowly.'
 - b. 'It's about time for Peter to start cooking.'

(61) can have (at least) two readings, given in (61-a) and (61-b). In reading (61-a), the sentence serves as a declarative and the adverbial must be interpreted as a manner adverbial. When the sentence serves as an imperative, cf. (62-b), the adverbial can have a temporal reading.

The incompatibility of the *wobei*-paraphrase and imperatives is demonstrated by the examples in (62) and (63).

- (62) a. Mach **langsam** die Tür zu!
Make slowly the door shut
'It's about time you close the door!'
- b. Mach die Tür zu, wobei du langsam seist. (≠ a)
'Close the door. In doing so, you be slow.'
- (63) a. Du kannst **langsam** die Tür zu machen!
You can slowly the door shut make
'You can shut the door now.'
- b. Du kannst die Tür zu machen, wobei du langsam seist. (≠ a)
You can shut the door now. In doing so, be slow.

To conclude this section, it appears that of the two readings which *schnell* can receive in its event-external usage, only the holistic reading allows the *wobei*-paraphrase and can therefore be considered an associative reading. The event-external reading of *langsam* 'slowly', does not allow this paraphrase and therefore is not an associative reading.

5.4.2.3 Different readings: evidence from English

Shaer (2003) notes subtle meaning differences between word orders of English sentences which at first sight seem to parallel the phenomenon of associative readings, cf. (64) and (65) (where # marks pragmatically infelicitous continuations).

- (64) a. The prisoner proclaimed his innocence **loudly**.
 (i) He woke up all the other prisoners.
 (ii) #He really believed that he had been framed.
 b. The prisoner **loudly** proclaimed his innocence.
 (i) #He woke up all the other prisoners.
 (ii) He really believed that he had been framed.
 = (42) in Shaer (2003)
- (65) a. The defence secretary rehearsed the reasons **woodenly**.
 (i) #He seemed to have no soul.
 (ii) His manner seemed so stiff.
 b. The defence secretary **woodenly** rehearsed the reasons why going to war was the only solution.
 (i) He seemed to have no soul.
 (ii) #His manner seemed so stiff.
 = (43) in Shaer (2003)

According to Shaer, the readings of *loudly* and *woodenly* in the position before the verb “continue to involve perceptible qualities of the situations described by the sentences containing them [. . .], but also indicate something about the mental attitudes of the agents in these situations. In this case, this is that the prisoner is vehement, and not just noisy, in his proclamation; and that the defence secretary is not merely stiff in manner, but rather some kind of emotionless automaton in his ability to say what he does.” Shaer (2003, p. 228)²²

Shaer’s description of the readings for the pre-verbal occurrences of these adverbials does not correspond to the availability of the English translation equivalent of the *wobei*-paraphrase for these sentences, cf. (66) (Shaer p.c.).

- (66) a. The prisoner **loudly** proclaimed his innocence.
 b. The prisoner proclaimed his innocence. In doing that, he was loud. (≠ a)
- (67) a. The defence secretary **woodenly** rehearsed the reasons

²²Note that the relative order of the sentences in example (65) cannot be reduced to the relative weight of the *the reasons why . . .*-phrase and the tendency to place such constituents at the end of the sentence. As Shaer (p.c.) points out, the same effect can be obtained with DO of the same weight in both orderings, cf. (i).

- (i) a. The defence secretary **woodenly** repeated his excuse.
 b. The defence secretary repeated his excuse **woodenly**.

- b. The defence secretary rehearsed the reasons In doing that, he was wooden. (\neq a)

According to Shaer, in both cases the paraphrases fail to capture the metaphorical extensions triggered by the adverbials on these usages, e.g. that *loudly* in (66-a) attributes not only loudness but also vehemence to the agent, and that *woodenly* in (67-a) forces a view of the secretary as a kind of automaton. It is not possible to mirror the differences observed by Shaer for the positioning of *loudly* in English with the help of the pre- vs post-direct object variation in German, cf. e.g. (68) for *laut* ‘loudly’.

- (68) Nachdem die Journalisten ihm mehr und mehr zusetzten,
 ‘After the journalists pressed him more and more,’
 a. hat Hans abermals seine Unschuld **laut** beteuert.
 has Hans again his innocence loudly affirmed
 ‘Hans again loudly confirmed his innocence.’
 b. hat Hans abermals **laut** seine Unschuld beteuert.
 has Hans again loudly his innocence affirmed
 ‘Hans again loudly confirmed his innocence.’

For me, both continuation, (68-a) and (68-b), further specify the loudness, and not the vehemence. Rather, the readings Shaer has in mind for the pre-verbal English variants must be expressed in German with the help of different adverbials, e.g. *lautstark* ‘vociferous’ or *lauthals* ‘at the top of one’s voice’.

- (69) Hans hat **lautstark** auf seine Rechte bestanden.
 Hans has vociferously on his rights insisted
 ‘Hans vociferously insisted on his rights’
- (70) Die Fans haben **lauthals** ihren Verein angefeuert.
 The fans have at.the.top.of.their.voice their club urged.on
 ‘The fans urged their club on at the top of their voice’

Both *lautstark* as well as *lauthals* indicate that the agent is very much emotionally involved in whatever he does do loudly, which seems similar to Shaer’s description of the English pre-verbal data cited above. The linear position of these adverbials does not make any difference.

Another very subtle difference is discussed in Radford (1997, p. 370ff), cf. (71).

- (71) a. We **gently** rolled the ball down the hill
 b. We rolled the ball **gently** down the hill
 = (15) in Radford (1997, p. 371)

According to Radford (1997, p. 372), (71-a) “means that the action which initiated

the rolling motion was gentle, whereas (15b) [(71-b)] means that the rolling motion itself was gentle.” Apparently, *gently* in the preverbal position displays the same agent-dependency as an adverbial like *deliberately* must always display. This could be the semantic explanation for the contrast in (72).

- (72) a. He had **deliberately** rolled the ball gently down the hill
 b. *He had **gently** rolled the ball deliberately down the hill.
 = (18) in Radford (1997, p. 372)

Interestingly, this data is again very similar to the absence or presence of associative readings in German. To complete this confusing picture, (73) shows a data set where *quietly* is possible preverbally but *loudly* is not possible.

- (73) a. Kim **quietly** had gone home to think it over.
 b. *Kim **loudly** had gone home to think it over.
 = (2.159a, 2.160a) in (Ernst 2001, 88)

Note that (73-b) differs from the Shaer examples since *loudly* is placed not only preverbally but also pre-auxiliary.

Frey & Pittner (1999) and Frey (2003) argue that there are in fact English data that correspond to the absence or presence of Bartsch’s *wobei*-paraphrase, cf. the data in (74) and (75).

- (74) a. John handled the situation **terribly**.
 b. *John **terribly** handled the situation.
 c. He played the sonata **beautifully**.
 d. *He **beautifully** played the sonata.
 e. He has danced with Mary **marvellously**.
 f. *He has **marvellously** danced with Mary.
 = (78) in Frey (2003)

According to Frey (2003), the patterns in (74) are due to the fact that all these sentence do not allow the *wobei*-paraphrase, which he exemplifies for *beautifully* with the help of (75).

- (75) a. He will play the sonata **beautifully**.
 b. He will play the sonata and in doing that he will be beautiful. (\neq a)
 = (80c-d) in Frey (2003)

Interestingly, the availability of such a paraphrase seems for Frey to be a precondition for a preverbal placement, but the same interpretation is also available if the adverb is positioned postverbally, cf. (76).

- (76) a. He will work on the project **carefully**.
 b. He will work on the project and in doing that he will be careful. (\approx a)
 = (80a-b) in Frey (2003)

All in all, the English data yields patterns that are not clear to me.

5.4.3 Causal relevance

Peterson (1997) notes that event nominals modified by adverbials are ambiguous, cf. (77) and the two paraphrases in (78).

- (77) The Titanic('s) sinking **rapidly** caused great loss of life. [ambiguous]
= (25) in Peterson (1997, p. 233)
- (78) a. The Titanic's sinking being rapid caused great loss of life. [restrictive reading]
b. The Titanic's sinking, which was rapid, caused great loss of life. [non-restrictive reading]
= (21) in Peterson (1997, p. 231)

In what Peterson calls the restrictive reading it is the rapidity of the sinking which is responsible for the great loss of life. In other words, had the sinking taken a longer time, the loss of life would not have been great. In the non-restrictive reading it is the sinking as such which causes the loss of life; whether it was rapid or not plays no role as far as the loss of lives is concerned.

Not only adverbials modifying event nominals have restrictive or a non-restrictive readings, but also, for example, do regular manner adverbials. In addition, for manner adverbials in English, whether they have or do not have a restrictive reading has consequences for their positioning. This has been elegantly demonstrated by Shaer (2003) with examples based on Wickboldt (2000).²³

Wickboldt (2000) observed that manner adverbials in the sentence-final position of *since*-clauses are connected with a causal reading of *since*, and consequently appear odd if such a reading is pragmatically not plausible. This explains the difference between (79-b) and (79-c).

- (79) a. Since John entered the room, he's been looking for a seat. [=temporal]
b. #Since John entered the room **quietly**, he's been looking for a seat.
c. Since John entered the room **quietly**, no one noticed him. [=causal]
= (1-3) in Wickboldt (2000)

Shaer (2003) has shown that a manner adverbial can appear in *since*-clauses with temporal readings, as long as it is placed in pre-verbal position, cf. (80).

- (80) Since John **quietly** entered the room, he's been looking for a seat. [=temporal]
= (48a) in Shaer (2003)

In German, the linearizations DO MA vs MA DO can be vary in order to express a

²³Peterson (1997, 336ff) also notes that these two possible readings carry over to regular adverbial modification; however, he does not connect this with different syntactic positions.

restricted or a non-restricted reading of manner adverbials, especially in causal contexts. Thus, if the semantic contribution of the manner adverbial plays a decisive role in bringing about a consecutive event, it is usually placed directly before the verb, cf. (81).

- (81) a. ??Weil Peter während der Aufführung **leise** den Saal verlassen
 Because Peter during the performance quietly the hall left
 hatte, hat ihn niemand gehört.
 had, has him no one heard
- b. Weil Peter während der Aufführung den Saal **leise** verlassen
 Because Peter during the performance the hall quietly left
 hatte, hat ihn niemand gehört.
 had, has him no one heard
 ‘Because Peter left the hall during the performance quietly, no one heard him.’

Here, only the linear ordering in (81-b) seems appropriate, as it is plausible that it is specifically the quietness of the leaving which results in no one hearing Peter. In contexts where the semantic contribution of the manner adverbial constitutes simply some additional information but does not play a decisive role as far as the course of events brought into a causal connection is concerned, the manner adverbial is preferably placed in front of the object, cf. (82).

- (82) a. Weil Peter während der Aufführung **leise** den Saal verlassen
 Because Peter during the performance quietly the hall left
 hatte, war er beim Empfang nicht mehr da.
 had, was he at.the reception not anymore there
 ‘Because Peter quietly left the hall during the performance, he was not present at the reception.’
- b. ??Weil Peter während der Aufführung den Saal **leise** verlassen
 Because Peter during the performance the hall quietly left
 hatte, war er beim Empfang nicht mehr da.
 has, was he at.the reception not anymore there

In (82), it is, in contrast to the example (81), not very plausible that the quietness of the leaving has anything to do with Peter’s presence or absence at the reception, therefore, the ordering in (82-a) is preferred.

This link between the position of the DO and its significance in the causal connection between two events is also observable in contexts where this significance is not pragmatically plausible, forcing the hearer to construct a pragmatically plausible explanation, compare the differences between (83-a) and (83-b).

- (83) a. Die Leute waren auf ihren Posten, weil die Wachen **laut** das
 The people were on their posts, because the guards loudly the

Warnsignal geblasen hatten.

alarm.signal blown had

‘The people were ready, because the guards had loudly given the alarm signal.’

- b. Die Leute waren auf ihren Posten, weil die Wachen das
The people were on their posts, because the guards the
Warnsignal **laut** geblasen hatten.

alarm.signal loudly blown had

‘The people were on their posts, because the guards had given the alarm signal loudly.’

In (83-a), the people were on their guard, because the alarm was given. That this alarm-giving event was loud is just additional information but has nothing to do with the result. On the other hand, (83-b) states that the people were on their posts, not because the alarm signal was given, but because the alarm signal was given loudly. This makes sense in a context where different manners of giving the alarm signal are agreed upon to signify different things (e.g., to give the alarm signal quietly triggers nothing as it is assumed to be a test).

Causal relevance and temporal readings In section 3.3.2, I argued that the temporal readings of *schnell* ‘quickly’ and *langsam* ‘slowly’ are preferably available when they are in pre-object position. The preference for the different readings overrides the causal effects. This can be seen in (84).

- (84) a. Die Leute waren rechtzeitig auf ihren Posten, weil die Wachen
The people were on.time at their posts, because the guardians
schnell das Warnsignal geblasen hatten.
quickly the alarm blown had
‘The people were at their post in time, because the guards had quickly given the alarm signal.’
- b. Die Leute waren rechtzeitig auf ihren Posten, weil die Wachen das
The people were on.time at their posts, because the guards the
Warnsignal **schnell** geblasen hatten.
alarm quickly blown had

(84-a) yields an inchoative reading, a suitable scenario is one where guards sight enemies and waste no time to give the alarm signal, so that the people are ready for the on-running enemy. *Quickly* is decisive for the consequent event, but must still be placed in pre-object position. (84-b), on the other hand, yields the manner reading, although this reading is pragmatically odd. The sentence must be interpreted as saying that the people react to the alarm differently, depending on how quickly the guards blow on the trumpet used as an alarm.

This behaviour of the readings of *schnell* even allows for minimal pairs like in (85).

- (85) a. Weil die Wachen das Fallgitter **schnell** herunterließen, sind die
 Because the guards the portcullis quickly let.down, are the
 Spitzen abgesplittert.
 pikes chipped.off
 Because the guards let the portcullis down quickly, the pikes were chip-
 ped off.
- b. Weil die Wachen **schnell** das Fallgitter herunterließen, kam der
 Because the guards quickly the portcullis let.down, came the
 Feind nicht in die Burg.
 enemy not into the castle
 ‘Because the guards quickly let down the portcullis, the enemy could not
 get into the castle.’

In both cases the contribution of *schnell* ‘quickly’ plays a decisive role with regard to the consequent event, in (85-a) with its manner reading and in (85-b) with its inchoative reading.

5.4.4 Indefinites and topical DOs

Eckardt (2003) argues that data involving verbs of creation in interaction with indefinite NPs offers support for the assumption that MA DO is the base linear order.²⁴ In essence her proposal runs along the following lines:

1. the unmarked reading of an indefinite DO is an existential reading
2. indefinite DOs do not allow an existential reading if positioned before the manner adverbial. In particular,
 - (a) if $DO_{indefinite} < \text{adverbial}$ and the verb is a verb of creation, then only a partitive or a generic interpretation is possible
 - (b) in all other cases, if $DO_{indefinite} < \text{adverbial}$, then in addition an in-group reading is available, but not an existential reading
3. all the readings of indefinite NPs except the existential reading are topical
4. an indefinite DO in pre-object position is always interpreted topically (follows from 2 and 3)
5. topical NPs result from movement
6. therefore, the position before the adverb is not the base position of DOs

I will not discuss Eckardt’s notion of topicality here, which she links to that of Jäger (1996). For the purpose of the discussion here it suffices to say that she assumes the in-group, partitive and generic readings of indefinites to be topical.

Crucial for Eckardt’s argumentation are the following pieces of data, where # indicates that an existential reading is not available.

²⁴Eckardt is however careful to point out that she does not regard her arguments as conclusively answering this question.

- (86) a. daß Daphne **wütend** eine Hose entwarf.
 that Daphne angrily a.pair.of trousers designed
 ‘that Daphne angrily designed a pair of trousers.’
 b. #daß Daphne eine Hose **wütend** entwarf.
 that Daphne a.pair.of trousers angrily designed
 ‘that Daphne designed a pair of trousers angrily.’
 Cf. (47a,c) in Eckardt (2003)
- (87) a. daß Euridike **vorsichtig** ein gleichschenkliges Dreieck konstruierte.
 that Euridike carefully an isosceles triangle constructed
 ‘that Euridike carefully constructed an isosceles triangle.’
 b. #daß Euridike ein gleichschenkliges Dreieck **vorsichtig** konstruierte.
 that Euridike an isosceles triangle carefully constructed
 ‘that Euridike constructed an isosceles triangle carefully.’
 Cf. (48a,c) in Eckardt (2003)
- (88) a. daß Daphne **vorsichtig** eine Hose flickte.
 that Daphne carefully a pair.of.trousers mended
 ‘that Daphne carefully mended a pair of trousers.’
 b. daß Daphne eine Hose **vorsichtig** flickte.
 that Daphne a pair.of.trousers carefully mended
 ‘that Daphne mended a pair of trousers carefully.’
 = (50) in Eckardt (2003)
- (89) a. daß Daphne **wütend** eine Hose zerriß.
 that Daphne angrily a pair.of.trousers tore
 ‘that Daphne angrily tore apart a pair of trousers.’
 b. daß Daphne eine Hose **wütend** zerriß.
 that Daphne a pair.of.trousers angrily tore
 ‘that Daphne tore apart a pair of trousers angrily.’
 = (51) in Eckardt (2003)

In sentences containing verbs of creation, e.g. (86) and (87), no existential reading is available for the DO when it is positioned before the manner adverbial. In sentences containing no such verbs, e.g. (88) and (89), an existential reading is available regardless of whether the DO is placed before or after the manner adverbial.

On a more thorough analysis, Eckardt refines her claim in saying that for all the (b)-sentences above, that is, including (88) and (89), an existential reading is unavailable. The crucial difference is that (88) and (89) allow an *in-group*-reading.²⁵

²⁵The different readings available for DO in pre-adverbial position are associated with different intonation patterns, cf. (i).

What are in-group readings? Basically, this term is used by Eckardt to indicate that the referent of a noun phrase is taken from a known set of people. According to Eckardt, the contextual restrictions for these readings are minimal: “They require the hearer to accommodate an interest in the question *What did Alicia do in the situation that the speaker wants to describe?* This minimal interest will be supplied at least by politeness and hence has never been diagnosed as a “presupposition” of the respective sentences” (p. 284). Eckardt gives an example where the minimal requirements for an in-group reading are met, cf. (90).²⁶

- (90) Alicia ging in den Stall und hat alle Tiere begrüßt.
‘Alicia went to the stable and greeted all animals.’

Sie hat ein HUHN VORSICHTIG GESTREICHELT, (... sie hat eine
She has a chicken carefully stroked (... she has a
KUH ZÄRTLICH GESTUPST, und sie hat ein PFERD LIEBEVOLL
cow tenderly pushed and she has a horse lovingly
GEFÜTTERT.)
fed)
= (71) in Eckardt (2003)

Even if we construct a similar context for verbs of creation, these readings are not available and such a sentence is usually judged as bad, cf. (91).

- (91) Alicia ging an ihren Schreibtisch und hat alle Aufgaben gelöst.

- (i) Alicia hat ein Huhn vorsichtig gestreichelt.
A. has a chicken carefully stroked.
a. Generic: Alicia hat ein Huhn VORSICHTIG GESTREICHELT
/VORSICHTIG gestreichelt/vorsichtig GESTREICHELT.
b. Partitive: Alicia hat EIN Huhn VORSICHTIG gestreichelt.
c. In-Group: Alicia hat ein HUHN VORSICHTIG GESTREICHELT.
cf. (70) in (Eckardt 2003)

²⁶Lernerz makes use of a similar notion of in-group reading when he discusses an example with an acceptable indefinite IDO, for which according to Lernerz (1977) ‘there seems to exist’ a constraint which only allows a reading ‘of several possible gifts: the book’, cf. his (i).

- (i) Hier sind mehrere mögliche Geschenke zur Auswahl; was würdest du einem Schüler schenken?
‘Here are several possible gifts to choose from; what would you give to a student?’
a. Ich würde einem Schüler das Buch schenken.
I would a student the book give
‘I would give the book to a student.’
b. Ich würde einem Schüler ein Buch schenken.
I would a student a book give
‘I would give a book to a student.’
= (18) in Lernerz (1977, p. 53)

‘Alicia went to her desk and solved all assignments.’

??Sie hat eine TASCHENLAMPE VORSICHTIG KONSTRUIERT,
 She has a torch carefully constructed,
 (... sie hat eine BRÜCKE GESCHICKT ENTWORFEN, und sie hat
 (... she has a bridge skillfully designed, and she has
 ein GLEICHSCHENKLIGES DREIECK SORGFÄLTIG
 a isosceles triangle carefully
 GEZEICHNET.)
 drawn.)

As far as Eckardt’s (2003) line of argumentation is concerned, it does not matter much whether verbs of creation behave different or not, as her main point holds even more generally, considering her differentiation between existential and in-group readings: If an indefinite object appears before the manner adverbial, then it must be topical, which is shown in the restrictions on its readings: it cannot be interpreted existentially.

Frey vs Eckardt Eckardt’s argumentation relies on the assumption that the existential reading of indefinite DOs is their unmarked reading, and that, consequently, the absence of this reading serves as an indicator of the topical status of these readings. This assumption is questioned by Frey (2001, 2003). In particular, Frey (2001) argues for (92).

- (92) The strong reading of an indefinite is not a sufficient condition for its status as a topic.
 = (37) in Frey (2001)

Frey (2001, p. 151) offers an alternative explanation for the effect found for verbs of creation. According to him, the very fact that the DO that comes along with verbs of creation is “just part of the intentions or plans which are denoted by the verb” shows that the DO is integrated. The syntactic consequence is that the indefinite must belong to the complex predicate. If this is the case, then the placement of the manner adverbial before the DO is to be expected.

Of course, the approaches by Eckardt and Frey to this topic cannot be compared without a careful comparison of their definition of topicality on the one hand, and with an in depth study of what constitutes the marked respective unmarked reading of an indefinite, on the other hand. As a detailed comparison is beyond the scope of this account, I do not provide one here.

