Oriented Adverbs

Issues in the Lexical Semantics of Event Adverbs

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Preface

The thoughts put forth in this thesis have developed over a long time. I had started out with a vague plan of giving a systematic account of the ways in which adverbs address subparts of events, but then I found that certain fundamental concepts such as the notion of "manner" were undefined and unclear in a way that could not be resolved simply by appealing to subevents. The same lack of a precise understanding also seemed to infect the whole notion of "predicate of events" as applied to modifiers: Neo-Davidsonian semantics seemed to be built on dim intuitions as to the precise content, character, and scope of these notions. So I faced the task of finding a way of converting this intuitive uneasiness into a concrete research programme that could contribute to a better understanding of these notions. It was only after quite some time that I realised that the best way of clarifyong the notion of event modification might be to investigate the contrasts between the adverbial uses and the other, individual-predicating uses of one and the same underlying adjective. With this, the whole work took a lexical turn that it did not necessarily have at the outset. The result that has ultimately emerged is that, for modifiers, event predication can indeed be something that is lexically derived, and is thus not as monolithic and inscrutable as the neo-Davidsonian notation would make us believe (at least in the cases that are treated in this thesis).

In all the years, a number of people have accompanied me in the development of these ideas, and I want to thank them all — in particular the people of the Graduiertenkolleg ILS and the Seminar für Sprachwissenschaft (SfS) at the University of Tübingen, and also at the University of Konstanz where I moved later. Furthermore, I had the opportunity to present parts of the material to audiences at the universities of Konstanz (before I became a member of the staff), Potsdam, Wuppertal, at ZAS Berlin, and at LAGB, DGfS, and *Sinn & Bedeutung* conferences.

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Konstanz, May 2000   W.G.

Remarks on Terminology and Notation

The terms *individual* and *event* are generally used as opposites in this work. Strictly speaking, of course, events are a kind of individuals; it is exactly one of the assets of the neo-Davidsonian framework that it provides for this particular kind of individuals. Nevertheless, I need a way to refer to a distinction between events on the one hand and concrete individuals such as persons and things on the other hand, without having to use one of these cumbersome descriptions. In certain contexts, though, it may become necessary to point out the status of events as *abstract individuals;* this usage should not give rise to confusion. Accordingly, I will reserve the variable "x" for the concrete individuals just mentioned, in contrast to "e" for events. Hence the shorthands "x-predicate" for adjectives that denote sets of concrete individuals, and "e-predicate" for (lexical variants of) adjectives that refer to events.

Furthermore, I have to distinguish referential arguments (like the event arguments of verbs) from what can be called complement arguments (like "agent" or "theme"). I do not use thematic role predicates as e.g. Parsons (1990) does, but I distinguish referential and complement arguments by the notational device of splitting the argument structures. That is, complement arguments follow as a separate group (with an ordering that corresponds to the standard thematic hierarchies) after the predicate plus its referential argument. For example, an event of "x's seeing y" is thus written as: *see(e) (x,y).*

Symbols Used for Marking the Status of Example Sentences:

* : ungrammatical

?(?) : semantically or pragmatically (strongly) deviant

(?) : marginal or slightly deviant

% : dispreferred, or considered fully acceptable only by some speakers

: different meaning; acceptable only on an irrelevant reading

When an example sentence is cited a second time after its first occurrence in the text, its number is put in square brackets (instead of parentheses), to keep the ordering transparent.

Chapter 1

Introduction

Overview

1.1. General Outline

This thesis investigates adverbs from the perspective of the event semantic, or "neo-Davidsonian", framework. The term "adverb" is meant to refer to adverbial modifiers which are morphologically derived from an adjectival base, or are formally identical to adjectives.