5.4.5 Quantified direct objects

If the objects in a sentence contain quantification, this can also lead to several readings which are in turn related to syntactic positions. A classic example for this is (93).²⁷

- (93) a. Sam **carefully** sliced all the bagels.
 b. Sam sliced all the bagels **carefully**.

Syntactically, the two sentences differ in that *carefully* in (93-a) has scope over the quantified DO *all bagels*, whereas in (93-b) it is the other way around. In addition, as Lakoff (1972, section IX-A fn. 2) points out, (93-a) is compatible with (94). In contrast, (93-b) is not compatible with (94).

- (94) Sam sliced some of the bagels **carelessly**.

The easiest analysis of this contrast is to assume that *carefully* in (93-a) is used as a subject-oriented adverbial (in the literature alternatively referred to as ‘sentential reading’, ‘sentence adverb(ial)’ or ‘clausal reading’) and only in (93-b) with a manner reading, cf. (95) with the repeated examples and the paraphrases.²⁸

- (95) a. Sam **carefully** sliced all the bagels. [subject-oriented reading]
 ≈ It was careful of Sam that he sliced all the bagels.
 b. Sam sliced all the bagels **carefully**. [manner reading]
 ≈ The way in which Sam sliced all the bagels, that was careful.

In order to verify this analysis, it is insightful to look at the German translation equivalents of (93) (cf. Bartsch (1972, p. 168ff); I use her sentences for discussion). As has been mentioned several times, German allows the formation of sentential adverbials with the help of the suffix *-weise*. However, *sorgfältigerweise* necessarily has syntactic scope over a quantified DO. With respect to the scope in relation to the DO, German thus offers three variants: *sorgfältig* before or after the DO, cf. (96-a) and (96-b), and *sorgfältigerweise* with scope over the DO, cf. (97-a).²⁹

²⁷This example appears first as (7) in Lakoff (1972) and is also discussed in Thomason & Stalnaker (1973, p. 204 and fn.13), Bartsch (1972, p. 168ff), and McConnell-Ginet (1982, p. 152ff). Lakoff argues that *carefully* in (93) must be formalized as a sentence operator for both (93-a) and (93-b). Otherwise, according to Lakoff, the scope effects cannot be captured. Thomason & Stalnaker (1973, p. 204) argue that the scope effects do not show that *carefully* is a sentence adverbial. The interpretational difference can also be captured by treating *carefully* as a predicate operator on both instances. I will come back to Bartsch’s and McConnell-Ginet’s comments below.

²⁸This seems to be the interpretational difference that is also made by McConnell-Ginet (1982, p. 153), who writes that (93) “entails something like Sam’s having taken care not to miss any of the bagels in his slicing operation (possibly doing a quite sloppy job on each individual bagel), whereas 23b [(93-b)] says nothing about how it came about that he ended up doing them all, but instead asserts that he took care with respect to the individual slicing events.”

²⁹Note that *sorgfältigerweise* is very rare in written German (0 hits on 20.04.2004 in cosmas II, corpora of written language, 0 hits on 20.04.2004 in <http://www.wortschatz.uni-leipzig.de>). It seems to have a specialized usage in law, though, compare (i).

- (96) a. Sam schnitt **sorgfältig** alle Brötchen.
 Sam sliced carefully all rolls
 b. Sam schnitt alle Brötchen **sorgfältig**.
 Sam sliced all rolls carefully
- (97) a. Sam schnitt **sorgfältigerweise** alle Brötchen.
 Sam sliced carefully all rolls
 b. *Sam schnitt alle Brötchen **sorgfältigerweise**.

The linearizations that start with the preposed adverbial add nothing new as far as scope is concerned. (98-a) seems semantically to correspond to (96-a), and (98-b) corresponds to (97-a).

- (98) a. **Sorgfältig** schnitt Sam alle Brötchen.
 b. **Sorgfältigerweise** schnitt Sam alle Brötchen .

The translation equivalent to the English word order $DO_{quantized}$ MA is the parallel German linearization $DO_{quantized}$ MA, that is (93-b) corresponds to (96-b). The English sentence with the word order MA $DO_{quantized}$ can be translated into German either as (96-a) or as (97-a).

The remaining question is whether there are any differences in meaning between the two German sentences (96-a) and (97-a), repeated in (99).

- (99) a. Sam schnitt **sorgfältig** alle Brötchen.
 b. Sam schnitt **sorgfältigerweise** alle Brötchen.

Bartsch (1972, p. 168) gives the two paraphrases in (100) for (99-a).

- (100) Sam schnitt **sorgfältig** alle Brötchen.
 a. Sam handelte insofern sorgfältig, als er *alle* Brötchen schnitt. [Bartsch's italics]
 b. Sam handelte **sorgfältig**, indem er alle Brötchen schnitt.

If the meaning of (99-a) is captured by these two paraphrases, so writes Bartsch, there is no discernible difference between the meaning of (99-a) and the meaning of (99-b). In turn, this means that the meaning difference between the two linear orders in English, cf. (93-a) and (93), is in fact that in (93-a) the adverbial functions as a subject-oriented adverbial, in (93) as a manner adverbial.

(i) Sie werden in den Saal gebeten. Dann kann es sein, dass das Gericht Sie sorgfältigerweise noch einmal ganz persönlich über Ihre Pflichten als Zeuge belehrt. [20.04.04 in 2428.0ZeugenvorGericht.pdf, page 5, download von <http://www.hmdj.justiz.hessen.de>]

The correct interpretation of *sorgfältigerweise* in this context seems to be something like *In executing the care towards witnesses required by the law, ...*

The situation does not seem to be as simple as this, though. Thus, Eckardt (1998) argues that there is an interpretational difference between (101-a) and (101-b), even if the sentential reading (in her terminology, evaluative reading) is excluded.

- (101) a. Alma picked each worm **carefully** out of the salad.
 b. Alma **carefully** picked each worm out of the salad.
 = (1) in Eckardt (1998, p. 8)³⁰

Eckardt notes the following difference in meaning: “For (101-b) [her 1a] to be true, it is enough that Alma’s care was devoted to each single worm picking. We get the feeling that the care was directed, for example, towards not hurting the worm. In sentence (101-a) [her 1b] Alma’s care focusses on some overall task. While she might be indifferent with respect to the health of the single worm, she is concerned about the state of the salad” (p. 9).

This observation strikes one as a bit bizarre.³¹ Again, I will use the German translation equivalents for discussion, cf. (102).

- (102) a. Klara hat jeden Wurm **sorgfältig** aus dem Salat entfernt.
 Klara has every worm carefully from the salad removed
 ‘Klara removed every worm carefully from the salad.’
 b. Klara hat **sorgfältig** jeden Wurm aus dem Salat entfernt.
 Klara has carefully every worm from the salad removed
 ‘Klara carefully removed every worm from the salad.’

One problem is that *sorgfältig* does not correspond in all respects to *carefully*. That is, there is no reading of (102-a) where one gets the feeling that the care was directed towards not hurting the worm. If such a reading is intended, a different adverbial, namely *vorsichtig* ‘cautiously’, is more likely to be used, cf. (103).

- (103) Klara hat jeden Wurm **vorsichtig** aus dem Salat entfernt.
 Klara has every worm cautiously from the salad removed

Even with *vorsichtig*, Eckardt’s example interpretation remains difficult, perhaps for pragmatic reasons (who cares about the health of the worms when cleaning a salad!).

Although I doubt that there are those exact readings mentioned by Eckardt in either English or German, there still seems to be something to her observation. To see this, consider the different preferences for on the one hand, the *wie*-paraphrase from TEST 3.1, and on the other hand, the *wobei*-paraphrase depending on the linear order, shown in (104).

- (104) a. Klara hat jeden Wurm **sorgfältig** aus dem Salat entfernt.
 Klara has every worm carefully from the salad removed

³⁰Eckardt (1998, p. 116) gives a similar example, except that Alma is now named Clara and a is b.

³¹I asked two native speakers of English, of whom one could at least follow Eckardt’s argumentation; the other dismissed it wholeheartedly.

- ‘Klara carefully removed every worm from the salad’
- (i) Wie Klara jeden Wurm aus dem Salat entfernt hat, das war sorgfältig.
(preferred paraphrase for a)
‘The way in which Klara picked each worm from the salad was careful.’
- (ii) Klara hat jeden Wurm aus dem Salat entfernt, wobei sie sorgfältig war. (dispreferred paraphrase for a)
‘Klara picked every worm from the salad. In doing that, she was careful.’
- b. Klara hat **sorgfältig** jeden Wurm aus dem Salat entfernt.
Klara has carefully every worm from the salad removed.
‘Klara carefully removed every worm from the salad’
- (i) Wie Klara jeden Wurm aus dem Salat entfernt hat, das war sorgfältig.
(doubtful paraphrase for b)
‘The way in which Klara picked each worm from the salad was careful.’
- (ii) Klara hat jeden Wurm aus dem Salat entfernt, wobei sie sorgfältig war. (preferred paraphrase for b)
‘Klara picked every worm from the salad. In doing that, she was careful.’

It thus turns out that we can in fact distinguish two different adverbial readings of *sorgfältig* ‘carefully’, a manner reading, and an associative reading, which are preferably linked to post-DO and pre-DO position, respectively.

The quantificational scope seems to go well together with other cases with more or less established different readings, cf. (105).

- (105) a. Thomas hat jedes Brötchen **schnell** geschmiert.
Thomas has every roll quickly buttered
‘Thomas buttered every roll quickly’
- b. Thomas hat **schnell** jedes Brötchen geschmiert.
Thomas has quickly every roll buttered
‘Thomas quickly buttered every roll’

(105-a) is preferably interpreted with a manner reading, that is, the agent might have had breaks in between the preparation of the individual rolls, while (105-b) is either inchoative, holistic, or both.

Quantificational scope cannot override the word order for adverbials that appear only after the direct object, cf. the patterns for the method-oriented adverbial *alphabetically* in (106).

- (106) a. Thomas hat alle seine CDs **alphabetisch** sortiert.
Thomas has all his CDs alphabetically sorted
‘Thomas keeps his CDs in alphabetical order.’

- b. ??Thomas hat **alphabetisch** alle seine CDs sortiert.
Thomas has alphabetically all his CDs sorted

The usage of quantified direct objects in sentences containing manner adverbials thus appears to be quite consistent: whenever no other reading alternative is available, the surface scope is used for interpretation. For some adjectives, e.g. *sorgfältig*, this leads to an associative reading if they are positioned before a quantified direct object.

5.5 Conclusion

This chapter investigated in detail whether adjectives serving as manner adverbials have their syntactic base position before or after the direct object in German.

I have shown that this problem is a complex one. In section 2, it was shown that the data used in chapter 4 in favour of a base position after the direct object was not conclusive: only the data from the complex-fronting test gives consistent results supporting a base position after the direct object. The scope test cannot be used, as adjectives do not contain quantification and the *in every way* phrase used instead can also paraphrase mental-attitude readings. The test using existentially interpreted w-phrases leads to conflicting results, with some sentences supporting the order MA DO, and others supporting the order DO MA. Finally, the results of the negation test can be accounted for on purely semantic grounds.

Section 3 attempted to settle the question with the help of focus projection and the theme-rheme condition. However, both tests only lead to clear results in a very few cases. In addition, these clear results contradict each other: the focus projection test supports the order MA DO, the theme-rheme condition yields DO MA.

Throughout the discussion of the many test methods, it became apparent that many other independent factors also play a role in the positioning of manner adverbials. In section 4, I attempted to isolate five different factors for this positioning: (a) integration of the direct object (b) availability of associative readings (c) textual cohesion (d) indefinite/topical direct objects, and (e) quantified direct objects. I argued that the concept of integration is not precise enough to use it to restrict the possibilities of adverbial positioning. There is no non-arbitrary manner to decide when a direct object is integrated and when it is not. A better guide to the variation in pre- vs post-object positioning is the availability of associative readings. If these are available and intended, the adjective is usually placed before the direct object. If such a reading is not available or not intended, the adverbial is placed after the direct object.

Textual cohesion can also influence the positioning of the manner adverbials, but does not influence their readings and plays a secondary role in comparison to the other factors. The role of definite vs indefinite direct objects with regard to the base position for manner adverbials is not wholly clear. This is because there is no agreement in the literature concerning whether or not the availability of an existential reading for an indefinite is connected to that indefinite's topicality (in the sense of Eckardt (2003)).

Quantified objects are positioned as the intended scope of the quantifier requires; for *sorgfältig* ‘carefully’, it was shown that in pre-DO position the adjective preferably receives an associative reading, while the manner reading is preferably connected to the post-DO position.

Chapter 6

Scope

6.1 Introduction

In this chapter, I investigate the semantics of sentences containing two instances of non-coordinated adverbial modification. Clearly, if the two adverbials are not coordinated, one of them, referred to as scope-taking adverbial, will have syntactic scope over the other. I will be looking at sentences where the scope-taking adverbial serves as a manner adverbial. In particular, I look at sentences where the syntactic scope influences the interpretation of the scope-taking adverbial. A classic example for this phenomenon is given in (1).

- (1) John **painstakingly** wrote **illegibly**.
Cf. Parsons (1972, p. 131)

It is not clear how a sentence like (1) can be adequately formalized in an event-based account. As shown in section 2.2, in event-based accounts of modification adverbials are represented as predicates of events, cf. the formalization of (2) given in (3).

- (2) Marlowe ran **quickly**.
(3) $\exists e[\text{RUN}(\text{marlowe}, e) \ \& \ \text{QUICK}(e)]$

Consequently, the event-based formal representation of (1), repeated as (4), contains two additional predicates of events, cf. (5).

- (4) John **painstakingly** wrote **illegibly**.
(5) $\exists e[\text{WRITE}(\text{john}, e) \ \& \ \text{PAINSTAKING}(e) \ \& \ \text{ILLEGIBLE}(e)]$

This representation, however, does not adequately capture the meaning of (4). This becomes clearer when contrasting (4) with (6-a) and (6-b).

- (6) a. John wrote **painstakingly** and **illegibly**.

- b. John wrote **painstakingly** and John wrote **illegibly**.
Cf. Parsons (1972, p. 131)

For both sentences (6-a) and (6-b), the formula in (5) seems to provide an adequate formal representation. However, for (4), this is not the case. Parsons (1972) notes that only (4), but not the two sentences in (6), requires that “the illegibility of the writing was at least one of the things John was taking pains to do” (Parsons 1972, p. 131). That is, *painstakingly* does not specify the manner of the writing, but rather specifies the manner of the writing *illegibly*.

I will introduce a representation for scope-taking manner adverbials within the event-based framework that allows for an adequate representation of the influence of their syntactic scope on their interpretation.

The chapter is organized as follows: Section two gives an overview of data that contains two manner adverbials standing in an asymmetric relation to each other. Section three investigates in detail whether a manner adverbial can display scope-sensitivity. Section four shows that similar scopal effects can already be found in the attributive usage of the adjectives showing scope sensitivity. I argue that the lexical entry of the adjective must already contain contextual parameters that allow to model the scope effects. These additional contextual parameters can also be used to model the scope effects exhibited by the adjectives in their adverbial usage.

6.2 Data

The German translation equivalent of (1), given in (7), shows the same semantic scope effect as the English sentence.

- (7) Fritz hat **sorgfältig** **unleserlich** geschrieben.
Fritz has painstakingly illegibly written
'Fritz painstakingly wrote illegibly.'

A similar phenomenon is exhibited by the German sentence in (8).

- (8) Hans hat **geschickt** die Frage **dumm** beantwortet.
Hans has skilfully the question stupidly answered
'Hans skilfully answered the question stupidly.'

This sentence can only be successfully interpreted if the stupidity of the answer was one of the things in which Hans showed his skill. Note that the sentence receives the same interpretation if *geschickt* is positioned after the direct object, as in (9).

- (9) Hans hat die Frage **geschickt dumm** beantwortet.
Hans has the question skilfully stupidly answered
'Hans skilfully answered the question stupidly.'

A context that makes the intended reading of (8) clearer is given in (10).¹

- (10) Auch nach sieben Tagen Einzelhaft hat Hans die Fragen so geschickt dumm beantwortet, daß niemand auf die Idee gekommen wäre, daß er die Antworten aus dem Effeff kannte.

‘Even after seven days of solitary confinement did Hans answer the questions so craftily stupidly, that no one could possibly suspect that he knew the answers by heart.’

As noted by Peterson (1997), the English adverb *carefully* also exhibits semantic scope effects, cf. (11).

- (11) John **carefully** buttered toast **quietly**.
= (47) in Peterson (1997, p. 241)

Peterson argues that (11) has one interpretation that is synonymous with *John was careful in buttering (to butter the) toast quietly*. Such an interpretation is possible, as Peterson argues, if we imagine a situation where “John took care to be *quiet* while performing his task, but *not* that he took care in his buttering—i.e., that he buttered sloppily.” (Peterson 1997, p. 241)

I am not sure what the German translation equivalent of (11), with the reading Peterson has in mind, should be. As noted in section 5.4.5, *carefully* can be translated in its usage as a manner adverbial into German either with *sorgfältig* or with *vorsichtig*. With both adverbials, the preferred linear order with an added *leise* ‘quietly’ would contain a conjunction, cf. (12).

- (12) Franz hat **vorsichtig/sorgfältig** und **leise** Brote geschmiert.
Franz has carefully/cautiously and quietly toasts buttered
‘Franz buttered toasts carefully and quietly.’

The two other variants sound strange, cf. (13).

- (13) a. ?Franz hat Brote **vorsichtig/sorgfältig leise** geschmiert.
Franz has toasts carefully/cautiously quietly buttered
b. ?Franz hat **vorsichtig/sorgfältig** Brote **leise** geschmiert.
Franz has carefully/cautiously toasts quietly buttered

¹The opening example of Clark (1989), given in (i), bears some similarities to (8) and the context given in (10).

- (i) James Bond, freshly captured, cleverly stammered stupidly to his interrogators. Later on, exhausted from the interrogation, he stupidly incisively said clever things to them.

However, this similarity is only superficial, as the contrasts in (i) arise not from different semantic scope of manner adverbials, but from the co-occurrence of subject-oriented adverbials and manner adverbials.

A possible reason that makes the reading intended by Peterson difficult is its pragmatic anomaly: buttering toasts is a quiet activity in the first place and demands no special efforts from the agent to be executed quietly.

Note that these instances of sentences containing two adverbials differ from those discussed in Ernst (2001), cf. (14).

- (14) a. They play **quietly well**, but get rambunctious when we have more lively games.
b. She runs **slowly correctly**, but loses her form when she speeds up.
= (6.91) in Ernst (2001)

In both examples, the first adverbial presents a precondition for the application of the second. Thus, (14-a) expresses the same meaning as (15-a), (14-b) the same as (15-b).

- (15) a. When we have quiet games, they play well, but they get rambunctious when we have more lively games.
b. When she runs slowly she runs correctly, but loses her form when she speeds up.

In contrast, the first set of manner adverbials in the earlier examples do not express such preconditions. In German, adjectives can be used to express such preconditions, but they are then usually fronted, as in (16).²

- (16) **Langsam** läuft sie **richtig**, aber wenn sie schneller wird, beginnt sie
Slowly runs she correctly, but when she faster becomes, starts she
Fehler zu machen.
mistakes to make
'Slowly she runs correctly, but when she speeds up, she starts making mistakes.'

In the following, I will concentrate on a detailed discussion of the German example (8) with *geschickt dumm* 'skilfully stupidly', as well as the start example containing *painstakingly illegibly* and its German equivalent.

6.3 The adverbial usage of the scope-taking adverbials

The first question raised by the sentence (1) and its German equivalent, repeated as (17), and (8), repeated as (18), is as what kind of adverbials the adjectives in these sentences function.

- (17) Fritz hat **sorgfältig unleserlich** geschrieben.
Fritz has painstakingly illegibly written
'Fritz painstakingly wrote illegibly.'

²In addition, this usage is prosodically marked, requiring a *Hutkontur* 'bridge contour'.

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- (18) Hans hat **geschickt** die Frage **dumm** beantwortet.
 Hans has skilfully the question stupidly answered
 ‘Hans skilfully answered the question stupidly.’

This is an important point, since the event-based account is, as already mentioned in section 2.2.1, not intended to cover all adverbials. Rather, it is intended to cover those adverbials that allow for the entailment pattern there described as ‘entailment diamond’, cf. figure 2.1, repeated here as figure 6.1, where a sentence with multiple adverbials entails, besides the sentence without all adverbials (= the base sentence), all possible other combinations of each of the adverbials with the base sentence.

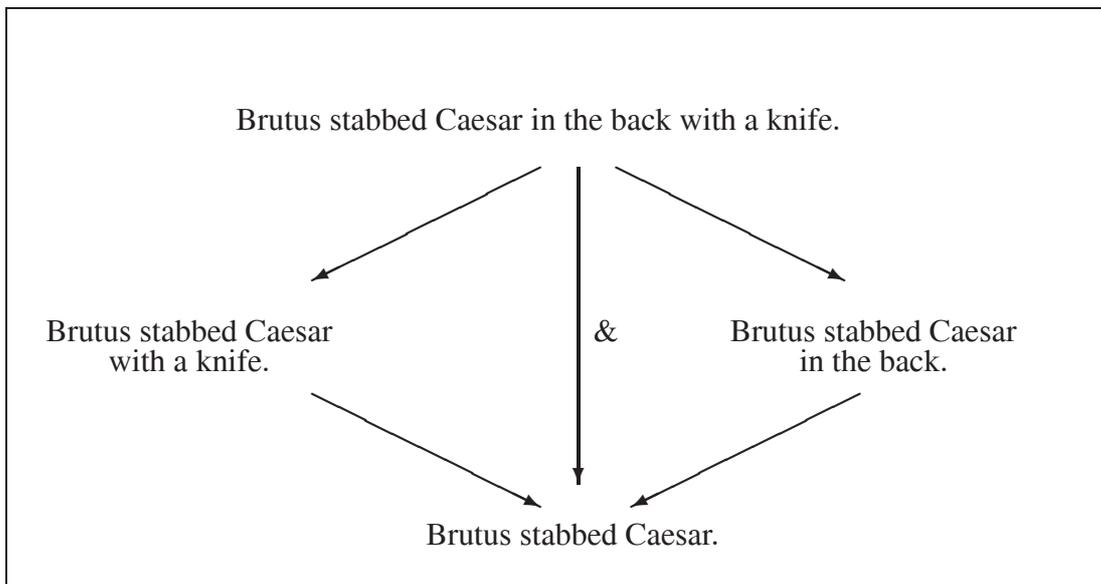


Figure 6.1

For the two sentences under discussion, not all entailments of the entailment diamond are available. In particular, the entailment from the first sentence to the sentence containing the scope-taking adverbial is not available, cf. (19) and (20).

- (19) Franz hat sorgfältig unleserlich geschrieben.
 ↯ Franz hat sorgfältig geschrieben.
 ‘Franz **painstakingly** wrote **illegibly**.’
 ↯ ‘John wrote **painstakingly**.’
- (20) Hans hat **geschickt** die Frage **dumm** beantwortet.
 ↯ Hans hat die Frage **geschickt** beantwortet.
 ‘Hans skilfully answered the question stupidly.’
 ↯ ‘Hans skilfully answered the question.’

If the scope-taking adverbials are manner adverbials but are not treated as predicates of events, then the event-based approach becomes less convincing. If, on the other hand, the scope-taking adverbials are not manner adverbials, they simply belong to the group of adverbials not treated by the event-based approach.

Parsons (1972), who used the sentence (1) to argue against Reichenbach and in favour of the predicate modifier theory (cf. the discussion of this theory in section 2.2.2), claims in Parsons (1990, p. 289f., fn 17,22) that *painstakingly* in (4) should be considered as a subject-oriented or sentence modifier.

In addition, Frey & Pittner (1999) claim, for a reading of *geschickt* ‘skilfully’ similar to the one in (20), that the adjective in these usages serves as an event-internal adverbial.

This section is divided into two subsections. In section 6.3.1, I use paraphrase tests to show that both scope-taking adverbials, *sorgfältig* and *geschickt*, serve as manner adverbials. In section 6.3.2, I discuss and reject the evidence to the contrary adduced in Parsons (1990) and Frey & Pittner (1999).

6.3.1 Paraphrase tests

For *geschickt* in (8), the paraphrase from TEST 3.2, *in an X manner*, can be used cf. (21).

- (21) Hans hat **auf geschickte Art und Weise** die Frage dumm beantwortet.
‘Hans answered the question in a skilful manner stupidly.’

The paraphrase from TEST 3.1, *How . . . , that was X*, can also be applied cf. (22).

- (22) a. Hans hat **geschickt** die Frage **dumm** beantwortet.
b. Wie Hans die Frage dumm beantwortet hat, das war geschickt. (≈ a)
‘The way in which Hans answered the question stupidly was skilful.’

The application of the paraphrases from TEST 3.6 shows that *geschickt* ‘skilfully’ is best classified as an agent-oriented manner adverbial, cf. (23).

- (23) Es war geschickt von Hans, wie er die Frage dumm beantwortet hat.
‘It was skilful of Hans, how he answered the question stupidly.’

For *sorgfältig* in (7), repeated as (24-a), the same paraphrases can be used, cf. (24-b-d).

- (24) a. Fritz hat **sorgfältig unleserlich** geschrieben.
Fritz has painstakingly illegibly written
‘Fritz painstakingly wrote illegibly.’
b. Fritz hat **auf sorgfältige Art und Weise unleserlich** geschrieben. (≈ a)
‘Fritz wrote illegible in a careful manner.’
c. Wie Fritz unleserlich geschrieben hat, das war sorgfältig. (≈ a)
‘How Fritz wrote illegible, that was careful.’

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- d. Es war sorgfältig von Fritz, wie er unleserlich geschrieben hat. (≈ a)
'It was careful of Fritz, how he wrote illegible.'

Incidentally, of the two adverbials in the scope of *geschickt* and *sorgfältig*, respectively, only *dumm* 'stupidly' is a manner adverbial, whereas *unleserlich* 'illegible' is an implicit resultative. Again, this can be established with the help of the paraphrase tests.

For *dumm* in (8), the paraphrase from TEST 3.2, *in an X manner*, can be used, cf. (25).

- (25) Hans hat geschickt die Frage **auf dumme Art und Weise** beantwortet.
'Hans answered the question skilfully in a stupid manner.'

The paraphrase from TEST 3.1 cannot be used for *dumm* 'stupidly', cf. (26).

- (26) a. Hans hat **geschickt** die Frage **dumm** beantwortet.
b. ??Wie Hans geschickt die Frage beantwortet hat, das war dumm. (≠ a)
'The way in which Hans answered the question, that was stupid.'

The reason for the failure of (26-b) as paraphrase of (26-a) is the presence of the scope-taking adverbial *geschickt*. If it is absent, cf. (27), the paraphrase can be used for *dumm* 'stupidly', cf. (28)..

- (27) Hans hat die Frage **dumm** beantwortet.
Hans has the question stupidly answered
'Hans answered the question stupidly.'
- (28) Wie Hans die Frage beantwortet hat, das war dumm.
'How Hans answered the question, that was stupid.'

In contrast to *geschickt* 'skilfully', *dumm* 'stupidly' cannot be interpreted as an agent-oriented manner adverbial. This is evident from the application of the paraphrases from TEST 3.6, cf. (29), which does not give an adequate paraphrase of (27).

- (29) Es war dumm von Hans, wie er die Frage beantwortet hat.
'It was stupid of Hans, how he answered the question.'

That *dumm* 'stupidly' cannot be understood as a resultative adverbial becomes evident when the behaviour of *dumm* with regard to TEST 3.1 (cf. (28)) is compared to the behaviour of a resultative.

- (30) a. Peter hat die Wand **blau** gestrichen.
Peter has the wall blue painted
'Peter painted the wall blue.'
- b. *Wie Peter die Wand gestrichen hat, das war blau.
'The way in which Peter painted the wall, that was blue.'

As (30) shows, a sentence containing a resultative, here *blau* ‘blue’, cannot be paraphrased with the help of TEST 3.1.

In contrast to *dumm*, *illegible* does not appear to serve as a manner adverbial, but rather as an implicit resultative (this was already noted by Bartsch (1972, p. 273) in her discussion of Parsons’ example).

- (31) a. Peter hat **unleserlich** geschrieben.
Peter has illegibly written
‘Peter wrote illegibly.’
b. Wie Peter geschrieben hat, das war unleserlich. (\neq a)
The manner in which Peter wrote was illegible.
- (32) a. Peter hat **unleserlich** geschrieben.
Peter has illegibly written
‘Peter wrote illegibly.’
b. Peter hat x so geschrieben, das x unleserlich war. (\approx a)
‘Peter wrote x, so that x was illegible.’

Since implicit resultatives fall outside the scope of this work, I will restrict myself in section 6.4 to the analysis of sentence (8), which contains two manner adverbials.

6.3.2 Other classifications of the scope-taking adverbials

Parsons (1990, p. 289f., fn 17,22) claims that *painstakingly* in (4) should be considered as a subject-oriented or sentence modifier. Frey & Pittner (1999) argue for their example *Hans hat geschickt alle Fragen dumm beantwortet* ‘Hans skilfully answered all questions stupidly’ that *geschickt* ‘skilfully’ is an event-internal adverbial and not a manner, or in their terminology, process adverbial.

To do these criticisms justice, it is important to take a short look at the definitions and especially the semantics that Parsons and Frey & Pittner give for the classes of adverbials they propose.

Parsons (1990, p. 63f.) argues that sentence modifiers stand for properties of propositions. Subject-oriented modifiers resemble, according to Parsons, sentence modifiers except for their special sensitivity to the subject position. They stand for relations between things and propositions.

This understanding of sentence and subject-oriented modifiers makes it impossible to categorize *painstakingly* into either of these groups, cf. (33) for the repeated (4) and the application of the common paraphrases for sentence and subject-oriented modifiers in (33-a) and (33-b).

- (33) John **painstakingly** wrote **illegibly**. (\neq a, b)
a. It was painstaking that John wrote illegibly.
[paraphrase sentence modifier]

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- b. It was painstaking of John that he wrote illegibly.
[paraphrase subject-oriented modifier]

The same holds true for the German equivalent, cf. (34) and the two inadequate paraphrases in (34-a) and (34-b).

- (34) Fritz hat **sorgfältig unleserlich** geschrieben. (\neq a,b)
Fritz has painstakingly illegibly written
a. Es war sorgfältig, daß Fritz unleserlich geschrieben hat.
b. Es war sorgfältig von Fritz, daß er unleserlich geschrieben hat.

In contrast, these paraphrases work well for Parsons's (1990) examples of sentence and subject-oriented modifiers. This is shown in (35) for the sentence modifier *necessarily*, where (35-b) paraphrases (35-a) and in (36) for the subject-oriented modifier *rudely*, where (36-b) paraphrases (36-a).

- (35) a. John **necessarily** wrote **illegibly**
b. It was necessary that John wrote illegibly. (\approx a)
(36) a. John **rudely** wrote **illegibly**
b. It was rude of John that he wrote illegibly. (\approx a)

With respect to these two paraphrases, *geschickt* 'skilfully' in sentence (8) leads to the same pattern as exhibited by *painstakingly* in sentence (4), cf. (37). Neither (37-a) nor (37-b) are paraphrases of (8).

- (37) Hans hat **geschickt** die Frage **dumm** beantwortet. (\neq a,b)
a. Es war geschickt, daß Hans die Frage dumm beantwortet hat.
'It was skilful that Hans answered the question stupidly.'
b. Es war geschickt von Hans, daß er die Frage dumm beantwortet hat.
'It was skilful of Hans that he answered the question stupidly.'

It should be kept in mind, though, that *geschickt* 'skilfully' can serve as subject-oriented adverbial, especially when it occurs with a so-called comma-intonation, as in (38).

- (38) Hans hat, **geschickt**, die Frage **dumm** beantwortet.
Hans has, skilfully, the question stupidly answered
'Cleverly, Hans answered the question stupidly.'

Without a comma-intonation, the sentential reading is usually indicated by using the adverb *geschickterweise* 'cleverly', which is derived from the adjective *geschickt*.³ Consequently, (39) receives the same interpretation as (38).

³The suffix *-weise* is the standard German suffix to derive adverbs from adjectives, cf. section 2.1.2.2.

- (39) Hans hat **geschickterweise** die Frage **dumm** beantwortet.
Hans has cleverly the question stupidly answered
'Cleverly, Hans answered the question stupidly.'

This leaves us with the suggestion by Frey & Pittner to treat *geschickt* as an event-internal adverbial. Event-internal adverbials differ from manner adverbials in that they can take scope over negation, or rather, scope over non-contrastive negation. Manner adverbials, in contrast, cannot scope over negation (cf. TEST 3.3 in section 3.2.1). Before investigating the behaviour of the sentence with respect to negation, it is helpful to recall the difference between contrastive and non-contrastive or, to use terminology from Jacobs (1991, p. 586), *replacive* or *non-replacive* negation. The defining characteristic of replacive negation is that it is necessarily connected with the replacement of at least part of the negated content.⁴ A good diagnostic for whether something constitutes replacive negation is the usage of German *sondern* vs. *aber* in follow-up phrases: *sondern*-phrases follow replacive negation, *aber*-phrases cannot follow.

- (40) a. Fritz hat das Lied nicht LAUT gesungen, sondern leise.
Fritz did not sing the song loudly, but quietly.
b. ??Fritz hat das Lied nicht LAUT gesungen, aber leise.
Fritz did not sing the song loudly, but quietly.

Prosody plays an important role in the evaluation of these sentences, as it allows the conversion of the linear order of words that can be used for non-replacive negation into a replacive negation. On the other hand, some linear orders, such as the one given in (40), allow only replacive negation.

The negation test cannot be used to determine the status of the scope-taking adverbial directly, since already the occurrence of one manner adverbial leads to incompatibility with sentence negation, and *dumm* 'stupidly' clearly serves as a manner adverbial. This is shown in (41), where (41-a)-(41-b) force either an interpretation of the negation as replacive negation or a reading of *geschickt* as a subject-oriented adverbial. In both cases, the two sentences still entail that Hans answered the question. Sentence (41-c) is simply incomprehensible. This is the case regardless of the prosody of the sentence.

- (41) a. ?Hans hat **geschickt nicht** die Frage **dumm** beantwortet.
Hans has skilfully not the question stupidly answered
b. ?Hans hat **geschickt** die Frage **nicht dumm** beantwortet.
Hans hat skilfully the question not stupidly answered
c. *Hans hat **geschickt** die Frage **dumm nicht** beantwortet.

In (41-a), *geschickt* only makes sense if it is interpreted as a sentential adverbial. The sentence becomes perfect with a comma intonation. (41-b) also needs a sentential

⁴Jacobs (1991, p. 586): "Replaziv ist eine Negation genau dann, wenn sie notwendig mit der Ersetzung mindestens eines Teiles des negierten Inhalts verknüpft ist."

reading of *geschickt*. Finally, (41-c) is totally out, because *geschickt* ‘skilfully’ and *dumm* ‘stupidly’ have to be evaluated at the same level, leading to a direct semantic conflict.

Since the negation test cannot be applied to the sentence in question, I will try to apply it to sentences containing *geschickt* ‘skilfully’ and no further adverbials. Consider the examples in (42) and (43).

- (42) Hans hat **geschickt** die Frage **nicht** beantwortet.
 Hans has skilfully the question not answered.
 ‘Hans has skilfully not answered the question.’
- (43) Hans hat die Frage **geschickt nicht** beantwortet.
 Hans has the question skilfully not answered.
 ‘Hans has skilfully not answered the question.’

Sentence (42) can receive two interpretations. One is a reading of *geschickt* as a subject-oriented modifier, cf. (44).

- (44) It was clever of Hans that he did not answer the question. [subject-oriented]

The other reading is given in (45-a) and conveys the same meaning as (45-b).

- (45) a. How Hans did not answer the question, that was clever.
 b. It was clever of Hans how he talked without answering the question.

On the interpretation given in (44), *geschickt* serves as a subject-oriented adverbial. On this usage, *geschickt* is synonymous with *geschickterweise* ‘cleverly’, its unambiguous adverb cognate, cf. (46).

- (46) Hans hat **geschickterweise** die Frage **nicht** beantwortet.
 Hans has cleverly the question not answered
 ‘Cleverly, Hans did not answer the question.’

The reading of (42) given in (45), on the other hand, is a manner reading. This interpretation seems also to be the preferred one for (43). However, in contrast to the regular cases of manner modification, it is not the activity denoted by the verbal predicate whose manner is specified. What is specified by *geschickt* ‘skilfully’ seems to be the ‘not_answering’, which itself denotes a specific activity. Or rather, there is some activity, which is executed skilfully, which allows the subject to uphold the state of not_having_answered. On this reading the sentence in (42) conveys the same meaning as the sentence in (47), containing lexically negative verbs, i.e. verbs that form converses with negated verbs (e.g. here *eine Frage nicht beantworten* ‘to not answer a question’ ⇔ *einer Frage ausweichen* ‘to dodge a question’).

- (47) Hans ist **geschickt** der Frage ausgewichen.
 Hans is skilfully the question dodged

‘Hans skilfully dodged the question.’

This usage of the negation marker in combination with the verb is marked, as can be seen from the following datum from a newspaper, cf. (48), where *nicht* ‘not’ was printed in italics as a reflex of the markedness of the construction.

(48) Doch das Publikum hing an seinen Lippen und begann nach dem einstündigen Vortrag, fleißig Fragen zu stellen, die er so virtuos *nicht* beantwortete, dass niemand es merkte.

‘But he had the audience in his grip, and after the one-hour talk they started asking questions which he so virtuos *not* answered that no one noticed.’

From the newspaper *Die Zeit*, 16.09.2004, p. 39

Note that the markedness of this construction is not due to an occurrence of replacive negation. This is confirmed by the fact that it is impossible to insert a *sondern*-phrase in the last part of the sentence, cf. (49).

(49) ??die er so virtuos nicht beantwortete, **sondern umging**, dass niemand es
which he so virtuos not answered, but dodged, that no.one it
merkte.

noticed

‘which he so virtuos not answered, but dodged, that no one even noticed.’

More evidence for this analysis of *geschickt* ‘skilfully’ comes from the comparison of the paraphrases possible for (49) to the paraphrase available for sentences containing adverbials that clearly can outscope sentence negation, e.g. mental-attitude adverbials such as *absichtlich* ‘on purpose’, cf. (50).

(50) Hans hat die Frage **absichtlich nicht** beantwortet.

Hans has the question on.purpose not answered.

‘Hans did not answer the question on purpose.’

Sentence (50) can be paraphrased with the help of (51-a), but not with the help of (51-b), a paraphrase according to TEST 3.1.

(51) a. Es war absichtlich von Hans, daß er die Frage nicht beantwortet hat.

‘It was on purpose from Hans that he did not answer the question.’

b. Es war absichtlich von Hans wie er die Frage nicht beantwortet hat.

‘It was on purpose from Hans how he did not answer the question.’

The pattern for the *geschickt-not*-sentences is exactly opposite, cf. (52) and the two paraphrases (53-a) and (53-b).

(52) Hans hat die Frage **geschickt nicht** beantwortet.

Hans has the question skilfully not answered.

‘Hans did skilfully not answer the question.’

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- (53) a. Es war geschickt von Hans, daß er die Frage nicht beantwortet hat.
It was skilful of Hans that he did not answer the question.
b. Es war geschickt von Hans, wie er die Frage nicht beantwortet hat.
It was skilful how Hans did not answer the question.

Only (53-b) is a paraphrase of the intended reading of the sentence, while (53-a) paraphrases the subject-oriented reading of *geschickt* 'skilfully'.

More evidence for this analysis comes from cases where the negated verbal predicate is not usually associated with certain activities. For these sentences, a manner reading is not so readily available, cf. (54) and (55).

- (54) a. Hans hat **geschickt** den Knoten gelöst.
Hans has skilfully the knot untied
'Hans skilfully untied the knot.'
b. Hans hat **geschickt** den Knoten **nicht** gelöst.
Hans has skilfully the knot not untied
'Cleverly, Hans did not untie the knot.'
- (55) a. Hans hat **geschickt** geschrieben.
Hans has skilfully written
'Hans wrote skilfully.'
b. Hans hat **geschickt nicht** geschrieben.
Hans has cleverly not written
'Cleverly, Hans did not write.'

For both (54) and (55), a manner reading is only possible if an activity is construed that is used to uphold the state of not_untying_the_knot and not_writing, respectively. Such a reading might be possible for (54-b) in situations where someone is supposed to untie a knot and in fact pretends to do so, but in reality does everything he can to not untie it. For (55-b), it is hard to imagine what a possible situation could be that makes this sentence a plausible description of an active covert avoidance of an action.

In section 5.2, I argued that the impossibility of manner adverbials to take scope over negation can be explained semantically: if the manner adverbial precedes the negation, then no process or activity where a manner can be specified is available. The patterns for *geschickt* show one exception to this rule, since here the negated verb is associated with a specific activity, and a manner can be specified. Thus, although on a mechanic application of the negation test it appears that *geschickt* does not function as a manner adverbial in the sentences where it precedes the negation, it turns out that on a closer look it serves as a manner adverbial.

To sum up, this section has shown that *geschickt* 'skilfully' in (8) as well as *sorgfältig* 'painstakingly' in (7) in their intended interpretations serve as manner adverbials. This was illustrated with the help of the paraphrase tests as well as the negation test.

6.4 What causes the scopal effects?

As Parsons (1990, p.289, fn. 17) correctly notes, it is difficult to find sentences that display a behaviour parallel to that of his *John painstakingly wrote illegibly* example. The same holds for the German data. If, for example, a sentence contains two pure manner adverbials the scope effect seems absent, cf. (56).

- (56) Hans hat **laut** die Frage **dumm** beantwortet.
 Hans has loudly the question stupidly answered
 ‘Hans answered the question loudly and stupidly.’

This sentence is equivalent to both variants in (57).

- (57) a. Hans hat die Frage **laut** und **dumm** beantwortet.
 Hans has the question loudly and stupidly answered
 b. Hans hat die Frage **dumm** und **laut** beantwortet.
 Hans has the question stupidly and loudly answered

I follow the hypothesis that the occurrence of the scope effect results from the lexical semantics of the adjectives that are used in these constructions. In order to show this, I will first discuss the attributive usage of *geschickt* ‘skilful’, and then transfer the findings to the adverbial usage.

6.4.1 The adjective *geschickt* and the question of intersectivity

What is of much interest in this connection is whether *geschickt* should in general be treated as an intersective or non-intersective modifier. To investigate this question, it is insightful to start from its adjectival usage. In adjective semantics, especially in the combination with nouns, it is common to differentiate between intersective adjectives and non-intersective adjectives (This introduction follows closely Partee (n.d.), Partee (1995)). Typical intersective adjectives are given in (58).

- (58) zwei-beinig ‘two-legged’, radioaktiv ‘radioactive’, krank ‘sick’, rot ‘red’, supraleitend ‘superconductive’, deutsch ‘German’

They have the special property that when combined with a noun, both adjective and noun can be regarded as one-place predicates denoting sets. Their combination denotes the intersection of the two sets, cf. e.g. (59) for the denotation of *kranker Mann* ‘sick man’.

- (59) *kranker Mann* ‘sick man’
 $[[\text{krank}]] = \{x \mid x \text{ is sick}\}$
 $[[\text{Mann}]] = \{x \mid x \text{ is a man}\}$
 $[[\text{kranker Mann}]] = [[\text{krank}]] \cap [[\text{Mann}]]$
 $= \{x \mid x \text{ is sick and } x \text{ is a man}\}$

Intersective adjectives therefore allow the inference pattern given in (60).