Event semantics has provided a successful and at the same time very simple account of the semantics of manner adverbs by analysing them as "predicates of events". However, this line of research has almost exclusively been concerned with the role that those predicates of events play for compositional semantics. The aim of the present investigation is to complement this theory of adverbial modification with a perspective on the lexical semantic issues that ensue. Since I am exclusively concerned with modifiers that are derived from adjectives, this study also bears on the lexical semantics of adjectives in general. I identify two sets of lexical problems that come up in connection with the neo-Davidsonian theory of adverbial modification. The first one

centres on the observation that many adjectives that yield event adverbs alternate with uses in which they function as predicates of individuals instead of predicates of events. For the sake of simplicity, I refer to the variants as "e-predicates" and "x-predicates", respectively. Consider for example:

(1)   to open the package carefully   *Manner adverb:*   **careful(e)**
        a careful person   *Attributive adjective:*   **careful(x)**

What is the connection, in the above example, between a person's property of being careful and the property of events with the same name? Alternations of this kind are extremely pervasive and entirely regular, so one must suspect that there is something about the underlying lexical meaning of adjectives like *careful* that determines their appearance in this double role, and it is the ultimate goal of the present work to elucidate this connection. The analysis of such alternations, however, is complicated by the fact that most x-predicates give rise to more than one adverbial use. It becomes an important question, then, whether these other adverbial variants are predicated of events, too. If it turns out that one lexical item (i.e., one and the same underlying adjective) can relate to an event in several distinct ways, this means that, with regard to their lexical semantics, manner adverbs and related types of modifiers cannot simply be characterised as predicates of events — a more fine-grained account of their semantics will then be needed. Consequently, distinguishing different adverbial functions of the same underlying lexical item, and clarifying which ones of these constitute event-related modifiers, will take up a large part of this thesis. This leads me to investigating a number of non-manner variants of adverbs that have received little attention so far, and which might appear to constitute "borderline cases" of event-related modifiers.

A second set of questions that is more in the background of this work relates to the general perspective on modification that is suggested by neo-Davidsonian theory. The conjunctive analysis of intersective modification itself raises a lexical-semantic question: What kind of lexical-semantic distinction underlies the difference between modifier and modified? Although intersective modification is represented as a conjunction, we have a clear intuition that not any instance of conjunction can be called modification. From this perspective, we arrive at another variant of the question I have begun to raise above: If we suspect that there can be several event-related modifiers from the same lexical base, then the question arises as to the precise relation between the

adjective and the event argument. In the same vein, the asymmetry between modifier and modified might be taken to point to differences in the role that the event argument plays for the meanings of verbs and adverbs, respectively. This concern materializes, for example, in the very notion of "manner modification": There are various sorts of predicates that target events but do not convey a sense of "manner" (to begin with, verbs do not, and neither do adverbs that serve to count events such as e.g. *twice,* and so on). So the notion of "manner", though undefined as yet, seems to be needed over and above the notion of event predication. It indicates how the adverb relates to its event argument. As I said, this second complex of questions will remain somewhat in the background. In the bulk of this work, I will be concerned with various issues that emerge from the first set of questions. On the basis of the results attained there, however, it will be possible to elucidate this latter question to some extent.

The remainder of this chapter provides a very brief outline of the case for event semantics in general, and in particular for the neo-Davidsonian analysis of manner modification. I shall then introduce my approach to the lexical semantics of event adverbs in more detail, and, in particular, the notion of adverbial orientation, which features in the title of this work. The chapter closes with an overview of the contents of the following five chapters.

1.2. Events and the Compositional Semantics of Modifiers

The tenet of the "neo-Davidsonian" framework of semantics (see Parsons 1990 for a comprehensive overview) is that verbs denote sets of events — in the same way as many nouns denote sets of concrete individuals. Although the ontological committment that lies in the introduction of events as a new sort of entities has sometimes met with reservation, there is no denying that event semantics has led to clear and successful accounts for a large number of phenomena in the semantics of natural language. The arguments that have been given in favour of events can be divided into two main groups: First, observations to the effect that verbs introduce entities that behave very much like other individuals, and second, considerations to the effect that events allow us to capture the logical properties of compositional processes such as adverbial modification.