- (60) Max ist ein kranker Mann. ‘Max is a sick man.’
 Max ist ein Linguist. ‘Max is a linguist.’
 —————
 → Max ist ein kranker Linguist. ‘Max is a sick linguist.’

Nonintersective adjectives, in contrast, do not show this behaviour. A classic example for a nonintersective adjective is *ehemalig* ‘former’. If combined with a noun, e.g. in the phrase *ehemaliger Senator* ‘former senator’, the denotation of the noun phrase is not the intersection of the set denoted by *ehemalig* and the set denoted by *Senator*, cf. (61).

- (61) *ehemaliger Senator* ‘former senator’
 $[[\text{ehemaliger Senator}]] \neq [[\text{ehemalig}]] \cap [[\text{Senator}]]$

Nonintersective adjective do not allow the inference pattern shown in (60) for intersective adjectives, cf. (62).

- (62) Max ist ein ehemaliger Senator. ‘Max is a former senator.’
 Max ist Vorstandsvorsitzender. ‘Max is CEO.’
 —————
 ↯ Max ist ein ehemaliger Vorstandsvorsitzender. ‘Max is a former CEO.’

One of the reasons why *former* is such a clear case of nonintersective modification lies in the fact that this adjective is not even subsective, cf. (63) and the inference pattern in (64).

- (63) *former senator*
 $[[\text{former senator}]] \not\subseteq [[\text{senator}]]$
- (64) Max ist ein ehemaliger Senator. ‘Max is a former senator.’
 —————
 ↯ Max ist ein Senator. ‘Max is a senator.’

Between nonsubsective adjectives such as *former* and intersective adjectives such as *sick* lies the huge group of subsective adjectives. An adjective like *groß* ‘big’ seems to belong to this group, cf. (65) and (66).

- (65) *großer Junge* ‘big boy’
 $[[\text{großer Junge}]] \subseteq [[\text{Junge}]]$
- (66) Max ist ein großer Junge. ‘Max is a big boy.’
 —————
 → Max ist ein Junge. ‘Max is a boy.’

Subsective adjectives also do not allow the inference pattern given in (60) for intersective adjectives, cf. (67).

- (67) Max ist ein großer Junge. 'Max is a big boy.'
 Max ist ein Ringer. 'Max is a wrestler.'
 —————
 ↯ Max ist ein großer Ringer. 'Max is a big wrestler.'

Another adjective which seems to belong to this group is *geschickt* 'skilful', cf. (68) and (69).

- (68) Max ist ein geschickter Junge. 'Max is a skilful boy.'
 —————
 → Max ist ein Junge. 'Max is a boy.'
- (69) Max ist ein geschickter Junge. 'Max is a skilful boy.'
 Max ist ein Ringer. 'Max is a wrestler.'
 —————
 ↯ Max ist ein geschickter Ringer. 'Max is a skilful wrestler.'

So far, we have seen that inference patterns of adjectives in their attributive use allow a clear distinction between intersective adjectives and nonintersective adjectives. Furthermore, within the group of nonintersective adjectives, we can distinguish subsective and nonsubsective adjectives. *Geschickt* belongs to this latter group. Nevertheless, the conclusiveness of the inference pattern shown in (60) as a test for intersectivity has been called into question. Partee (1995, pp. 330ff) argues that an adjective like *big*, or in her examples, *tall*, is in fact intersective, but contextsensitive and vague. *Skilful*, on the other hand, is nonintersective, though also contextsensitive.⁵

Her argumentation runs as follows: It is true that adjectives like *tall* and *big* fail the standard test for intersectivity, cf. (67) for *big*. However, the test is inconclusive, because the reason for the inference failure is that the adjective is differently interpreted in the premise and in the conclusion. This different interpretation, in turn, is a result of the inherent vagueness of adjectives such as *big* or *tall* (the contextsensitivity or vagueness of these adjectives is frequently discussed, cf. e.g. Kamp (1975), Partee (1995), Heim & Kratzer (1998) and Chierchia & McConnell-Ginet (2000)). Something or someone can only be *big* in relation to other things or persons, and these other things or persons are given by the context, either the linguistic or extra-linguistic context, or a combination of both. Thus, assuming no further context, *groß* 'big' in (70-a) can be evaluated as setting an elephant into relation to the size standard for elephants. With regard to this size standard, the elephant is judged to be big. In (70-b), in contrast, the comparison class in relation to whose size standard the boy is judged to be big consists most likely of other boys, but not of elephants.

- (70) a. ein großer Elephant 'a big elephant'
 ≈ groß für einen Elefanten 'big for an elephant'
 b. ein großer Junge 'a big boy'
 ≈ groß für einen Jungen 'big for a boy'

⁵A similar account can be found in Kamp & Partee (1995).

That it is not the noun phrase which is modified by the adjective alone that influences the interpretation of the adjective can be seen in (71).

- (71) a. My 2-year-old son built a really tall snowman yesterday.
 b. The D.U. fraternity brothers built a really tall snowman last weekend.
 = (17) in Partee (1995)

Although both sentences talk about tall snowmen, the size standards used to evaluate the adjective differ: We expect the snowman built by the two-year old to be far smaller than the one built by the fraternity. In a similar way, information from previous utterances can influence which size standard is used in evaluation.⁶ It seems, however, that the modified noun always plays the most important role in specifying the relevant size standard. That is, intuitively it seems plausible that first the modified noun restricts the possible size standards to size standards for snowmen. In a second step, further contextual information is used to finetune that size standard.

The inference in (67) thus fails because, given only the bare noun phrases, the interpretation of *big* is not kept constant. In the premise, *big* is naturally taken as describing Max as big relative to the size standard set by boys. In the conclusion, *big* in its most likely interpretation is evaluated against the size standard of wrestlers. As world knowledge tells us that the latter size standard, on an absolute scale of bigness, is located nearer to the upper end of the scale than for the former, the inference does not go through. If, however, the size standard is kept constant, the inference pattern holds, cf. (72), where the size standard is given by the lowered *for*-phrases.

- (72) Max is a big_{for boys} boy
 Max is a wrestler
 —————
 → Max is a big_{for boys} wrestler.

One way of incorporating this context-dependency into the formal representation is through the addition of a contextual parameter to the lexical entry of the adjective and letting the context determine the size standard relevant for the context at hand. The lexical entry for *big* can then be given as (73), where *C* stands for this contextual parameter.

- (73) $\lambda x[BIG(x, C)]$

BIG(x, C) is to be read as *x is big judged against the size standard made salient by the utterance context*.

The noun phrases in (70) will then be formalized as in (74), where the lowered phrases on the context parameter should be taken as the size standard used in the given context, where *C_{elephants}* refers to the size standard set by elephants.

⁶If in the following examples specific contexts are assumed, they should therefore be taken as possibilities for context specifications.

- (74) a. $\lambda x[ELEPHANT(x) \ \& \ BIG(x, C_{elephants})]$
 b. $\lambda x[BOY(x) \ \& \ BIG(x, C_{boys})]$

Big vs skilful Interestingly, Partee argues that *skilful* differs from *big* and similar adjectives in that it is not, in her terminology, intersective.⁷ Below, I will first point to the obvious similarities between *skilful* and Partee’s ‘intersective but contextdependent and vague’ adjectives and then look in detail at what Partee argues to be the decisive difference.

In the same way as *big*, *geschickt* ‘skilful’ also exhibits context-sensitivity. This is shown by the examples in (75), which behave parallel to the examples in (70).

- (75) a. ein geschickter Elephant ‘a skilful elephant’
 \approx geschickt für einen Elephanten ‘skilful for an elephant’
 b. ein geschickter Junge. ‘a skilful boy’
 \approx geschickt für einen Jungen ‘skilful for a boy’

Consequently, the formal representation of *geschickt* also contains a contextual parameter, cf. (76).

- (76) $\lambda x[SKILFUL(x, C)]$

Again, *SKILFUL(x, C)* must be read as *x is skilful judged against the standard of skilfulness made salient by the utterance context*. The noun phrases in (75) can then be represented as in (77).

- (77) a. $\lambda x[ELEPHANT(x) \ \& \ SKILFUL(x, C_{elephants})]$
 b. $\lambda x[BOY(x) \ \& \ SKILFUL(x, C_{boys})]$

Skilful and its German equivalent *geschickt* differ from *big* and *tall* in that they cooccur with *as-* respective *als-*phrases, cf. (78).

- (78) Fritz ist geschickt als Anwalt.
 Fritz is skilful as lawyer
 ‘Fritz is skilful as a lawyer.’

Intuitively, the *as/als*-phrases restrict the skill to a specific domain of activities, in (78) to those activities connected with the occupation ‘lawyer’.⁸ If no *as/als*-phrase is ex-

⁷With regard to this point, Kamp & Partee (1995) contains the following statement:

One might argue that some or all of these other supposedly non-intersective adjectives like *skillful* might also be better analyzed as context-dependent intersective adjectives, differing from adjectives like *tall* only in the nature and extent of the contextual effects. In fact the two authors of this paper tend to disagree about *skillful*, and we have been unable to find or construct any fully conclusive arguments for either side. (p. 143)

⁸Landman (1989, pp. 730ff) also argues that *as*-phrases introduce an implicit restriction. Thus, in

plicitly given, it can nevertheless play a role in the interpretation. Thus, in (79-a) and (79-b) the modified noun is typically understood as implicitly providing this information, as indicated in the paraphrases.

- (79) a. ein geschickter Anwalt ‘a skilful lawyer’
 ≈ geschickt als Anwalt ‘skilful as a lawyer’
 b. ein geschickter Taschendieb ‘a skilful pickpocket’
 ≈ geschickt als Taschendieb ‘skilful as a pickpocket’

Geschickt in (79-a) can be understood as being evaluated relative to the domain of activities associated with being a lawyer. Whoever the NP is attributed to is only *geschickt* in this specific domain, not in any other domain (or better: nothing is said about any other domains). Similarly, the domain relevant for the evaluation of (79-b) is the domain of pickpocketing.

If a modifier can be interpreted with respect to several domains (expressed with the help of *as*-phrases), the scales associated with that modifier do not form a continuum. That is, if we judge anything as big, this is, as remarked earlier, always relative to a context. But all these contextually relativized usages can be mapped against one absolute scale, as indicated in figure 6.2 by the locations of contextually relativized small-big scales relative to an absolute small-big scale.

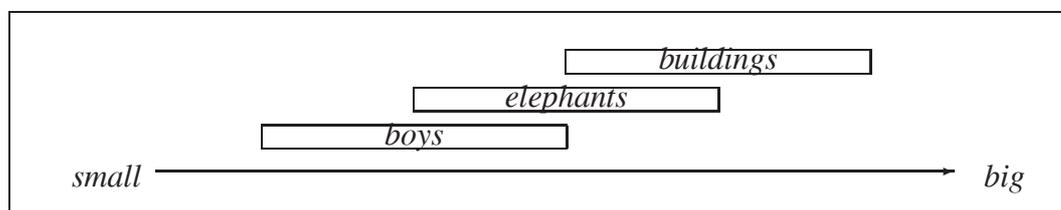


Figure 6.2

In contrast to the scales for *big*, there is no way in which the different scales used in evaluating an adjective like *skilful* could be mapped onto an absolute scale, instead, every domain brings along its own scale. See, for example, figure 6.3 for the scales relevant to (79).

the discussion of his example (i), he says that “the first statement says something about John’s character, but the second only says something about a certain aspect of his character.

- (i) John is thoroughly corrupt, but as a judge he is trustworthy.

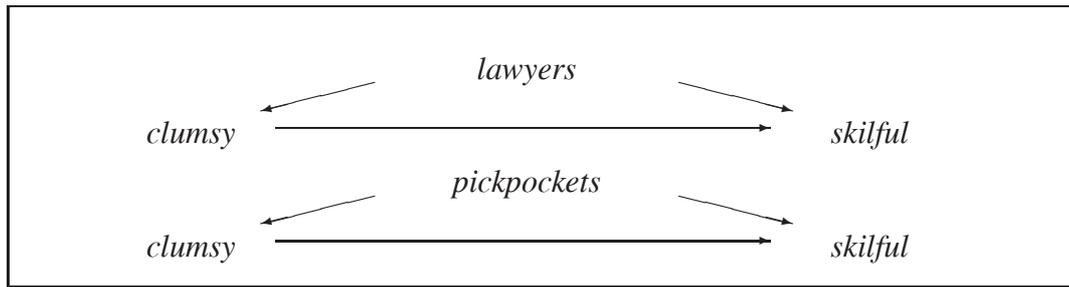


Figure 6.3

Partee (1995, p. 331) argues that the occurrence with *as*-phrases provides evidence “that there is a difference between truly nonintersective subjective adjectives like *skillful* and intersective but vague and context-dependent adjectives like *tall*” (Partee 1995, p. 331). Of course Partee is correct in saying that there is a difference, however, it is not clear whether this domain-sensitivity cannot be reduced to context-sensitivity.

Two things speak against the availability of *als/as*-phrases as a decisive factor in determining whether an adjective is intersective or not.

First, *geschickt* does not always allow the addition of an *als*-phrase, cf. (80).

- (80) a. ein geschickter Elephant ‘a skilful elephant’
 ≠ geschickt als Elephant ‘skilful as an elephant’
 b. ein geschickter Junge. ‘a skilful boy’
 ≠ geschickt als Junge ‘skilful as a boy’

On the other hand, adjectives such as *schnell* also, under certain circumstances, allow the addition of an *als*-phrase, cf. (81).

- (81) Tamara is a **quick** runner but a **slow** thinker.
 a. Tamara is quick as a runner.
 b. Tamara is slow as a thinker.

In (81), Tamara is judged to be quick in the domain of running against the standard of quickness in this domain set by the salient utterance context. She is judged to be slow in the domain of thinking judged against the standard of quickness in this domain set by the salient utterance context.

Even for *hoch* ‘tall’, a context can be construed where an *als*-phrase becomes appropriate, cf. (82).

- (82) Als Verteidigung gegen den Feind ist diese Mauer **zu niedrig**, als
 As defence against the enemy is this wall too low, as
 Feldbegrenzung ist sie **zu hoch**.
 field.boundary is she too high.
 ‘As a defence against the enemy, this wall is too low, as a boundary for the

field, it is too high.'

Secondly, the availability of *als/as*-phrases in the interpretation stands in complementary distribution with *für/for*-phrases.

- (83) ein geschickter Anwalt (either \approx a or \approx b, but $\not\approx$ c)
- a. skilful lawyer
 - a. geschickt für einen Anwalt
skilful for a lawyer
 - b. geschickt als Anwalt
skilful as a lawyer
 - c. ?geschickt als Anwalt für einen Anwalt
skilful as a lawyer for a lawyer

What this suggests is that there are in fact more parallels than differences between adjectives such as *tall* on the one, and *geschickt* on the other hand. The parallel in both cases seems to be that the determination of the standard used for comparison proceeds in two separate steps. In a first step, the relevant scale is selected, based on the noun in the syntactic scope of the adjective. In a second step, a subscale on that scale is specified with the help of further contextual information. To see this, cf. (84) and (85).

- (84) a. This 10-year-old boy is a skilful lawyer.
b. My father is a skilful lawyer.
- (85) a. My 2-year-old son built a tall snowman.
b. My husband built a tall snowman.

For both sentence pairs, I assume that the selection of an appropriate scale for the evaluation of the adjectives proceeds in the same way. For *skilful* in (84-a) and (84-b), we first select the scale for the skilfulness respective clumsiness of lawyers, and then a subscale relativized to 10-year-olds and adults (on the assumption that fathers are adults), cf. figure 6.4.

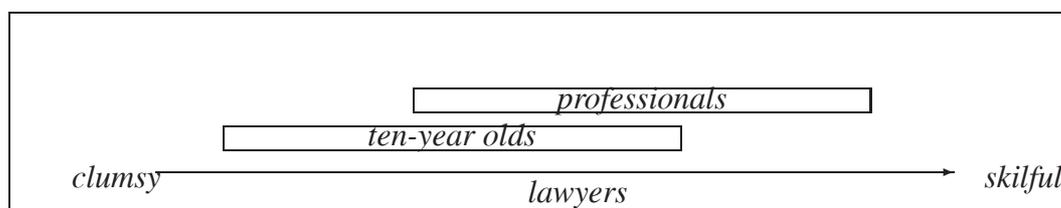


Figure 6.4

For *tall* in (85-a) and (85-b), we first select the scale for measuring the tallness of snowmen, and then select the appropriate subscales for 2-year-olds and adults, respectively, cf. figure 6.5.

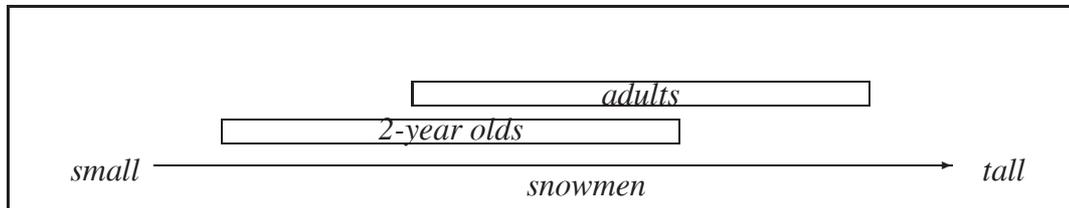


Figure 6.5

The easiest way to formalize this is by assuming that the context parameter C is split up into two separate parameters, C^S and C^U , standing for syntactic context and utterance context, respectively.^{9 10}

$$(86) \quad \lambda x[\text{GESCHICKT}(x, C^U, C^S)]$$

$\text{GESCHICKT}(x, C^U, C^S)$ is then to be read as *x is judged to be skilful with regard to C^S against the standard of skilfulness with regard to C^S set by the salient utterance context C^U .*

The modified NPs in (87-a-b) can then be represented as in (88-a-b), where, for the sake of the example, the most salient utterance context is simply taken to be that which is given by the subject NP.

- (87) a. This monkey is a skilful pickpocket.
b. This ten-year old is a skilful lawyer.

$$(88) \quad \begin{aligned} \text{a. } & \lambda x[\text{PICKPOCKET}(x) \ \& \ \text{SKILFUL}(x, C_{\text{monkey}}^U, C_{\text{pickpocket}}^S)] \\ \text{b. } & \lambda x[\text{LAWYER}(x) \ \& \ \text{SKILFUL}(x, C_{\text{10-year old}}^U, C_{\text{lawyer}}^S)] \end{aligned}$$

On this view of the effect the *als*-phrase has on the interpretation, the predicate is restricted and not the term. Landman (1989, p. 731) discusses the question of what should be the preferred analysis in the context of sentence (89).

- (89) As a judge, John is trustworthy.
= (26) in Landman (1989)

- (90) a. John-as-a-judge is trustworthy.
b. John is-trustworthy as a judge.
= (27,28) in Landman (1989)

⁹Ultimately, one only would want a single context parameter, albeit with precise information about the interaction of syntactic scope and influence of other contextual information on the fixation of this parameter.

¹⁰Szabó (2001) also makes use of different context parameters.

While Landman does not exclude an analysis of the as-phrase as predicate-restricting, he states that in some case it must be analyzed as term-restricting, namely when it occurs in appositive position but is interpreted restrictively, cf. (91).

- (91) Sir Hugh Calvin, as a judge, and Sir Hugh Calvin, as a private citizen, have different opinions.
= (29) in Landman (1989)

For the data discussed here, I find the analysis with the help of restrictions on the predicate intuitively more plausible.

6.4.2 Transferring the findings to the adverbial use of *geschickt*

Given the two parameters in the lexical entry of the adjective *geschickt* ‘skilful’, the representation of scope-effects on its interpretation when used as an adverbial is straightforward. In its use as a manner adverbial, *geschickt* shows the same two-step sensitivity to context as demonstrated for its attributive use in the previous section. To see this, cf. the two sentences in (92).

- (92) a. Der Affe hat **geschickt** das Problem gelöst.
The monkey solved the problem skilfully.
b. Der Mann hat **geschickt** das Problem gelöst.
The man solved the problem skilfully.

For both (92-a) and (92-b), the material in the syntactic scope of *geschickt* is used to establish the scale used for comparison, in this case the scale for skilfulness in the area of problem solving. In a second step, the further context is used to select an appropriate subscale: for simplicity’s sake, we assume that this will again be given by the subjects of the sentences. That is, in (92-a) a monkey is judged to be skilful at solving the given problem against the standard of skill set by other monkeys in this domain, in (92-b), a man is judged to be skilful at solving the problem against the standard of skill set by other men in this domain.

The resulting formal representations of (92-a) and (92-b) are given in (93-a) and (93-b), respectively.

- (93) a. $\exists e$ [SOLVE(*monkey*, *the_problem*, *e*) &
SKILFUL(e , $C_{monkeys}^U$, $C_{solving_the_problem}^S$)]
b. $\exists e$ [SOLVE(*man*, *the_problem*, *e*) &
SKILFUL(e , C_{men}^U , $C_{solving_the_problem}^S$)]

If we now return to our initial example (8), repeated here as (94), we see that the adjective *dumm* ‘stupidly’, which is in the syntactic scope of *geschickt*, places a further restriction on the scale against which the sentence’s subject is judged to act *geschickt* ‘skilful’.

- (94) Hans hat **geschickt** die Frage **dumm** beantwortet.
 Hans has skilfully the question stupidly answered
 ‘Hans skilfully answered the question stupidly.’

In other words, Hans’ action is not judged as skilful against the scale used to evaluate the activity of *answering_questions*, but against the scale used to evaluate the activity of *stupidly_answering_questions*. The appropriate formalization of (94) is therefore (95), where I used *adults* for the specification of the parameter C^U

- (95) $\exists e$ [ANSWER($h, the_question, e$) &
 SKILFUL($e, C^U_{adults}, C^S_{answering_the_question_stupidly}$) &
 STUPID($e, C^U_{adults}, C^S_{answering}$)]

Syntactically, and parallel to the case of noun modification, those elements that play a role in choosing the correct specification for the parameter C^S must be in the scope of the element bearing such a parameter. Thus, for the interpretation of (8) discussed here, the syntactic scope that *geschickt* has over *dumm* has a direct consequence on the correct interpretation of the sentence.

6.5 Conclusion

In this chapter, I discussed the phenomenon of scope-taking manner adverbials with the help of a detailed analysis of the behaviour of *geschickt* ‘skilfully’.

In section 2, I showed with the help of paraphrase tests that the adverbials under discussion are manner adverbials and do not belong to another class of adverbials. In particular, I rejected the alternative accounts of the data by Parsons (1972) and Frey & Pittner (1999), who both argue that the scope-taking adverbials do not function as manner adverbials.

In section 3, I showed that the adjective *geschickt* ‘skilful’ is best analyzed as parallel to adjectives like *tall* or *big*, which are context-sensitive. I argued that it makes sense to distinguish two distinct steps in the selection of an appropriate scale used in evaluating the adjectives in their attributive usages: in the first step, the material in the syntactic scope of the adjective is used to select the main scale. In the second step, other contextual information is used to select a subscale of this main scale. In order to model this two-step approach to the selection of an appropriate scale, I introduced two separate contextual parameters, C^S and C^U , into the lexical entry of the adjectives. The parameter C^S is specified with the help of the material within the syntactic scope of the adjective, the parameter C^U with the help of all other relevant contextual information.

In section 4, I showed that the lexical entry for *geschickt* introduced in section 3 allows a straightforward representation of sentences where the adjective is used as a manner adverbial. In particular, if a further adverbial is in the syntactic scope of the manner adverbial, it will be used in the fixation of the parameter C^S , and its influence on the correct interpretation of the sentence is explained.

Chapter 7

Associative readings

7.1 Introduction

The term *associative reading* is derived from the term *associative sense* introduced in Cresswell (1985, p. 186ff) to describe the reading of the adverbial *audibly* in (1).

- (1) Isolde **audibly** precedes Jeremy.
= (4) in Cresswell (1985, p. 186)

Cresswell (1985), in discussing (1), makes the following observation:

[...] it could be argued that it is not the preceding which causes Isolde to be heard, but rather the fact that she is perhaps singing or doing something else; and it is the something else which is strictly the activity that is audible. (p. 187)

In section 5.4.2, I introduced the term *associative reading* for those usages of adjectives that allow the *wobei*- ‘in doing so’ paraphrase from TEST 5.1.

Intuitively, the readings allowing the *wobei*-paraphrase correspond to the readings described by Cresswell as associative senses.

The aim of this chapter is to advance from this intuitive first idea to a clearer description of associative readings. Furthermore, I propose a formal representation for sentences containing associative readings and show how this representation can be derived by using an approach based on underspecification.

This chapter consists of six sections. Section 2 gives an overview of the data represented in previous chapters and discussed in the context of associative readings. In section 3, I give a comprehensive overview of comments in the literature related to the phenomenon of associative readings, along with a conclusion summarizing the most important aspects. In section 4, I introduce a formal representation for associative readings and a way to derive this representation. In section 5, I discuss to what extent the syntactic influence on associative readings can be accounted for in the approach used.

7.2 Data

In this section, I give an overview over the data that was treated in other parts of this work either with explicit reference to associative readings or as satisfying the *wobei*-‘in doing that’ paraphrase.

7.2.1 Adjectives allowing associative readings

In the previous chapters, several readings of adjectives allowed the *wobei*-paraphrase and were classified as associative readings. One such adjective is *sorgfältig* ‘carefully’, cf. (2), the repeated (42) from section 5.4.2.

- (2) a. Petra kocht **sorgfältig**.
Petra cooks carefully
‘Petra is cooking carefully.’
b. Petra kocht, wobei sie sorgfältig ist. (\approx a)
‘Petra is cooking. In doing this, she is careful.’

Two other adjectives allowing associative readings were *vorsichtig* ‘cautiously’ and *laut* ‘loudly’, cf. (3), the repeated (41) from section 5.4.1.2, and (4), the repeated (45) from section 5.4.2, respectively.

- (3) a. Berenike hat **vorsichtig** den Baum dekoriert.
Berenike has cautiously the tree decorated
‘Berenike decorated the tree cautiously.’
b. Berenike hat den Baum dekoriert, wobei sie vorsichtig war. (\approx a)
‘Berenike decorated the tree. In doing that, she was cautious.’
(4) a. Peter singt **laut** das Lied.
Peter sings loudly the song
‘Peter loudly sings the song.’
b. Peter singt das Lied, wobei er laut ist. (\approx a)
‘Peter sings the song. In doing that, he is loud.’

In the discussion of the holistic reading of *schnell* ‘quickly’ in section 5.4.2.2 it turned out that this reading is also an associative reading and allows the *wobei*-paraphrase, cf. (5), the repeated (58) from section 5.4.2.2.

- (5) a. Jochen schmückte **schnell** den Weihnachtsbaum.
Jochen decorated quickly the Christmas.tree
‘Jochen quickly decorated the Christmas tree.’
b. Jochen hat den Weihnachtsbaum geschmückt, wobei er schnell war. (\approx a)
‘Jochen decorated the christmas tree. In doing that, he was quick.’

Finally, the example sentence (6), discussed in detail in section 5.4.5, also allows a *wobei*-paraphrase, cf. (6).

- (6) a. Klara hat **sorgfältig** jeden Wurm aus dem Salat entfernt.
Klara has carefully every worm from the salad removed
'Klara carefully removed every worm from the salad.'
- b. Klara hat jeden Wurm aus dem Salat entfernt, wobei sie sorgfältig war.
(\approx a)
'Klara picked every worm from the salad. In doing that, she was careful.'

7.2.2 Adjectives not allowing associative readings

In other instances, I noted that associative readings are not available, cf. the patterns for *wunderbar* 'beautifully' and *intelligent* 'intelligently' in (7) and (8), the repeated (48) and (47) from section 5.4.2, respectively.

- (7) a. Robert hat Stella **wunderbar** geführt.
Robert has Stella wonderfully led
'Robert led Stella wonderfully.'
- b. Robert hat Stella geführt, wobei er wunderbar war. ($\not\approx$ b)
'Robert led Stella, in doing so, he was wonderful.'
- (8) a. Petra löst die Aufgabe **intelligent**.
Petra solves the task intelligently.
- b. Petra löst die Aufgabe, wobei sie intelligent ist. ($\not\approx$ a)
Petra solves the problem. In doing so, she is intelligent.

Other paraphrases It was noted in chapter 5 that the availability of a *wobei*-paraphrase correlates with the availability of a paraphrase using *dabei* 'there at', cf. (9), the repeated (43) from section 5.4.2.¹

- (9) a. Peter wäscht das Auto **sorgfältig**.
Peter cleans the car carefully
- b. Peter wäscht das Auto. Dabei ist er sorgfältig. (\approx a)
Peter cleans the car. In doing so, he is careful.
- c. Peter wäscht das Auto, wobei er sorgfältig ist. (\approx a)
Peter cleans the car. In doing so, he is careful.

¹Another interesting correlation noted in chapter 5 was that typically the verb in these sentences can be turned into an nominalized *beim*-infinite and answer the question *Wobei war er ADJ*, cf. (i).

- (i) Wobei war er sorgfältig?
'In doing what was he careful?'
Beim Autowaschen.
'Cleaning his car.'

The availability of the *dabei*- ‘thereat’ paraphrase plays a role in the discussion of copula sentences by Maienborn (2003a, p. 113ff), cf. e.g. (10).

- (10) Die Zucchinis waren **zart** und dabei **aromatisch**.
 The courgettes were tender and there.at savoury
 ‘The courgettes were tender and yet savoury.’
 = (8a) in Maienborn (2003a, p. 113)

She argues that the possibility of using the anaphoric *dabei* in (10) is evidence for the assumption that the referential argument of copula sentences is more than a simple temporal intervall. Maienborn does not detail the semantics of *dabei*, except for the observation that the connection between the core sentence and the information adduced in the *dabei* phrase is more than one of simple temporal overlap (cf. Maienborn (2003a, p. 113) and Maienborn (2004)).

7.3 Previous accounts of associative readings

Apart from the fact that some adverbial adjectives allow the *wobei*-paraphrase and others do not allow it, we know very little about the reasons for this behaviour. In this section, I attempt an account of the reasons by first examining previous accounts of this phenomenon.

7.3.1 Bartsch

In her representations of sentence meanings, Bartsch distinguishes sentences allowing the *wobei*-paraphrase and sentences not allowing this paraphrase (cf. for the formalizations Bartsch (1970), Bartsch (1972, pp. 159ff) and Bartsch (1976, pp. 165ff)). This can be seen by comparing the representations for (11) and (12) given in (13) and (14), respectively.

- (11) Hans singt **schön**.
 Hans sings beautifully

- (12) Hans rechnet **sorgfältig**.
 Hans calculates carefully

- (13) beautiful(ι r. P(hans, r). SINGING_PROCESS(r))

- (14) careful(ι r. P(hans, r). ACTING(r). CALCULATING_PROCESS(r))

The two formalizations need some explanation. Bartsch uses the variable r for states and processes. In both formulas, the variable is bound by the ι -operator, ensuring that

the representation refers to a particular instance of r . $P(\text{hans}, r)$ is to be read as *Hans is in r* , that is, Hans is in some state r or involved in a process r .

The two formulas differ in that (14) contains the statement $\text{ACTING}(r)$, which does not appear in (13). This statement ensures that the term the adverbial is predicated over is an ACTING ('Handeln'). According to Bartsch, the existence of the statement $\text{ACTING}(r)$ is a selectional restriction for the class of adverbials which allow the *wobei*-paraphrase (in Bartsch's terminology, mod_2 adverbials).

It is not clear to me when the statement $\text{ACTING}(r)$ is introduced and when it is not. In my view, this is a problem for Bartsch because modifiers in sentences with the same verbal predicates can be either interpreted associatively or non-associatively, cf. the preferred interpretation for (15-a) vs. (16-a) discussed in section 5.4.2 of chapter 5.

- (15) a. Peter singt **laut** das Lied.
Peter sings loudly the song
'Peter loudly sings the song.'
- b. Peter singt das Lied, wobei er laut ist. (\approx a)
'Peter sings the song. In doing that, he is loud.'
- (16) a. Peter singt das Lied **laut**.
Peter sings the song loudly
'Peter sings the song loudly.'
- b. Peter singt das Lied, wobei er laut ist. ($??\approx$ a)
'Peter sings the song. In doing that, he is loud.'

For (15-a), the *wobei*-paraphrase is acceptable, whereas for (16-a) it is not so appropriate. The representations of both sentences will contain the statement $\text{ACTING}(r)$, and Bartsch cannot distinguish the two readings here.

Note that this formal account of readings allowing the *wobei*-paraphrase by Bartsch might be due to the fact that she allows a wider range of paraphrases, cf. her repeated example (17) (cf. (42), section 3.2.3).

- (17) Petra kocht **sorgfältig**. (\approx a \approx b \approx c)
Petra cooks carefully
'Petra is cooking carefully.'
- a. Petra kocht, wobei sie sorgfältig ist.
'Petra is cooking. In doing this, she is careful.'
- b. Petra kocht, wobei sie sich sorgfältig verhält.
'Petra is cooking. In doing so she acquits herself carefully.'
- c. Petra kocht, wobei sie sorgfältig handelt.
'Petra is cooking. In doing so, she acts carefully.'

My position is that the equation of these three paraphrases is inaccurate. In particular, it is unclear what the paraphrase (17-b) is supposed to mean. Generally, one can do things carefully, but one cannot behave oneself carefully. The paraphrase (17-c) is

not meaningless, but it seems to paraphrase a subject-oriented reading of *sorgfältig* ‘carefully’ rather than a manner or associative reading.

7.3.2 Cresswell

Cresswell’s description of *associative senses* is one of the main inspirations for this chapter. Cresswell observed that not all sentences, even if they contain the same adverbial, allow associative readings of that adverbial. He demonstrates this with the help of (18), the repeated (1), and (19).

(18) Isolde **audibly** precedes Jeremy.

(19) Kiri sings **audibly**.
= (10) in Cresswell (1985, p. 188)

Cresswell argues that (19) “cannot mean simply that Kiri does something while singing which causes someone to hear her.” This contrasts with his view of (18) (cf. the quote on page 175). Cresswell (1985) suspects that semantic considerations are at issue here: “For preceding and following are not usually *as such* the kind of things which are audible or not, it is the attendant activities. Whereas singing, at any rate, *is* intrinsically susceptible of being audible.” (p. 186)

A more involved example of Cresswell’s is (20), which he “can even just imagine” to express a truth in a situation where Ludwig is a tap dancer who usually sings while dancing but does not sing today.

(20) Ludwig danced **silently** but **audibly**.
= (12) in Cresswell (1985, p. 189)

Cresswell’s interpretation of (20) is difficult to understand. It requires a non-associative interpretation of *audibly*, which is given if *dancing* refers to tap-dancing, and an associative reading of *silently*. However, it is unclear what associated activity *silently* is supposed to predicate over.

Audibly and the *wobei*-paraphrase Interestingly, the adverbial that Cresswell uses to introduce his notion of associative sense does not seem to allow the *wobei*-paraphrase. This can be seen when comparing the paraphrases available for (21) and (22).

(21) Isolde hat Jeremy **hörbar** verfolgt.
Isolde has Jeremy audibly followed
‘Isolde followed Jeremy audibly.’

(22) Isolde hat Jeremy **laut** verfolgt.
Isolde has Jeremy loudly followed
‘Isolde followed Jeremy loudly.’

Both sentences arguably have associative readings, in so far as in both cases it is probable that the following as such is not responsible for the audibility or the loudness, respectively. The sentences differ in that (21), but not (22) allows the paraphrase from TEST 3.10, that is, the paraphrase for evaluative adverbials (cf. section 3.3.5). To recall, evaluative adverbials are a subgroup of speaker-oriented adverbials. Standard examples for this type of adverbials include *überraschenderweise* ‘surprisingly’ in (23-a), and its paraphrase according to TEST 3.10 in (23-b).

- (23) a. **Überraschenderweise** hat Bush gute Berater.
Surprisingly has Bush good aides
‘Surprisingly, Bush has good aides.’
b. Es ist überraschend daß Bush gute Berater hat.
‘It is surprising that Bush has good aides.’

The results of using this paraphrase for *hörbar* and *laut*, respectively, are presented in (24) and (25).

- (24) a. Isolde hat Jeremy **hörbar** verfolgt.
‘Isolde followed Jeremy audibly.’
b. Es war hörbar, daß Isolde Jeremy verfolgt hat. (\approx a)
‘It was audible, that Isolde followed Jeremy.’

- (25) a. Isolde hat Jeremy **laut** verfolgt.
‘Isolde followed Jeremy loudly.’
b. Es war laut, daß Isolde Jeremy verfolgt hat. ($\not\approx$ a)
‘It was loud that Isolde followed Jeremy.’

In contrast, the pattern for the *wobei*-paraphrase is exactly opposite: the sentence containing *hörbar* does not allow this paraphrase, cf. (26), whereas the sentence containing *laut* does allow this paraphrase, cf. (27).

- (26) a. Fritz hat Isolde **hörbar** verfolgt.
‘Fritz audibly followed Isolde.’
b. ??Fritz hat Isolde verfolgt, wobei er hörbar war. ($\not\approx$ a)
‘Fritz followed Isolde. In doing that, he was audible.’

- (27) a. Fritz hat Isolde **laut** verfolgt.
‘Fritz loudly followed Isolde.’
b. Fritz hat Isolde verfolgt, wobei er laut war. (\approx a)
‘Fritz followed Isolde. In doing that, he was loud.’

In general, *hörbar* ‘audibly’ cannot appear in copula-constructions where the subject denotes a person, cf. (28).²

- (28) ??Peter ist **hörbar**.
Peter is audible

In contrast, this is possible for *laut* ‘loud/loudly’, cf. (29).

- (29) Peter ist **laut**.
Peter is loud

Even in its non-associative usage *hörbar* ‘audibly’, the paraphrases available pattern with the evaluatives and not with the manner adverbials, cf. (30).

- (30) a. Kiri singt **hörbar**.
Kiri sings audibly
b. Es ist hörbar, daß Kiri singt (\approx a)
It is audible that Kiri sings.
c. Wie Kiri singt, das ist hörbar. ($\not\approx$ a)
The manner in which Kiri sings is audible.

The reasons for this pattern with *hörbar* are not exactly clear. It should be taken as evidence that there is much more to be said about the paraphrase that I used for the evaluative usages. Intuitively, it does not seem plausible that *hörbar* is an evaluative, that is, a speaker-oriented adverbial, which can be taken to assert a property of a fact or a proposition (cf. the remarks in section 3.3.5).

Cresswell’s formal representation In his formal representations, Cresswell uses the predicate-modifier approach (cf. the discussion in section 2.2.2). In order to deal with associative readings within this approach, Cresswell introduces a special operator that ensures that not the preceding as such is audible, but rather some attendant activity is audible. His formalization of (18) is given in (31).

- (31) Isolde audibly precedes Jeremy.
 $\langle \text{Isolde}, \langle \langle \text{ASS}, \text{audibly} \rangle, \langle \lambda, x, \langle \text{precede}, x, \text{Jeremy} \rangle \rangle \rangle \rangle$
= (8) in Cresswell (1985, p. 188)

The symbol ASS has the following value assignment:

²This contrasts with the behaviour of *visible/invisible*. This difference in behaviour is due to the physical properties of humans and things in general. Intuitively, humans and atoms etc. are either visible or invisible, but are not by themselves either audible or inaudible.

- (32) $V(ASS)$ is the function η in $D_{\langle\langle\langle 0,1 \rangle, \langle 0,1 \rangle \rangle, \langle\langle 0,1 \rangle, \langle 0,1 \rangle \rangle\rangle}$ such that where $\zeta \in D_{\langle\langle 0,1 \rangle, \langle 0,1 \rangle \rangle}$, $\omega \in D_{\langle 0,1 \rangle}$, $a \in D_1$, and $\langle w, t \rangle \in W$:
 $\langle w, t \rangle \in ((\eta(\zeta))(\omega))(a)$ iff $\langle w, t \rangle \in \omega(a)$, and there is some $\omega' \in D_{\langle 0,1 \rangle}$ such that $\langle w, t \rangle \in (\zeta(\omega'))(a)$.
 Cf. Cresswell (1985, p. 187); Cresswell's $\langle 0, 1 \rangle$ corresponds in other approaches to $\langle t, e \rangle$

In Cresswell's approach, the semantic composition of the sentence proceeds as given in figure 7.1.

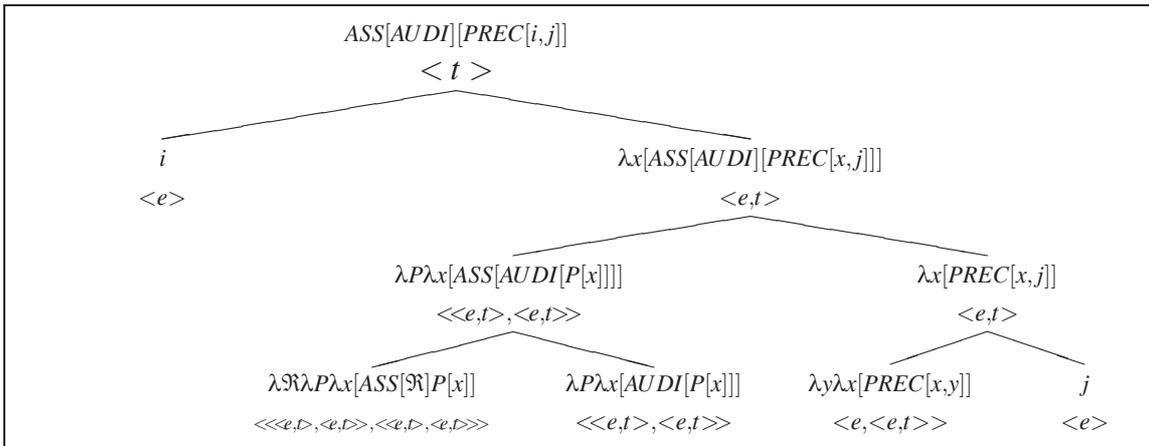


Figure 7.1

Two points are noteworthy in this connection. Firstly, Cresswell gives no principled reason for the application of the operator (e.g. no type coercion or general principle of insertion). Secondly, and perhaps more significantly, it is not clear why the operator is applied to the adverb and not to the verbal predicate. After all, the activity that is modified is associated with the verbal predicate while the relation between adverb and this activity is straightforward.

Cresswell (1985) himself comments on the first observation by saying that:

The introduction of a symbol like *ASS* of course does allow quite a number of separate structures, and predicts at least the possibility of ambiguity. I tend myself to adopt a considerably more liberal attitude to ambiguity than most do, particularly linguists, but if it turns out that certain verbs go with *only* the associative reading, and others only with the strictly causative reading, then one would like to find some mechanism which would display this in such a way as to rule out the ambiguity [SIC]. (p. 189)

7.3.3 Eckardt

Eckardt (1998, chapter 5) discusses four pairs of sentences which, according to her, differ in whether a big or a small event is modified. Two of these pairs contain adverbs

as modifiers, cf. (33) and (34).

- (33) a. Alma **quickly** sliced each bagel.
 b. Alma sliced each bagel **quickly**.
 = (2) in Eckardt (1998, p. 116)
- (34) a. Clara **carefully** picked each worm out of the salad.
 b. Clara picked each worm **carefully** out of the salad.
 = (3) in Eckardt (1998, p. 116)

For both sentence pairs, the English equivalent of the *wobei*-paraphrase is preferably used for the a-sentence, cf. (35) for (33-a).

- (35) a. Alma **quickly** sliced each bagel.
 b. Alma sliced each bagel. In doing that, she was quick. (\approx a)

Eckardt does not use this paraphrase, but comments that “The (a) examples intuitively involve modification of some big event object where more than one thing happens. The (b) examples, on the other hand, modify small event objects.”