I would like to be brief on the first point, viz. justification for the existence of events as semantic individuals, and just point the reader to some relevant issues and representative work in the literature (for more general discussion and summaries of the relevant arguments, see also the recent works by Eckardt 1998 or Bayer 1998, for instance):

• Classic work by Vendler (1967) established the existence of two types of nominalisations: Some denote a propositional entity, and others denote something different — arguably, events (for comprehensive discussion cf. Zucchi 1993). The point is here that the assumption of events over and above propositional functions motivates the existence of different grammatical forms of nominalisations (gerunds with direct objects vs. gerunds with an *of-* PP) as well as their distinctive behaviour that confines them to specific contexts.

• Lexical aspect, i.e. the distinction of boundedness vs. unboundedness with verbs has been explained as an equivalent of the count vs. mass distinction known from concrete individuals and substances (Bach 1986, Krifka 1989). In this respect, then, the things verbs refer to (namely events) share important traits with the individuals that nouns typically refer to. In the same vein, events are found to enter into a mereological structure, i.e. they have parts and can undergo summation (cf. also the recent discussion in Eckardt 1998).

• In a number of constructions, event variables are needed to fill positions in which individual arguments typically appear. Many examples of predicates that can take events as one of their arguments are found in connection with the discussion of event nominalisations vs. propositional nominalisations (mentioned above). Moreover, Higginbotham (1983) argues that bare infinitives after perception verbs (in examples like *John saw Mary leave the house)* should be analysed by taking events as the object of perception. Here again, events are treated on a par with concrete individuals. Note, finally, that events betray their existence by the fact that one can directly refer to them by anaphors, as amply discussed in Asher (1993), for example (though this is something that propositions and other more abstract objects allow as well).

From the background of this evidence, let us now narrow down on the discussion of events in adverbial modification. As already mentioned, the gist of the analysis given in the event semantic framework is that manner adverbs are predicates of events, more or less in the same way as verbs. This enables an analysis of manner modification as a

standard case of intersective modification, which is supported by the logical properties that these modifiers exhibit. In order to review this argumentation, I shall have to rely on a class of modifiers that is somewhat larger than the one dealt with in the main part of this work. As has often been emphasized (e.g. Parsons 1990, Wyner 1994), it is sentences with an array of several modifiers that provide the crucial evidence. Hence, both *-ly-* adverbs and various PP modifiers that behave alike in important respects will be considered together in the following (to repeat: we do not have an independent definition for the notion of "manner modifier" anyway). A crucial finding that concerns the set of all such manner-like modifiers is that they can be dropped from a sentence without affecting its truth value. This entailment pattern can be rendered in a diamond-like diagram (the entailments are found by reading downwards):

(2)   John kissed Mary passionately on the porch

              /   \

John kissed Mary passionately John kissed Mary on the porch

            \   /

       John kissed Mary
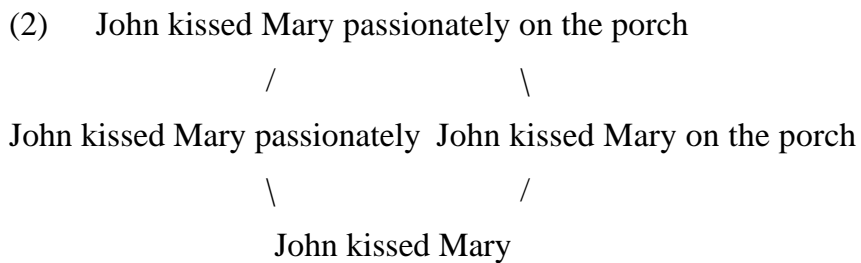
The droppability of manner adverbs is reminiscent of intersective adjectives like *married,* which, if combined with nouns, generally allow the conclusions in (3):

(3)   a. $_{NP}$[A N] (x)   N(x)

     b. $_{NP}$[A N] (x)   A(x)