Eckardt’s formal representation of (33-a) is given in (36) (The representation for (34-a) is similar).

- (36) $\exists e^*(QUICK(e^*) \ \& \ \forall x(BAGEL(x) \rightarrow \exists e(SLICE(A,x,e) \ \& \ e < e^*)))$
 = (2) in Eckardt (1998, p. 124)

Eckardt uses e^* to refer to big events, and $e < e^*$ means that e is part of e^* .

Eckardt’s derivation of formal representations like (36), which she refers to as wide scope modification, is based on the following assumptions (cf. the list on page 123 in Eckardt 1998):

1. Sentences are generated with VP internal subjects.
2. Unselective existential closure takes place for the first time at VP, covering all free referential variables inside the VP.
3. All NPs containing quantification have to undergo raising at the level of logical form and therefore before the sentence is interpreted.

One consequence of the three clauses is that the event variable introduced by the verb will always be existentially bound during the process of unselective binding at the level of VP. To introduce the big events into the derivation, Eckardt (1998) suggests the following:

Before existential closure of the verbal event parameter e takes place, a clause is added to the sentence representation reached so far, which states that e is part of another event e^* .[...] We assume that the new variable e^* is not captured by the subsequent existential closure. (p. 123)

Eckardt (1998) assumes that “the introduction of e^* is obligatory for cases where wide scope modification actually takes place, and optional else” (p. 124). This is perhaps

the weakest point in Eckardt's account, since we do not know at the level of unselective existential closure at the VP whether the sentence will in the end turn out to contain wide scope modification or not. We must, however, know this in order to insert the clause introducing the big event.

I think that the basic intuition behind Eckardt's formal representation is correct, namely that we must assume two separate events in order to capture the meaning of sentences like (33-a) and (34-a). I disagree with Eckardt in that I do not believe that the reasons for the wide scope readings are the quantified noun phrases. In my view, Eckardt's wide scope readings are associative readings. The quantified noun phrases simply enhance the contrast between associative and non-associative readings.

7.3.4 Engelberg

Engelberg (2000*b*) notes that different adverbial modifiers lead to different inference patterns. His original examples are given here as (37) and (38), where the modifiers are both times prepositional phrases. For the purposes of this work, I exchanged the prepositional phrases with semantically similar adjectives. The observed pattern is the same, cf. (39) and (40).

- (37) a. Otto fuhr den Wagen **mit großer Vorsicht**. (\rightarrow b, $\not\rightarrow$ c)
 Otto drove the car with great care
 'Otto was driving the car with great care.'
 b. Otto bediente/steuerte den Wagen mit großer Vorsicht.
 'Otto worked/steered the car with great care.'
 c. Der Wagen bewegte sich mit großer Vorsicht.
 'The car was moving with great care.'
 Cf. (17) in Engelberg (2000*b*, p. 49)
- (38) a. Otto fuhr den Wagen **mit Höchstgeschwindigkeit**. ($\not\rightarrow$ b, \rightarrow c)
 Otto drove the car with highest speed
 'Otto was driving the car at highest speed.'
 b. Otto bediente/steuerte den Wagen mit Höchstgeschwindigkeit.
 'Otto worked/steered the car at highest speed.'
 c. Der Wagen bewegte sich mit Höchstgeschwindigkeit.
 'The car was moving at highest speed.'
 Cf. (18) in Engelberg (2000*b*, p. 50) and (2.b) in Engelberg (2000*a*)
- (39) a. Otto fuhr den Wagen **vorsichtig**. (\rightarrow b, $\not\rightarrow$ c)
 Otto drove the car carefully
 b. Otto bediente/steuerte den Wagen vorsichtig.
 'Otto worked/steered the car carefully.'
 c. Der Wagen bewegte sich vorsichtig.
 'The car was moving carefully.'

- (40) a. Otto fuhr den Wagen **schnell**. ($\not\rightarrow$ b, \rightarrow c)
 Otto drove the car quickly
 ‘Otto drove quickly.’
 b. Otto bediente/steuerte den Wagen schnell.
 ‘Otto worked/steered the car quickly.’
 c. Der Wagen bewegte sich schnell.
 ‘The car moved quickly.’

This difference in inference patterns points to a difference in readings, namely that *vorsichtig* receives an associative reading while *schnell* is interpreted non-associatively. This is confirmed by the behaviour of the two sentences with regard to the *wobei*-paraphrase, cf. (41) and (42).

- (41) a. Otto fuhr den Wagen **vorsichtig**.
 Otto drove the car carefully
 b. Otto fuhr den Wagen, wobei er vorsichtig war. (\approx a)
 ‘Otto drove the car, in doing so, he was careful.’
 (42) a. Otto fuhr den Wagen **schnell**.
 Otto drove the car quickly
 b. Otto fuhr den Wagen, wobei er schnell war. ($\not\approx$ a)
 ‘Otto drove the car, in doing so, he was quick.’

Engelberg explains his data by resorting to a more complex event structure. He assumes that verbs refer to structured events. The lexical event-structure (LES) for *fahren* is given in (43).

- (43) a. *fahren*: x^{nom}, y^{acc}
 b. LES: $(\rightarrow_I e^{1[+DUR]} : x^{AGENT}, y^{PATIENT}) \langle \rangle (\rightarrow_I e^{2[+DUR]} : y^{PATIENT})$
 = (16) in Engelberg (2000a), cf. Lex. 2 in Engelberg (2000b, p. 32)

The subscript *I* over the implication symbols means that the subevents are entailed but not presupposed by the open proposition that constitutes the verb’s meaning, and the symbol $\langle \rangle$ indicates that the two subevents occur simultaneously. In the derivational process, the two entailments given in the lexical event structure can be activated when needed and are represented as meaning postulates.

Engelberg does not give explicit derivations for these example sentences, and it is not clear how he could derive the sentence meanings compositionally. A second problem for his approach might concern the fact that the lexical event structure is already hard-coded into the lexical entry. To see this, consider (44).

- (44) Otto fuhr den Wagen **umsichtig** und **vorsichtig**.
 Otto drove the car circumspectly and carefully

This sentence allows the same inference as (39), but in addition it allows the inference in (45).

- (45) Otto steuert den Wagen **umsichtig**.
 Otto steers the car circumspectly

It does not, however, allow the inference (46).

- (46) Otto bedient den Wagen **umsichtig**.
 Otto works the car circumspectly

Apparently, the lexical event structure for *fahren* ‘drive’ must contain at least three separate events, and probably additional events for yet other modifiers. Such problems will be circumvented by the underspecified approach presented in section 7.4.

7.3.5 Summary

The discussion of the four authors has shown that the group of adverbials allowing the *wobei*-paraphrase is not as homogeneous as first thought. This can be seen most clearly by a direct comparison of the following three sentences, cf. (47), (48) and (49).

- (47) Otto fuhr den Wagen **vorsichtig**.
 Otto drove the care carefully
- (48) Alma **quickly** sliced each bagel.
- (49) Isolde hat **laut** Jeremy verfolgt.
 Isolde has loudly Jeremy followed.
 ‘Isolde loudly followed Jeremy.’

As was shown in the sections above, all three sentences can be paraphrased using the *wobei*-paraphrase. In turn, all three are best explained by making reference to at least two different events. The relationships between these two events can, however, be of many different kinds.

As Engelberg has shown, (47) implies (50).

- (50) Otto steuerte/bediente den Wagen **vorsichtig**.
 Otto steered/worked the car carefully

If we, for the purpose of exemplification, consider only the relationship between the driving and the steering event, it appears that the steering is associated with the driving in that it is part of the driving event. This can also be seen by looking at the relationship between (51) and (52).

- (51) Otto fuhr den Wagen.
 Otto drove the car
- (52) Otto steuerte den Wagen.
 Otto steered the car

Example (51) semantically entails (52), but (52) does not semantically entail (51). The entailment from (52) to (51) does not work because it can be the case that e.g. the person steering and the person shifting the gears are not identical. In such a circumstance, neither of the two persons can be said to drive the car.

For the example sentence (48) discussed by Eckardt, the the two events are connected by a part-of-relationship. That is, the slicing event is part of a bigger event e^* which includes at least the individual slicings and perhaps more (e.g. events happening in between the individual slicings etc.).

Sentence (49) does appear to contain an associated reading in the sense of Cresswell as he originally introduced with his associative senses. That is, if we interpret the sentence against the background of a situation where the loudness of the following is caused by Isolde singing while following Jeremy, then the relationship between the singing event and the following event is such that neither the singing includes the following nor does the following include the singing.

It seems thus that these three different types of sentences allowing the *wobei*- respectively the *in doing so*-paraphrases brought us a considerable bit closer to what it means to be paraphrasable in this way, or better, what it means to have an associative reading: besides the event described by the verbal predicate, there must be a second, distinct event. It is this second event which is specified by adverbials with associative readings. The exact relationship between these two events, as evidenced by the three examples discussed above, can vary to a great degree.

This heterogeneity in the group of associative readings can be best captured with the help of an approach using underspecification. In the following section, I will therefore introduce such an approach, and show how it can be used to derive the associative reading of (49).

7.4 A formal approach to associative readings

7.4.1 Introduction

The previous section has shown that an adverbial with an associative reading is best represented as predicating of an event that is not identical to the event predicated of by the verbal predicate. The representation of (53) should therefore look like (54).

(53) Isolde hat laut Jeremy verfolgt.
Isolde has loudly Jeremy followed
'Isolde loudly followed Jeremy.'

(54) $\exists e_1 [SUBJ(i, e_1) \ \& \ OBJ(j, e_1) \ \& \ FOLLOW(e_1)$
 $\ \& \ \exists e_2 [ASSOC(e_2, e_1) \ \& \ LOUD(e_2)]]$

The sentence (53) is, as shown in (54), understood as referring to two separate events. The event e_1 is a following, and the event e_2 an activity which is connected to e_1 via the relation ASSOC, indicating that it is associated. In other words, the two events

are connected in some way that exceeds mere temporal overlap. This representation cannot be derived by using the standard representation of manner adverbials in event semantics, which yields the representation in (55).

$$(55) \quad \exists e[SUBJ(i, e) \ \& \ OBJECT(j, e) \ \& \ FOLLOW(e) \ \& \ LOUD(e)]$$

Before going into the details of the derivations, it is useful to introduce some operators that are needed in the derivations of the standard interpretation, as well as in the derivation using the underspecified approach presented below.

I will use an Neo-Davidsonian representation format. Lexical entries for verbs are represented as one-place predicates, cf. (56) for *folgen* ‘follow’.

$$(56) \quad \lambda x[FOLLOW(x)]$$

Arguments of the verbs are added through the use of operators. The external argument, for example, is introduced with the help of (57).

$$(57) \quad \text{SUBJ} \\ \lambda P \lambda y \lambda x [SUBJ(y, x) \ \& \ P(x)] \\ \text{Cf. (18) in Dölling (2003)}^3$$

Internal arguments are introduced similarly, cf. (58).

$$(58) \quad \text{OBJ} \\ \lambda P \lambda y \lambda x [OBJ(y, x) \ \& \ P(x)]$$

Adverbial adjectives are introduced by using the operator MOD, given in (59), to turn the one-place predicate representing the lexical entry of the adjective into a modifier (for this operator, cf. e.g. Dölling (2003)).

$$(59) \quad \text{Operator MOD} \\ \lambda Q \lambda P \lambda x [P(x) \ \& \ Q(x)] \\ \langle \langle e, t \rangle, \langle \langle e, t \rangle, \langle e, t \rangle \rangle \rangle$$

Thus, the adjective *laut* with the SF given in (60) has the SF given in (61) when it is used adverbially.

$$(60) \quad \lambda x[LOUD(x)] \\ (61) \quad \lambda P \lambda x [P(x) \ \& \ LOUD(x)]$$

These operators allow the derivation of (55), cf. (62).

$$(62) \quad \text{a. SF of } folgen \\ \lambda x[FOLLOW(x)]$$

³Dölling (2003) assumes a slightly different template, cf. (69).

- b. Application of the operator OBJ
- (i) $\lambda P \lambda y \lambda x [OBJ(y, x) \& P(x)] (\lambda x [FOLLOW(x)])$
 - (ii) $\lambda y \lambda x [OBJ(y, x) \& (\lambda x [FOLLOW(x)])(x)]$
 - (iii) $\lambda y \lambda x [OBJ(y, x) \& FOLLOW(x)]$
- c. λ -conversion with *Jeremy*
- (i) $\lambda y \lambda x [OBJ(y, x) \& FOLLOW(x)](j)$
 - (ii) $\lambda x [OBJ(j, x) \& FOLLOW(x)]$
- d. Application of the SF of the AA *loud*
- (i) $\lambda P \lambda x [P(x) \& LOUD(x)] (\lambda x [OBJ(j, x) \& FOLLOW(x)])$
 - (ii) $\lambda x [(\lambda x [OBJ(j, x) \& FOLLOW(x)])(x) \& LOUD(x)]$
 - (iii) $\lambda x [OBJ(j, x) \& FOLLOW(x) \& LOUD(x)]$
- e. Application of the operator SUBJ
- (i) $\lambda P \lambda y \lambda x [SUBJ(y, x) \& P(x)] (\lambda x [OBJ(j, x) \& FOLLOW(x) \& LOUD(x)])$
 - (ii) $\lambda y \lambda x [SUBJ(y, x) \& (\lambda x [OBJ(j, x) \& FOLLOW(x) \& LOUD(x)])(x)]$
 - (iii) $\lambda y \lambda x [SUBJ(y, x) \& OBJ(j, x) \& FOLLOW(x) \& LOUD(x)]$
- f. λ -conversion with *Isolde*
- (i) $\lambda y \lambda x [SUBJ(y, x) \& OBJ(j, x) \& FOLLOW(x) \& LOUD(x)](i)$
 - (ii) $\lambda x [SUBJ(i, x) \& OBJ(j, x) \& FOLLOW(x) \& LOUD(x)]$

In contrast, to derive the representation in (54), an additional operator is needed, cf. e.g. the operator ASSOCIATIVE MOD in (63), a variant of the MOD operator that introduces an additional event of which the adjective is predicated.

- (63) Operator ASSOCIATIVE MOD
 $\lambda Q \lambda P \lambda e_1 [P(e_1) \& \exists e_2 [ASSOC(e_2, e_1) \& Q(e_2)]]$
 $\langle \langle e, t \rangle \langle \langle e, t \rangle, \langle e, t \rangle \rangle \rangle$

The derivation of (54) is given in (64).

- (64) a. SF of *follow Jeremy*
 $\lambda x [OBJ(j, x) \& FOLLOW(x)]$
- b. Application of the operator ASSOCIATIVE MOD to the SF of the adjective *loud*
- (i) $\lambda Q \lambda P \lambda e_1 [P(e_1) \& \exists e_2 [ASSOC(e_2, e_1) \& Q(e_2)]]$
 $(\lambda x [LOUD(x)])$
 - (ii) $\lambda P \lambda e_1 [P(e_1) \& \exists e_2 [ASSOC(e_2, e_1) \& (\lambda x [LOUD(x)])(e_2)]]$
 - (iii) $\lambda P \lambda e_1 [P(e_1) \& \exists e_2 [ASSOC(e_2, e_1) \& LOUD(e_2)]]$
- c. Application of the SF in (64-b-iii) to the SF of *follow Jeremy*
- (i) $\lambda P \lambda e_1 [P(e_1) \& \exists e_2 [ASSOC(e_2, e_1) \& LOUD(e_2)]]$
 $(\lambda x [OBJ(j, x) \& FOLLOW(x)])$
 - (ii) $\lambda e_1 [(\lambda x [OBJ(j, x) \& FOLLOW(x)])(e_1) \& \exists e_2 [ASSOC(e_2, e_1) \& LOUD(e_2)]]$
 - (iii) $\lambda e_1 [OBJ(j, e_1) \& FOLLOW(e_1) \& \exists e_2 [ASSOC(e_2, e_1) \& LOUD(e_2)]]$
- d. Application of the operator SUBJ

- (i) $\lambda P \lambda y \lambda x [SUBJ(y, x) \& P(x)]$
 $(\lambda e_1 [OBJ(j, e_1) \& FOLLOW(e_1) \&$
 $\exists e_2 [ASSOC(e_2, e_1) \& LOUD(e_2)])]$
- (ii) $\lambda y \lambda x [SUBJ(y, x) \& (\lambda e_1 [OBJ(j, e_1) \& FOLLOW(e_1) \&$
 $\exists e_2 [ASSOC(e_2, e_1) \& LOUD(e_2)])](x)]$
- (iii) $\lambda y \lambda x [SUBJ(y, x) \& OBJ(j, x) \& FOLLOW(x)$
 $\& \exists e_2 [ASSOC(e_2, x) \& LOUD(e_2)]]$
- e. λ -conversion with *Isolde*
 - (i) $\lambda y \lambda x [SUBJ(y, x) \& OBJ(j, x) \& FOLLOW(x)$
 $\& \exists e_2 [ASSOC(e_2, x) \& LOUD(e_2)]](i)$
 - (ii) $\lambda x [SUBJ(i, x) \& OBJ(j, x) \& FOLLOW(x)$
 $\& \exists e_2 [ASSOC(e_2, x) \& LOUD(e_2)]]$

The problem with this way of deriving the representation of the sentence is that the introduction of the operator ASSOC into the derivational process is wholly arbitrary. The sentence (1) is grammatically well-formed, so there are no syntactic reasons for using a special semantic operator. Similarly, the sentence is semantically well-formed; that is, it does not present a semantic anomaly. The only ‘reason’ for the introduction of the operator is to arrive at the interpretation of the sentence given (54).

To derive this sentence meaning without resorting to arbitrary operator introductions, a system based on underspecification is needed. I will introduce one such system in the next section and then show how it can be used to derive the sentence meaning under discussion.

7.4.2 An underspecified framework

In a Neo-Davidsonian framework, the derivation of associative readings is possible by the usage of an underspecified approach. I will demonstrate this using the approach proposed in Dölling (2003).⁴ Dölling assumes a multi-level model of representation, which consists of three levels: the level of the *basic semantic form* (SF_B), the level of the *inflected semantic Form* (SF_I) and the level of the *parameter-fixed structure* (PFS). The SF_Bs are put together compositionally to yield the SF_I of a given sentence. This process includes the automatic application of specific templates and operators after each compositional step. Finally, the free parameters contained in the inflected SF are fixed, using all accessible information (that is, pragmatics, world knowledge etc., c.f. the abductive framework described in Hobbs, Stickel, Appelt & Martin (1993)) to derive the PFS. Parameters that remain unspecified after the usage of abductive reasoning are specified by using default values.

More specifically, the free parameters are introduced into the semantic form with the help of the operator *met*⁵, given in (65).

⁴Cf. also Dölling (2005), which contains a further development of this approach.

⁵The operator *met* is a variant of the operator *met* as introduced in Dölling (2000). The original version of the operator, which is designed to capture metaphoric and metonymic meaning change, con-

- (65) Operator met''
 $\lambda P \lambda x. \exists y [R_n^2(y, x) \ \& \ Q_n z [R_n^1(z, y) \ C_n \ P(z)]]$
 $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$

The application of the operator met'' is regulated by the condition given in (66).

- (66) $SF_B(\alpha)$ of type $\langle e, t \rangle$ has to be transferred to $SF_I(\alpha)$ such that holds:
 $SF_I(\alpha) = \text{met}''(SF_B(\alpha))$
 = (14) in Dölling (2003)

The SF_I of an expression is then converted to its PFS. Constraints on the specification of the SF_I are given in (67).

- (67) $SF_I(\alpha)$ can be specified to $PFS(\alpha)$ as follows:
 a. Q_n and C_n in $SF_I(\alpha)$ are fixed by \exists and $\&$ or by \forall and \rightarrow , respectively.
 b. R_n in $SF_I(\alpha)$ is fixed by $=$ or by some other general relation holding between elements of two ontologically distinct sorts.
 c. in the default case, Q_n , C_n and R_n are fixed by \exists , $\&$ and $=$, respectively
 = (15) in Dölling (2003)

As already mentioned in the previous section, the SUBJ respective OBJ operators that Dölling (2003) uses slightly differ from the ones introduced there, cf. (68) and (69).

- (68) Operator SUBJ
 $\lambda P \lambda y \lambda x [\theta(y, x) \ \& \ P(x)]$
 = (18) in Dölling (2003)
- (69) Operator OBJ
 $\lambda P \lambda y \lambda x [\theta(y, x) \ \& \ P(x)]$

The symbol θ is used as a parameter for thematic roles, which are specified at the level of the PFS.

7.4.3 The derivation in detail

With the formal machinery introduced in the previous section, it is now possible to derive (1), repeated here as (70), with *laut* having an associative reading.

- (70) Isolde hat laut Jeremy verfolgt.
 Isolde has loudly Jeremy followed
 'Isolde loudly followed Jeremy.'

An outline of the derivation is given in 7.2.

sists of an additional free parameter for a relation and two additional parameters for predicates of sorts of entities.

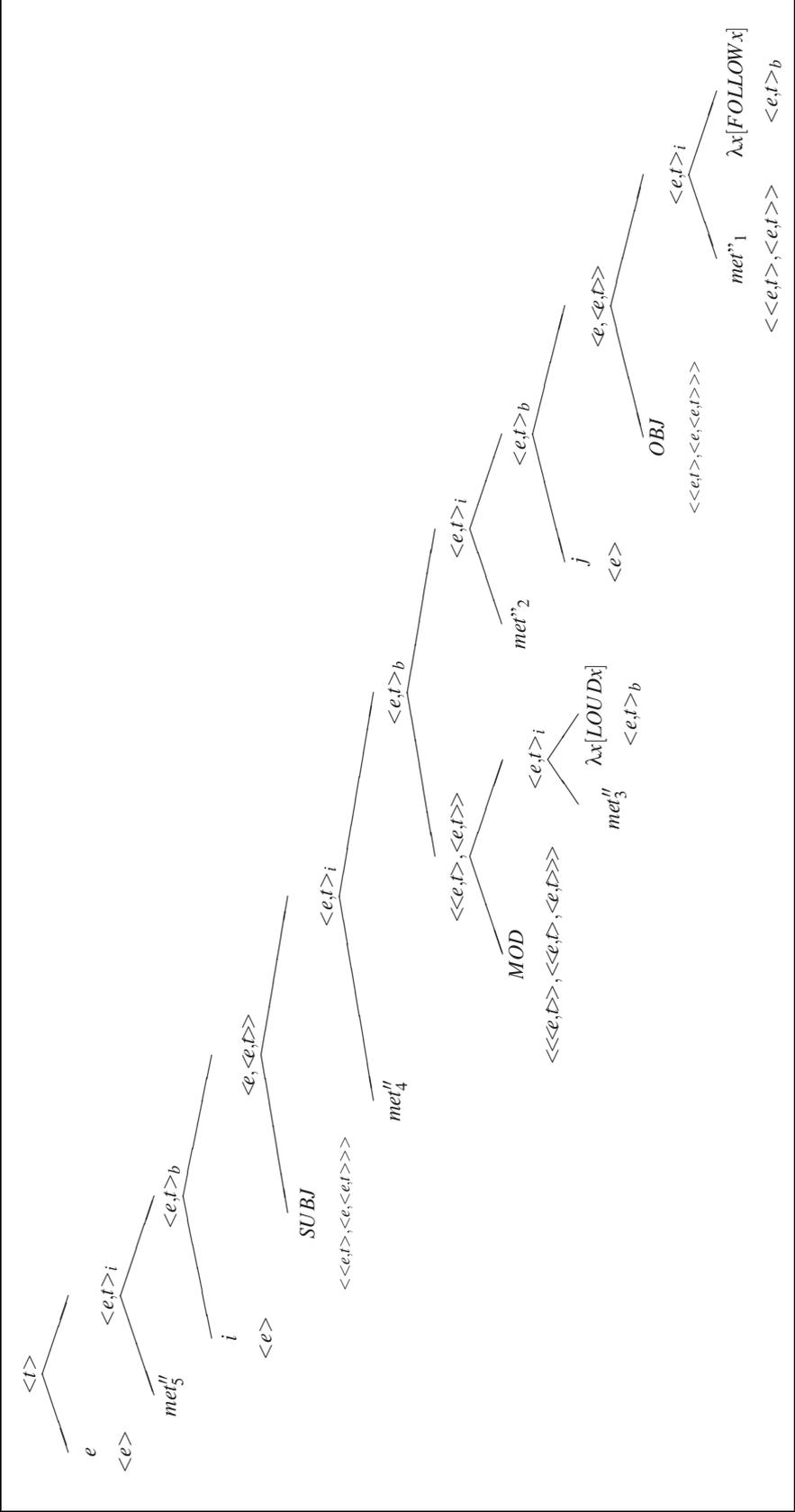


Figure 7.2: Simplified Outline of a SF_J buildup

The main purpose of this outline is to show the basic combinatorial process and, more specifically, the way in which this combinatorial process leads to the automatic insertion of the operator met” into the semantic form. The lexical material being used in the compositional process is the lexical entry of the verb *folgen* ‘follow’, cf. (71) and the lexical entry for the adjective *laut* ‘loudly’, cf. (60).

$$(71) \quad \lambda x[FOLLOW(x)]$$

The event variable e , and the two names *Isolde* and *Jeremy* are all treated as individual terms of type $\langle e \rangle$. The compositional process starts at the right hand bottom of the tree with the basic semantic form of the verb. As it is of the type $\langle e, t \rangle$, the operator met” is applied, following the rule given in (66). To indicate when a given SF of type $\langle e, t \rangle$ is a basic or an inflected SF, the subscripts i and b are used.

A step by step derivation is given below.

$$(72) \quad \text{SF of } folgen \text{ ‘follow’}$$

$$\lambda x[FOLLOW(x)]$$

(73) Application of the operator met” (first application)

1. $\lambda P \lambda x. \exists y [R_1^2(y, x) \ \& \ Q_{1z} [R_1^1(z, y) \ C_1 \ P(z)]] \ (\lambda x[FOLLOW(x)])$
2. $\lambda x. \exists y [R_1^2(y, x) \ \& \ Q_{1z} [R_1^1(z, y) \ C_1 \ (\lambda x[FOLLOW(x))](z)]]$
3. $\lambda x. \exists y [R_1^2(y, x) \ \& \ Q_{1z} [R_1^1(z, y) \ C_1 \ FOLLOW(z)]]$

(74) Application of the operator OBJ

1. $\lambda P \lambda y \lambda x [\theta_1(y, x) \ \& \ P(x)] \ (\lambda x. \exists y [R_1^2(y, x) \ \& \ Q_{1z} [R_1^1(z, y) \ C_1 \ FOLLOW(z)]]]$
2. $\lambda y \lambda x [\theta_1(y, x) \ \& \ (\lambda x. \exists y [R_1^2(y, x) \ \& \ Q_{1z} [R_1^1(z, y) \ C_1 \ FOLLOW(z)]])(x)]$
3. $\lambda y \lambda x [\theta_1(y, x) \ \& \ \exists y [R_1^2(y, x) \ \& \ Q_{1z} [R_1^1(z, y) \ C_1 \ FOLLOW(z)]]]$

(75) λ - Conversion with *jeremy*

1. $\lambda y \lambda x [\theta_1(y, x) \ \& \ \exists y [R_1^2(y, x) \ \& \ Q_{1z} [R_1^1(z, y) \ C_1 \ FOLLOW(z)]]] \ (j)$
2. $\lambda x [\theta_1(j, x) \ \& \ \exists y [R_1^2(y, x) \ \& \ Q_{1z} [R_1^1(z, y) \ C_1 \ FOLLOW(z)]]]$

(76) Application of the operator met” (second application)

1. $\lambda P \lambda u [\exists v [R_2^2(v, u) \ \& \ Q_{2w} [R_2^1(w, v) \ C_2 \ P(w)]]]$
 $(\lambda x [\theta_1(j, x) \ \& \ \exists y [R_1^2(y, x) \ \& \ Q_{1z} [R_1^1(z, y) \ C_1 \ FOLLOW(z)]]])$
2. $\lambda u [\exists v [R_2^2(v, u) \ \& \ Q_{2w} [R_2^1(w, v) \ C_2$
 $(\lambda x [\theta_1(j, x) \ \& \ \exists y [R_1^2(y, x) \ \& \ Q_{1z} [R_1^1(z, y) \ C_1 \ FOLLOW(z)]])(w)]]]$
3. $\lambda u [\exists v [R_2^2(v, u) \ \& \ Q_{2w} [R_2^1(w, v) \ C_2$
 $\theta_1(j, w) \ \& \ \exists y [R_1^2(y, w) \ \& \ Q_{1z} [R_1^1(z, y) \ C_1 \ FOLLOW(z)]]]]]$

$$(77) \quad \text{SF of } laut \text{ ‘loudly’}$$

$$\lambda x[LOUD(x)]$$

(78) Application of the operator met” (third application)

1. $\lambda P \lambda r [\exists s [R_3^2(s, r) \ \& \ Q_{3t} [R_3^1(t, s) \ C_3 \ P(t)]]] \ (\lambda x[LOUD(x)])$
2. $\lambda r [\exists s [R_3^2(s, r) \ \& \ Q_{3t} [R_3^1(t, s) \ C_3 \ (\lambda x[LOUD(x))](t)]]]$
3. $\lambda r [\exists s [R_3^2(s, r) \ \& \ Q_{3t} [R_3^1(t, s) \ C_3 \ LOUD(t)]]]$

- (79) Application of the operator MOD
1. $\lambda Q\lambda P\lambda x[P(x) \& Q(x)] (\lambda r[\exists s [R_3^2(s,r) \& Q_3t [R_3^1(t,s) C_3 LOUD(t)]]])$
 2. $\lambda P\lambda x[P(x) \& (\lambda r[\exists s [R_3^2(s,r) \& Q_3t [R_3^1(t,s) C_3 LOUD(t)]])](x)]$
 3. $\lambda P\lambda x[P(x) \& \exists s [R_3^2(s,x) \& Q_3t [R_3^1(t,s) C_3 LOUD(t)]]]$
- (80) Application of the SF of *laut* to the SF of *verfolgt Jeremy*
1. $\lambda P\lambda x[P(x) \& \exists s [R_3^2(s,x) \& Q_3t [R_3^1(t,s) C_3 LOUD(t)]]$
 $(\lambda u[\exists v [R_2^2(v,u) \& Q_2w [R_2^1(w,v) C_2$
 $\theta_1(j,w) \& \exists y [R_1^2(y,w) \& Q_1z [R_1^1(z,y) C_1 FOLLOW(z)]]]])$
 2. $\lambda x[(\lambda u[\exists v [R_2^2(v,u) \& Q_2w [R_2^1(w,v) C_2$
 $\theta_1(j,w) \& \exists y [R_1^2(y,w) \& Q_1z [R_1^1(z,y) C_1 FOLLOW(z)]]]])$
 $\& \exists s [R_3^2(s,x) \& Q_3t [R_3^1(t,s) C_3 LOUD(t)]]]$
 3. $\lambda x[\exists v [R_2^2(v,x) \& Q_2w [R_2^1(w,v) C_2$
 $\theta_1(j,w) \& \exists y [R_1^2(y,w) \& Q_1z [R_1^1(z,y) C_1 FOLLOW(z)]]]$
 $\& \exists s [R_3^2(s,x) \& Q_3t [R_3^1(t,s) C_3 LOUD(t)]]]$
- (81) Application of met'' (fourth application)
1. $\lambda P\lambda o[\exists p [R_4^2(p,o) \& Q_4q [R_4^1(q,p) C_4 P(q)]]]$
 $(\lambda x[\exists v [R_2^2(v,x) \& Q_2w [R_2^1(w,v) C_2$
 $\theta_1(j,w) \& \exists y [R_1^2(y,w) \& Q_1z [R_1^1(z,y) C_1 FOLLOW(z)]]]$
 $\& \exists s [R_3^2(s,x) \& Q_3t [R_3^1(t,s) C_3 LOUD(t)]]])$
 2. $\lambda o[\exists p [R_4^2(p,o) \& Q_4q [R_4^1(q,p)$
 $C_4 (\lambda x[\exists v [R_2^2(v,x) \& Q_2w [R_2^1(w,v) C_2$
 $\theta_1(j,w) \& \exists y [R_1^2(y,w) \& Q_1z [R_1^1(z,y) C_1 FOLLOW(z)]]]$
 $\& \exists s [R_3^2(s,x) \& Q_3t [R_3^1(t,s) C_3 LOUD(t)]]])](q)]]]$
 3. $\lambda o[\exists p [R_4^2(p,o) \& Q_4q [R_4^1(q,p)$
 $C_4 \exists v [R_2^2(v,q) \& Q_2w [R_2^1(w,v) C_2$
 $\theta_1(j,w) \& \exists y [R_1^2(y,w) \& Q_1z [R_1^1(z,y) C_1 FOLLOW(z)]]]$
 $\& \exists s [R_3^2(s,x) \& Q_3t [R_3^1(t,s) C_3 LOUD(t)]]]]]$
- (82) Application of the operator SUBJ
1. $\lambda P\lambda y\lambda x[\theta_2(y,x) \& P(x)]$
 $(\lambda o[\exists p [R_4^2(p,o) \& Q_4q [R_4^1(q,p)$
 $C_4 \exists v [R_2^2(v,q) \& Q_2w [R_2^1(w,v) C_2$
 $\theta_1(j,w) \& \exists y [R_1^2(y,w) \& Q_1z [R_1^1(z,y) C_1 FOLLOW(z)]]]$
 $\& \exists s [R_3^2(s,x) \& Q_3t [R_3^1(t,s) C_3 LOUD(t)]]]])$
 2. $\lambda y\lambda x[\theta_2(y,x) \&$
 $(\lambda o[\exists p [R_4^2(p,o) \& Q_4q [R_4^1(q,p)$
 $C_4 \exists v [R_2^2(v,q) \& Q_2w [R_2^1(w,v) C_2$
 $\theta_1(j,w) \& \exists y [R_1^2(y,w) \& Q_1z [R_1^1(z,y) C_1 FOLLOW(z)]]]$
 $\& \exists s [R_3^2(s,x) \& Q_3t [R_3^1(t,s) C_3 LOUD(t)]]]])](x)]$
 3. $\lambda y\lambda x[\theta_2(y,x) \&$
 $\exists p [R_4^2(p,x) \& Q_4q [R_4^1(q,p)$
 $C_4 \exists v [R_2^2(v,q) \& Q_2w [R_2^1(w,v) C_2$

$$\begin{aligned} & \theta_1(j, w) \& \exists y [R_1^2(y, w) \& Q_{1z} [R_1^1(z, y) C_1 FOLLOW(z)]]] \\ & \& \exists s [R_3^2(s, x) \& Q_{3t} [R_3^1(t, s) C_3 LOUD(t)]]] \end{aligned}$$

(83) λ - Conversion with *isolde*

1. $\lambda y \lambda x [\theta_2(y, x) \& \exists p [R_4^2(p, x) \& Q_{4q} [R_4^1(q, p) C_4 \exists v [R_2^2(v, q) \& Q_{2w} [R_2^1(w, v) C_2 \theta_1(j, w) \& \exists y [R_1^2(y, w) \& Q_{1z} [R_1^1(z, y) C_1 FOLLOW(z)]]] \& \exists s [R_3^2(s, x) \& Q_{3t} [R_3^1(t, s) C_3 LOUD(t)]]]]]] (i)$
2. $\lambda x [\theta_2(i, x) \& \exists p [R_4^2(p, x) \& Q_{4q} [R_4^1(q, p) C_4 \exists v [R_2^2(v, q) \& Q_{2w} [R_2^1(w, v) C_2 \theta_1(j, w) \& \exists y [R_1^2(y, w) \& Q_{1z} [R_1^1(z, y) C_1 FOLLOW(z)]]] \& \exists s [R_3^2(s, x) \& Q_{3t} [R_3^1(t, s) C_3 LOUD(t)]]]]]$

(84) Application of met" (fifth application)

1. $\lambda P \lambda l [\exists m [R_5^2(m, l) \& Q_{5n} [R_5^1(n, m) C_5 P(n)]] (\lambda x [\theta_2(i, x) \& \exists p [R_4^2(p, x) \& Q_{4q} [R_4^1(q, p) C_4 \exists v [R_2^2(v, q) \& Q_{2w} [R_2^1(w, v) C_2 \theta_1(j, w) \& \exists y [R_1^2(y, w) \& Q_{1z} [R_1^1(z, y) C_1 FOLLOW(z)]]] \& \exists s [R_3^2(s, x) \& Q_{3t} [R_3^1(t, s) C_3 LOUD(t)]]]]]] (n)]]]$
2. $\lambda l [\exists m [R_5^2(m, l) \& Q_{5n} [R_5^1(n, m) C_5 (\lambda x [\theta_2(i, x) \& \exists p [R_4^2(p, x) \& Q_{4q} [R_4^1(q, p) C_4 \exists v [R_2^2(v, q) \& Q_{2w} [R_2^1(w, v) C_2 \theta_1(j, w) \& \exists y [R_1^2(y, w) \& Q_{1z} [R_1^1(z, y) C_1 FOLLOW(z)]]] \& \exists s [R_3^2(s, x) \& Q_{3t} [R_3^1(t, s) C_3 LOUD(t)]]]]]] (n)]]]$
3. $\lambda l [\exists m [R_5^2(m, l) \& Q_{5n} [R_5^1(n, m) C_5 \theta_2(i, n) \& \exists p [R_4^2(p, x) \& Q_{4q} [R_4^1(q, p) C_4 \exists v [R_2^2(v, q) \& Q_{2w} [R_2^1(w, v) C_2 \theta_1(j, w) \& \exists y [R_1^2(y, w) \& Q_{1z} [R_1^1(z, y) C_1 FOLLOW(z)]]] \& \exists s [R_3^2(s, x) \& Q_{3t} [R_3^1(t, s) C_3 LOUD(t)]]]]]]]$

(85) λ - Conversion with the event variable *e*

1. $\lambda l [\exists m [R_5^2(m, l) \& Q_{5n} [R_5^1(n, m) C_5 \theta_2(i, n) \& \exists p [R_4^2(p, x) \& Q_{4q} [R_4^1(q, p) C_4 \exists v [R_2^2(v, q) \& Q_{2w} [R_2^1(w, v) C_2 \theta_1(j, w) \& \exists y [R_1^2(y, w) \& Q_{1z} [R_1^1(z, y) C_1 FOLLOW(z)]]] \& \exists s [R_3^2(s, x) \& Q_{3t} [R_3^1(t, s) C_3 LOUD(t)]]]]]]] (e)$
2. $\exists m [R_5^2(m, e) \& Q_{5n} [R_5^1(n, m) C_5 \theta_2(i, n) \&$

$$\begin{aligned} & \exists p [R_4^2(p, x) \ \& \ Q_4q [R_4^1(q, p) \\ & C_4 \ \exists v [R_2^2(v, q) \ \& \ Q_2w [R_2^1(w, v) \ C_2 \\ & \theta_1(j, w) \ \& \ \exists y [R_1^2(y, w) \ \& \ Q_1z [R_1^1(z, y) \ C_1 \ FOLLO\!W(z)]]]] \\ & \ \& \ \exists s [R_3^2(s, x) \ \& \ Q_3t [R_3^1(t, s) \ C_3 \ LOUD(t)]]]]]] \end{aligned}$$

In the next step, the inflected SF must be converted into a parameter-fixed structure. The default PFS for (85), where the parameters are fixed according to (67-c), is given in (86).

(86) Default PFS for the SF_I of *Isolde hat laut Jeremy verfolgt*

$$\begin{aligned} & \exists m [= (m, e) \ \& \ \exists n [= (n, m) \ \& \\ & \theta_2(i, n) \ \& \\ & \exists p [= (p, x) \ \& \ \exists q [= (q, p) \\ & \ \& \ \exists v [= (v, q) \ \& \ \exists w [= (w, v) \ \& \\ & \theta_1(j, w) \ \& \ \exists y [= (y, w) \ \& \ \exists z [= (z, y) \ \& \ FOLLO\!W(z)]]]] \\ & \ \& \ \exists s [= (s, x) \ \& \ \exists t [= (t, s) \ \& \ LOUD(t)]]]]]] \end{aligned}$$

In particular, the identity relation holds in this PFS between the following variables: $m, e, n, p, q, s, t, v, w, y, z$. If we consistently substitute e for all the other variables, we arrive at (87). When we drop all identity conjuncts, we arrive at (88).

(87) Substitution of e for all variables in the identity relation to e

$$\begin{aligned} & \exists e [= (e, e) \ \& \ \exists e [= (e, e) \ \& \\ & \theta_2(i, e) \ \& \\ & \exists e [= (e, e) \ \& \ \exists e [= (e, e) \\ & \ \& \ \exists e [= (e, e) \ \& \ \exists e [= (e, e) \ \& \\ & \theta_1(j, e) \ \& \ \exists e [= (e, e) \ \& \ \exists e [= (e, e) \ \& \ FOLLO\!W(e)]]]] \\ & \ \& \ \exists e [= (e, e) \ \& \ \exists e [= (e, e) \ \& \ LOUD(e)]]]]]] \end{aligned}$$

(88) Simplification (= Dropping of all identity conjuncts and superfluous existential quantifiers)

$$\exists e [\theta_2(i, e) \ \& \ \theta_1(j, e) \ \& \ FOLLO\!W(e) \ \& \ LOUD(e)]$$

The two parameters for participant-relations can be specified with the help of SUBJ and OBJ as placeholders for those thematic relations which are usually associated with the respective cases, cf. (89).

(89) Final Default PFS

$$\exists e [SUBJ(i, e) \ \& \ OBJ(j, e) \ \& \ FOLLO\!W(e) \ \& \ LOUD(e)]$$

However, this default PFS is not an adequate PFS for sentence (1). A PFS that mirrors the intuitions concerning associative readings needs to be specified. This is shown in (90), where the free parameter R_3^2 is specified with the relation ASSOC, all other free

parameters with the identity relation.⁶

- (90) Fixing of the PFS that takes the associative reading into account
1. $\exists m [R_5^2(m, e) \ \& \ Q_5 n [R_5^1(n, m) \ C_5$
 $\theta_2(i, n) \ \&$
 $\exists p [R_4^2(p, x) \ \& \ Q_4 q [R_4^1(q, p)$
 $C_4 \ \exists v [R_2^2(v, q) \ \& \ Q_2 w [R_2^1(w, v) \ C_2$
 $\theta_1(j, w) \ \& \ \exists y [R_1^2(y, w) \ \& \ Q_1 z [R_1^1(z, y) \ C_1 \ FOLLO\!W(z)]]]]]$
 $\ \& \ \exists s [R_3^2(s, x) \ \& \ Q_3 t [R_3^1(t, s) \ C_3 \ LOU\!D(t)]]]]]]]$
 2. $\exists m [= (m, e) \ \& \ \exists n [= (n, m) \ \&$
 $\theta_2(i, n) \ \&$
 $\exists p [= (p, x) \ \& \ \exists q [= (q, p)$
 $\ \& \ \exists v [= (v, q) \ \& \ \exists w [= (w, v) \ \&$
 $\theta_1(j, w) \ \& \ \exists y [= (y, w) \ \& \ \exists z [= (z, y) \ \& \ FOLLO\!W(z)]]]]]$
 $\ \& \ \exists s [ASSOC(s, x) \ \& \ \exists t [= (t, s) \ \& \ LOU\!D(t)]]]]]]]$
 3. $\exists e_1 [\theta_2(i, e_1) \ \& \ \theta_1(j, w) \ \& \ FOLLO\!W(e_1) \ \&$
 $\exists e_2 [ASSOC(e_2, e_1) \ \& \ LOU\!D(e_2)]]]$
- (91) Final PFS for the associative reading
- $$\exists e_1 [SUBJ(i, e_1) \ \& \ OBJ(j, w) \ \& \ FOLLO\!W(e_1) \ \&$$
- $$\exists e_2 [ASSOC(e_2, e_1) \ \& \ LOU\!D(e_2)]]]$$

To insure that *Isolde* is also the subject of the associated event, a general meaning postulate like (92) is assumed.