As can be seen, droppability is a weaker notion than intersectivity. Intersectivity additionally entails that the modifier is itself a predicate of the same type as the modified head, while droppability could as well be a property of an operator that is still unable to stand on its own. Let us first explore the intersective analysis, because a conjunction of two predicates that share the referential argument is the easiest way to account for the pattern with nouns that appears in (3). This representation encodes the entailment pattern into the very mode of composition. As soon as we assume a referential argument for the verb, too, adverbial modification can be done in a completely parallel way:

(4)   a.   married woman   b.   to kiss passionately

married(x) & woman(x)   kissing(e) & passionate(e)

It is certainly attractive to use the same general format for the representation of intersective modifiers both with nouns and with verbs. This does not mean, of course, that a uniform treatment can be given for all modifiers: From the semantics of noun-modifying constructions, it is well known that there are certain types of adjectives that are not intersective and would thus have to be operators (*former* or *alleged* being classic examples). A completely uniform semantics of noun-modifying adjectives could then only be achieved by "generalizing to the worst case", i.e. by rendering all adjectives as operators. However, it is in no way problematic to assume that modifiers can be of various different types. On the contrary, the semantic literature contains plenty of examples which show that composition proceeds by selecting from a small number of universal compositional processes, according to the lexical requirements of the grammatical elements in question (a prominent example is Stump's 1985 treatment of absolute constructions). In our case, the choices are either functional application or conjunction together with unification of the referential variable.

So there is no problem in having intersective modification structures while at the same time invoking an operator semantics where truly needed, e.g. for modifiers like *former*. However, even if there is no necessity for generalising to the worst case, the operator account would at least seem to be a viable alternative because it could be argued that nothing prevents us from wiring the semantic transparency of manner modifiers into the meaning of an operator, thus mimicking the effects of the conjunction analysis. The operator analysis of manner adverbs has a venerable tradition (e.g. Thomason & Stalnaker 1973). It has at least two shortcomings, though. The first observation that speaks in favour of the intersective analysis is the existence of predicative uses:

(4)   c.   The kissing was passionate

If we agree that the nominalisation *kissing* also denotes an event, the predicative structure can be derived without further assumptions if manner adverbs are predicates of events; on the other hand, if adverbs were operators, additional machinery would be needed to turn them into predicates that can be used with the copula. This is not

impossible — see Hamann (1991) for a review of such proposals — but it would seem to yield unnecessary complications.

A second, and maybe more serious, shortcoming is that the operator approach requires the entailment properties to be stated in the lexical entry of every single such operator, in some way or other. This method not only misses a generalisation, it even seems to become unfeasible in cases where we must be able to account for combinations of several modifiers. With examples of that kind, we see that manner and related modifiers behave as if they were scopeless elements. To begin with, they can appear in various orders in the syntax without a substantial difference in meaning:[1]

(5) a. Tom kissed Sandy passionately on the porch
    b. Tom kissed Sandy on the porch passionately
    c. Tom passionately kissed Sandy on the porch

If we had to account for the intersectivity of the modification relation in every single lexical entry of the modifiers, we would soon run into an explosion of lexical stipulations. Note that an approach that uses operators but no events makes it necessary to apply adverbs to intensional properties (for if in a certain context the people who are singing and the people who are dancing are set identical, it still does not hold that *singing beautifully* yields the same truth value as *dancing beautifully*). Then, an adverb (as an operator) maps one property onto a new property — even if all that ever really happens is a mapping onto a more specific property, not a completely different one. We could formulate a meaning postulate that states the transparency effect (V being the intensional property denoted by the verb):

(6) Adv (V)   V

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[1] The examples are taken from Wyner (1994). Note, however, that different surface orders do not necessarily entail differences in syntactic hierarchy and order of application. In a syntax that assumes a layered VP with the options for both left- and right adjunction — as in Bowers (1993) — (5b) would be structurally ambiguous, since the level of attachment for right-adjoined material is not visible. Then, (5b) could be the right-adjunction variant of either (5a) or (5c), and hence, there would be only two different orders of composition. It is only the difference between (5a) and (5c) that cannot be explained away along these lines. Unfortunately, there is an element of uncertainty in that preverbal adverbs can give rise to different interpretations. The manner interpretation can usually be obtained, however, even if in certain cases other interpretations are more prominent (it does not seem that *passionately* allows more than one adverbial reading, so this seems to be one of the better examples). For a discussion of adverb positions and distinctions of adverbial readings, see chapter 2 and the case studies in chapters 3 to 5.