- (92) $\square \forall x, e_1, e_2 [ASSOC(e_2, e_1) \ \& \ SUBJ(x, e_1) \ \rightarrow \ SUBJ(x, e_2)]$

The underspecified approach presented here gives very clear conditions for the application of the operator *met*”, which can in turn be used to derive associative readings. Interestingly, in the derivation of the parameter-fixed structure I gave above, the associated event was introduced with the help of the *met*” operator that was originally applied to the lexical entry for the adjective *loud*. It is, however, also possible to introduce the associated event with the help of the free parameters introduced by the first application of *met*”. Intuitively, this makes more sense, but I am not sure how this can be made into a hard requirement for the abductive process.

7.5 The role of the syntactic position

In section 5.4.2, I argued that adjectives that allow associative readings can be positioned before the direct object, while adjectives that do not allow associative readings cannot be positioned before the direct object. Furthermore, if an adjective allows an

⁶Within the context of this work, I simply assume that we have a mechanism that allows to choose the relation ASSOC for the specification of the free parameter. A possible candidate for such a mechanism is the abductive framework described in Hobbs et al. (1993).

associative reading and is positioned before the direct object, the associative reading is the preferred interpretation for the adjective. A good example for this effect is the preferred paraphrase for sentences containing the adverbial *sorgfältig* either before or after the direct object, cf. (93), the repeated example (46) from section 5.4.2.

- (93) a. Peter hat **sorgfältig** das Buch durchgearbeitet.
 Peter has carefully the book worked.through
 ‘Peter carefully studied the book.’
 (i) Peter hat das Buch durchgearbeitet, wobei er sorgfältig war. (\approx a)
 Peter studied the book. In doing that, he was careful.
 (ii) Wie Peter das Buch durchgearbeitet hat, das war sorgfältig. ($??\approx$ a)
 The way in which Peter worked through the book, that was careful.
- b. Peter hat das Buch **sorgfältig** durchgearbeitet.
 Peter has the book carefully worked.through.
 ‘Peter studied the book carefully.’
 (i) Peter hat das Buch durchgearbeitet, wobei er sorgfältig war. ($??\approx$ b)
 Peter studied the book. In doing that, he was careful.
 (ii) Wie Peter das Buch durchgearbeitet hat, das war sorgfältig. (\approx b)
 The way in which Peter worked through the book, that was careful.

According to the formalization of associative readings introduced in the last section, the associative reading of *sorgfältig*, preferably occurring with the word order in (93-a), can be formalized as (94).

- (94) Peter hat **sorgfältig** das Buch durchgearbeitet.
 [associative reading]
 $\exists e_1 [SUBJ(peter, e_1) \ \& \ \exists e_2 [ASSOC(e_2, e_1) \ \& \ CAREFUL(e_2)]$
 $\ \& \ OBJ(the_book, e_1) \ \& \ WORK_THROUGH(e_1)]$

The manner reading, on the other hand, preferably occurring with the word order in (94-b), can be formalized by using the standard format for manner modification, cf. (95).

- (95) Peter hat das Buch **sorgfältig** durchgearbeitet.
 [manner reading]
 $\exists e [SUBJ(peter, e) \ \& \ OBJ(the_book, e) \ \& \ CAREFUL(e)$
 $\ \& \ WORK_THROUGH(e)]$

In the approach based on underspecification presented here, the decision for the manner or the associative readings, and their respective formalizations, rests entirely on the way the free parameters introduced during the semantic derivation are specified to yield the appropriate parameter-fixed structure. In other words, the inflected semantic form of the two sentences will be equivalent. The fixation of the free parameters in the SF is a matter of pragmatics, whereas the grammatically determined meaning is already given in the SF (cf. Dölling 2003, Dölling 2005).

The preferences for associative readings in pre-object position cannot be captured by this system, since the different syntactic positions do not influence the buildup of the SF. With the SF, however, the composition of the grammatically determined meaning of an utterance is finished, since the fixation of the parameters is guided by pragmatics, and the syntactic position of adverbials is not part of pragmatics.

Maienborn (Maienborn (2003*b*), Maienborn (2001)) describes an alternative approach that takes different adverbial positions into account at the level of SF. Her approach can be understood best with the help of an example, cf. the two sentences in (96) and the two syntactic structures in (97).

- (96) a. Luise hat **auf der Treppe** gepfiffen.
 Luise has on the stairs whistled
 ‘Luise whistled on the stairs.’
 b. Luise hat **auf den Fingern** gepfiffen.
 Luise has on the fingers whistled
 ‘Luise whistled with her fingers.’
 = (24) in Maienborn (2003*b*)
- (97) a. Luise hat [_{VP} [_{PP} auf der Treppe] [_{VP} [_V gepfiffen]]]
 b. Luise hat [_{VP} [_V [_{PP} auf den Fingern] [_V gepfiffen]]]
 = (24’) in Maienborn (2003*b*)

According to Maienborn, the prepositional phrase *auf der Treppe* is an event-external modifier, whereas the PP *auf den Fingern* is a event-internal modifier (in the terminology introduced in chapter 4, event-external modifiers are event-external adverbials, while event-internal modifiers are either event-internal or process-related adverbial).⁷

Maienborn uses an operator MOD* in her derivation, which is sensitive to the syntactic environment in which it is applied, cf. (98).

- (98) a. MOD*: $\lambda Q\lambda P\lambda x[P(x) \ \& \ R(x, v) \ \& \ Q(v)]$
 b. Condition on the application of MOD*: If MOD* is applied in a structural environment of categorial type X, then R = PART-OF, otherwise (i.e. in an XP-environment) R is the identity function.
 = (30) Maienborn (2003*b*)

If we assume the SFs in (99) and (100) for the two PPs, and the SF in (101) for the verb, then we can derive the representations for the two different VPs, cf. (102) and (103), respectively.

⁷Maienborn uses the difference in the ability to carry primary sentence accent as one piece of evidence for the view that the two PPs, although in the same linear position, have different syntactic positions, cf. her data in (i).

- (i) a. Luise hat auf der Tréppe GEPFIFFEN.
 b. Luise hat auf den FINGERN gepfiffen.
 = (24’’) in Maienborn (2003*b*)

- (99) [PP auf der Treppe]: $\lambda x[LOC(x, ON(t) \ \& \ STAIRCASE(t))]$
- (100) [PP auf den Fingern]: $\lambda x[LOC(x, ON(f) \ \& \ FINGERS(f))]$
- (101) [V gepfiffen]: $\lambda e[WHISTLE(e)]$
- (102) [VP [PP auf der Treppe] [VP [V gepfiffen]]]
- a. $\lambda x[WHISTLE(x) \ \& \ R(x, v) \ \& \ LOC(v, ON(t) \ \& \ STAIRCASE(t))]$
 - b. $\lambda x[WHISTLE(x) \ \& \ = (x, v) \ \& \ LOC(v, ON(t) \ \& \ STAIRCASE(t))]$
 - c. $\lambda x[WHISTLE(x) \ \& \ LOC(x, ON(t) \ \& \ STAIRCASE(t))]$
- (103) [VP [PP auf den Fingern] [V gepfiffen]]
- a. $\lambda x[WHISTLE(x) \ \& \ R(x, v) \ \& \ LOC(v, ON(f) \ \& \ FINGERS(f))]$
 - b. $\lambda x[WHISTLE(x) \ \& \ PART_OF(x, v) \ \& \ LOC(v, ON(f) \ \& \ FINGERS(f))]$

For (102), the effect of using the operator MOD* instead of the operator MOD introduced earlier is, due to the syntactic position of the adverbial, non-existent, i.e., the resulting representation is the same. In (103), however, the parameter R introduced by MOD* is specified as PART_OF. The exact nature of the free variable v and its relationship to the event variable will then be specified with the help of pragmatics, similarly to the way in which free parameters are fixated using pragmatics in Dölling's (2003) approach.

The advantage of this approach is that it uses the syntactic position in the derivation of the semantic form. In addition, it uses clear criteria for the interaction between structural position and the specification of the free parameter R in MOD*, contrasting e.g. with the way Cresswell (1985) introduces his ASS operator or Eckardt (1998) her big events, cf. the comments in sections 7.3.2 and 7.3.3.

What speaks against adopting a similar approach for the derivation of associative readings, e.g. deviating from a mechanical insertion of the operator met" whenever a basic SF of type $\langle e, t \rangle$ appears in the process of the semantic derivation (cf. the condition given in (66))?

I think the most important argument against the introduction of restrictions on the insertion of met" lies in the data: not all adverbials in pre-object position are interpreted with associative readings, and similarly, adverbials in post-object position can also receive associative readings. Thus, even in the case of the data presented in (93), the paraphrases are only preferred paraphrases, but are not the only acceptable paraphrases.

Thus it is better to allow for more flexibility, even if this means that the influence of the syntactic structure cannot, at the moment, be accounted for in a satisfying way.

7.6 Conclusion

This chapter concentrated on the phenomenon of associative readings.

In section 2, I have repeated the data that led to the claim that there are such things as associative readings: they were linked to the availability of the *wobei*-paraphrase.

In section 3, I have presented and discussed previous accounts of data that allowed the *wobei*-paraphrase. The instances of adverbials allowing the *wobei*-paraphrase are generally best explained by making reference to at least two events in the formal representation. Three configurations are distinguished. In the first configuration, the event introduced by the verbal predicate includes some other subevent which is modified by the adverbial. In the second configuration, the event introduced by the verbal predicate is part of a larger event and the adverbial predicates over this larger event. In the third configuration, the adverbial predicates over an event different from the event introduced by the verbal predicate, but neither event subsumes the other.

In section 4, I have shown how a sentence containing associative modification can be represented in an event semantic framework and I have argued that it is best derived by using an approach based on underspecification. Finally, I demonstrated the derivation of an interpretation of a sentence containing an adverbial with an associative reading.

In section 5, I have discussed the question of an adequate modeling of the syntactic influence on the semantic interpretation of adverbials allowing associative readings. I have argued that because that in some cases the relationship between syntactic position and available readings is one of preference and not of direct mapping, the approach presented here has advantages over an approach that already lets the syntax restrict the derivation of the semantic form.

Chapter 8

Conclusion

The topic of this work was the syntactic position and the semantic interpretation of German adverbial adjectives. In the introduction, I identified three main questions to be addressed in this work:

- (a) What different adverbial usages of adjectives can be distinguished?
- (b) Which usages are tied to which syntactic positions?
- (c) How can different usages of adverbial adjectives be formally analyzed?

In the following, I will first give an overview of the results of these three questions, and secondly, point to some remaining questions in need of further research.

8.1 Results

The first question, (a), was answered in chapter 3. By using paraphrases and the behaviour of elicitation and sentence negation, I distinguished the following adverbial usages of adjectives:

- manner adverbials, degree adverbials and method-oriented adverbials
- mental-attitude adverbials
- event-external adverbials
- subject-oriented adverbials
- frame adverbials
- speaker-oriented adverbials

In the first three adverbial usages, e.g. as manner, degree and method-oriented adverbials, adjectives may not take scope over sentence negation. Within this group, paraphrases differentiate between the three subgroups. The group of manner adverbials is further divided into pure manner adverbials and agent-oriented manner adverbials. The distinguishing characteristic is whether, besides a specification of the manner, this specification is in also related to the agent of the sentence.

Mental-attitude adverbials and all following usages of adverbials differ from these usages in that they can take scope over sentence negation. Mental-attitude adverbials describe the attitude of the agent with regard to the activity described by the verbal

predicate.

In the group of event-external adverbials and subject-oriented adverbials, adjectives play only a minor role. Event-external adverbials allow a temporal interpretation. This group contains the temporal usages of the adjectives *schnell* ‘quickly’ and *langsam* ‘slowly’. Similarly, only a very few adjectives can serve as subject-oriented adverbials, e.g. *taktvoll* ‘discretely’ and *tapfer* ‘bravely’.

A bigger group of adjectives can serve as frame adverbials, as almost all adjectives that can be used as method-oriented adverbials can also serve as frame adverbials.

The group of speaker-oriented adverbials can be subdivided into three subgroups: speech-act adverbials, epistemic adverbials, and evaluative adverbials. Again, adjectives play a secondary role, only rarely serving as speech-act adverbials, e.g. *ehrlich* ‘frankly’, or epistemic adverbials, e.g. *angeblich* ‘allegedly’.

Question (b), the relation between the different usages and the syntactic position of the adverbials, was the topic of chapters 4 and 5.

In chapter 4, I first introduced the syntactic tests used to establish base positions for adverbials. Secondly, I attempted to match the different classes of adverbial adjectives established in chapter 3 against the five different adverbial positions identified in the works of Frey and Pittner: process-related adverbials, event-internal adverbials, event-external adverbials, frame adverbials and sentence adverbials.

Combining the syntactic criteria with the semantic criteria from chapter 3, I arrived at the following classification of adverbial usages of German adjectives, cf. figure 8.1.

Of these five different classes, only two, the event-internal adverbials and the event-external adverbials, may be convincingly linked to a specific base position when looking exclusively at the data containing adverbial adjectives. The few adjectives that are able to serve as sentence adverbials do not yield clear patterns. For frame adverbials, the data using those adjectives that can also serve as method-oriented adverbials similarly did not yield a clear pattern.

As for process-related adverbials, which include manner adverbials, the tests yielded conflicting results: some data supported a positioning before the direct object, other data supported a positioning after the direct object. Since the prototypical usage of adverbial adjectives is their usage as manner adverbials, the problem of their syntactic position was investigated in detail in chapter 5.

I discussed five different factors that appear to play a role in the syntactic positioning of manner adverbials: (a) integration of the direct object (b) availability of associative readings (c) textual cohesion (d) indefinite/topical direct objects, and (e) quantified direct objects. I argued that the concept of integration is not precise enough for use in restricting the possibilities of adverbial positioning. There is no non-arbitrary manner to decide when a direct object is integrated and when it is not. A better guide to the variation in pre- vs post-object positioning is the availability of associative readings. If these are available and intended, the adjective is usually placed before the direct object. If such a reading is not available or not intended, the adverbial is placed after the direct object.

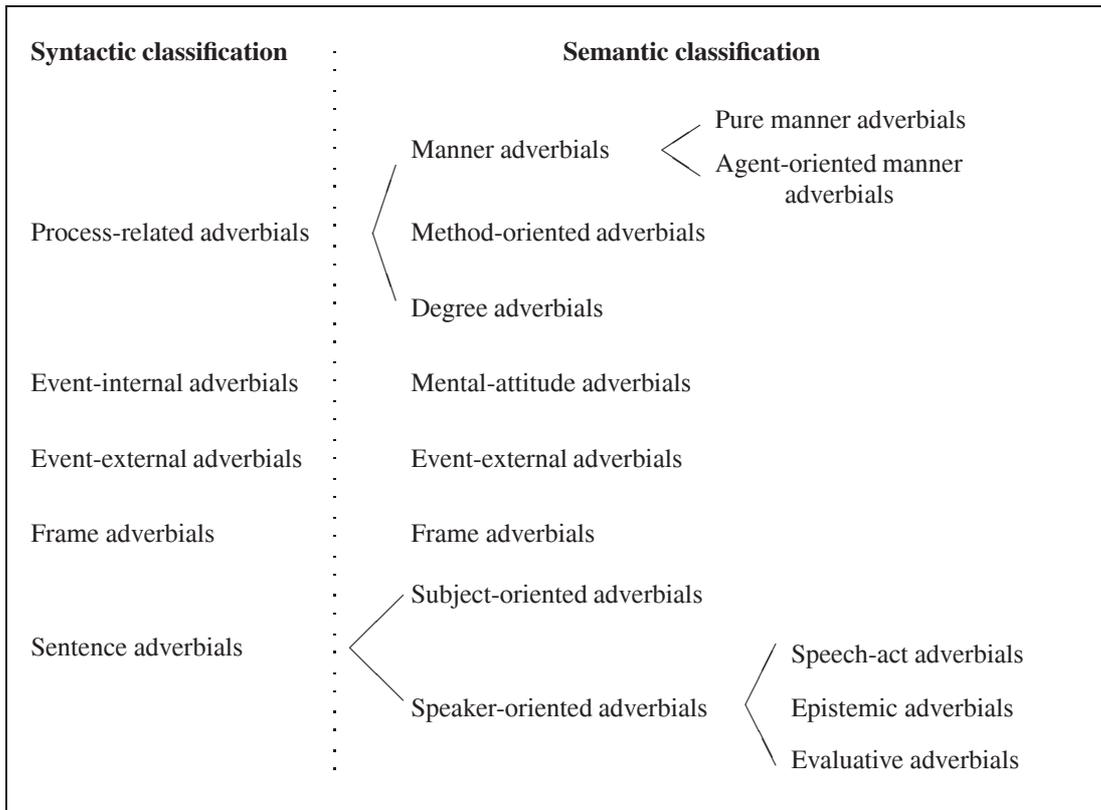


Figure 8.1

Textual cohesion plays a secondary role in comparison to the other factors, and the role of definite vs indefinite direct objects with regard to the base position for manner adverbials is not clear, since there is no agreement to what extent this is connected with the topicality of the indefinite. Quantified objects are positioned as the intended scope of the quantifier requires; quantification seems to intensify the effect of associative readings.

The formal analysis of some usages of adverbial adjectives, i.e., the answer to question (c), was the topic of chapters 6 and 7.

In chapter 6, I discussed the phenomenon of scope-taking manner adverbials. I argued that subjective adjectives, the adjectival class to which the scope-taking adverbials belong, can be analyzed similarly to intersective adjectives if the context is taken into account. In particular, I argued for a two-step approach to contextual influence: first, the material in the syntactic scope of the adjective is used to select the main scale used in the evaluation of that adjective. In a second step, other contextual information is used to select a subscale of this main scale. This understanding of subjective adjectives led to the introduction of two context-parameters into the lexical entry of the adjectives, C^U and C^S . The first is specified with the help of all contextual information

outside of the syntactic scope of the adjective, and the latter is specified with the help of the material in the syntactic scope of the adjective. These two contextual parameters allow for a straightforward representation of sentences where the adjective is used as a manner adverbial. In particular, if a further adverbial is in the syntactic scope of the manner adverbial, it will be used in the fixation of the parameter C^S , and its influence on the correct interpretation of the sentence is accounted for.

In chapter 7, I discussed the phenomenon of associative readings. Associative readings are those adverbial readings which allow a *wobei*-paraphrase, as in (1).

- (1) a. Isolde hat laut Jeremy verfolgt.
Isolde has loudly Jeremy followed
'Isolde loudly followed Jeremy.'
- b. Isolde hat Jeremy verfolgt, wobei sie laut war.
'Isolde followed Jeremy. In doing that, she was loud.'

I argued that associative readings are best explained by making reference to at least two events in the formal representation. To derive the representations of these readings without resorting to ad-hoc stipulations, I used a framework based on underspecification.

8.2 Open questions

Apart from the considerations concerning the syntactic scope used to fix the contextual parameter in chapter 6, the topics of the syntactic position and interpretation of adverbial adjectives were treated individually. This has been most apparent in the discussion of associative readings: I described the syntactic configuration that gives rise to these readings in chapter 5, I have shown how their formal representation can be derived in chapter 7, but I did not show a way to connect the two. That is, in my derivation, the syntactic position of the adverbial allowing the associative reading is not taken into account. In section 7.5, I discussed an alternative approach taking the syntactic positions of adverbials into account by restricting the insertion of underspecified parameters relative to the structural position of the adverbial. However, I argued that such an account will encounter empirical problems, since, for example, while it is true that the syntactic position of an adverbial influences whether it is interpreted associatively or not, this influence is not absolute, but rather one of preference. In future work, a way must be found to use this syntactic information in the derivation of a sentence's interpretation.

Further questions left open in this work concern the formal analysis of the adverbial usages. Thus, the exact relation that holds between the two contextual parameters introduced in chapter 6 in the representation of the lexical entry of scope-sensitive adjectives needs to be clarified. For the associative readings, it must be shown in more detail how an abductive framework allows the correct specification of free parameters.

Finally, a great desideratum of this work are speaker judgements, on the one hand, about the grammaticality of sentences, on the other hand, on appropriate paraphrases

for grammatical sentences. In many instances, especially in chapter 5, I noted that grammaticality judgements or opinions concerning preferred paraphrases are not shared by all informants. To overcome this, empirical research based on more informants is needed. In addition, a consensus on the gray area that spans from ungrammaticality to grammaticality is needed: what status should be given to sentences described as 'odd' rather than ungrammatical, and on what level of the grammatic system should preferred readings be accounted for.

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Versicherung

Hiermit versichere ich, dass ich die vorliegende Arbeit ohne unzulässige Hilfe Dritter und ohne Benutzung anderer als der angegebenen Hilfsmittel angefertigt habe; die aus fremden Quellen direkt oder indirekt übernommenen Gedanken sind als solche kenntlich gemacht. Bei der Auswahl und Auswertung des Materials sowie bei der Herstellung des Manuskripts habe ich Unterstützung von folgenden Personen erhalten:

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Ich habe nicht die Hilfe eines Promotionsberaters in Anspruch genommen. Die Arbeit wurde zuvor weder im Inland noch im Ausland in gleicher oder ähnlicher Form einer anderen Behörde vorgelegt. Sie war weder Bestandteil eines ruhenden Verfahrens noch wurde sie in einem gleichartigen Promotionsverfahren als endgültig nicht bestanden erklärt. Die Arbeit ist vorher auch noch nicht veröffentlicht worden.

Leipzig, den 17. Juni 2005

Martin Schäfer