However, as more such adverbs are added, we would be forced into more such postulates. Along the lines of (6), we of course get the droppability of Adv2 itself in the following case:

(7) $Adv_2 (Adv_1 (V))$ $Adv_1 (V)$

What we do not get, as emphasized in Parsons (1990) and Wyner (1994), is the droppability of Adv1 **in the scope** (as it were) of Adv2. Yet, this pattern holds for all pairs of manner-like modifiers Adv1 and Adv2:

(8) $Adv_2 (Adv_1 (V))$ $Adv_2 (V)$

Adv1 creates a new property, and even in case that it is always just a more specific version of the original property V, nothing in principle ensures that Adv2 will be insensitive to this difference. This must again be postulated separately. What is more, we can observe the following correlation: All modifiers that are droppable in the sense of (6) are also indifferent to the goings-on in their "scope" as in (8). On the operator approach, this comes out as a mysterious coincidence. Next, since the orders of Adv1 and Adv2 can often be reversed, the same as for Adv2 would have to be stated in turn for Adv1, and so on. The plethora of lexical postulates that would have to be introduced to take care of this behaviour would eventually amount to removing in the lexical entry all effects that are initially expected from the compositional status of being an operator. Clearly, the approach that uses conjoined structures is superior since it encodes the necessary properties into the structure without creating a need for repair on the level of lexical meanings. This is, then, one piece of evidence for the existence of an event argument.[2]

The argument just presented has relied on both a compositional and a lexical component. That is, after having established what the logical properties of manner modifiers are (i.e., taking a compositional viewpoint), an operator analysis for them was deemed unfeasible because of the implausible lexical properties that such operators would need to have. By concluding that the event approach is superior, however, we are implying that an analysis of manner adverbs as event predicates does not meet with any

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[2] Though I am not concerned with the issue of intensional operators in this work, a few more remarks concerning this alternative can be found in chapter 2, section 2.2.4.b.

lexical difficulties of similar import. This is the point of central concern in the present work. As already mentioned, there are indeed a number of problems hidden in the apparently simple conception that adverbs predicate of events. However, I think that in the end one will conclude that the operator approach would fare even worse with respect to those lexical problems. Thus, ultimately, event semantics will turn out to be a favourable approach also under this aspect: It provides a format in which the lexical issues can be fruitfully addressed.

1.3. Alternations between x- and e-Predication

a. Lexical Classes of Adverb Bases

From the compositional point of view, "predicate of events" may have seemed a simple and monolithic notion. In this section, I start to set out the lexical problems which ultimately show the need of an analysis of its internal makeup. As already mentioned, the most accessible of the lexical problems is the issue of alternations between x- and e-predication. To get a concrete idea of the situation, let us look at a larger set of examples with alternations between adverbial forms and x-predicating adjectives. Note, however, that this collection is very tentative: It is nothing but a first guess to expect that all of the following adverbs are predicates of events.

(9) a. He solved the problem intelligently   /cf./   an intelligent dog
     b. He opened the safe carefully   /cf./   a careful person
     c. He opened the safe reluctantly   /cf./ I am reluctant to do it
     d. He left the room sadly   /cf./   a sad person
     e. He opened the safe sadly
     f. He angrily broke the door open   /cf./   an angry person
     g. They loaded the cart heavily   /cf./   a heavy bag
     h. He danced beautifully   /cf./   a beautiful hat,
                                                           a beautiful dancer
     i. He opened the safe slowly   /cf./   a slow car

The x-predicates that are given on the right hand side in (9) exemplify different lexical classes. As a rough characterisation of the kinds of word meanings involved, we can say the following:

a) Properties connected to psychological conditions:

- *intelligent, careful:* a disposition of an individual (a subgroup of the so-called individual-level predicates)
- *reluctant (to do sth.):* an attitude of an individual towards a possible action (as such this would be a state of the individual)
- *sad, angry:* an emotional (or "psychological") state of an individual (not or not necessarily expressing a propositional attitude)

b) Other, external properties

- *beautiful:* an aesthetic quality
- *heavy:* a value on the scale of "weight" (apparently a pure property of things — the adverbial use of this predicate seems somewhat mysterious)
- *slow:* a value on a scale connected to "movement / change" (expected to be primarily a property of dynamic entities — i.e. events, not individuals)

Since this work is an inquiry into the lexical factors that govern alternations between x-predicating adjectives (such as those above) and adverbs, it is necessary to proceed by considering different lexical classes one by one. I shall therefore restrict this investigation to three cases that correspond to the examples *intelligent, sad,* and *heavy* above. This particular selection is motivated by the expectation that these items will turn out to have something in common, which I want to call their **orientedness.** Let me, at this point, only give a brief outline of what this term aims at; a more comprehensive picture will emerge from the concrete case studies in the next chapters.

b. Oriented Adverbs

If we inspect the meaning types of x-predicates given above, the question can be asked: What has become of all these properties of individuals in the corresponding adverbial form? Are the semantic differences between the various classes of x-predicates lost in the adverbial variants, or do we correspondingly find adverbs of different classes? In view of the fact that the relation between e- and x-predicates is so systematic, it is conceivable that certain adverbs might share individual-related meaning components of

their x-predicating cognates — maybe because they are derived from them. It is adverbs with this property that I call **oriented adverbs**. This is to say, this particular notion of "orientation" is always to be understood as orientation to an individual. So the perspective taken on adverbs like *intelligently, sadly, heavily* is to ask in which respect their meaning is to be understood on the basis of the properties of individuals expressed by the underlying adjectives. The cases that would contrast with orientednessn are therefore: x-predicates whose meanings have to be understood on the basis of the e-related variant (i.e. the converse case), or cases in which neither variant underlies the other.

So far, adverbial orientation is nothing but a fairly loose and pretheoretic concept, which unites a number of adverbs under a single perspective. The task is to elaborate on this perspective and to find out what the orientedness of adverbs, i.e. their semantic dependence on predicates of individuals, precisely consists in. For now, I would like to leave the notion of orientation on this intuitive level, and only describe the contrasting cases that can serve to delimit this notion. That is, let us consider the cases of superficial x/e-alternations that do **not** involve oriented adverbs in the sense sketched above. First, consider (9h), repeated below:

[9h.]   He danced beautifully   /cf./   a beautiful hat

The adverb and the x-predicating adjective make the same kind of assertion about different entities; so here we have an example of an adjective that is **indifferent** as to the sort of entity it is predicated of. It is a case comparable to the perception predicates briefly mentioned in section 1.2. The verb *see,* for instance, is classically assumed to be able to take both things and events as its theme argument (Higginbotham 1983), hence the argument structure of *see* can be satisfied in the two different ways shown in (10):

(10)   John saw a girl: $girl(x)$ & $see(e) (John, x)$

John saw Mary leave: $leave(e') (Mary)$ & $see(e) (John, e')$

Events occur in a certain location, are visible, create sounds, etc. — therefore, certain predicates describing sensation only require that an entity is perceptible, and so it is only natural if adjectives like *silent, beautiful,* and others whose meanings are based on the notion of perception, share the free applicability to events and individuals that is also

exhibited by (the object position of) *see.* Superficially, (9h) can be called a case of shift between x- and e-predication, but it is not the kind of alternation I am after, since the difference between predication of the ontological sorts x or e has nothing to do with a distinction between two senses of the word.

A second example that helps to delimit the concept of adverbial orientation is sentence (9i) (repeated below):

[9i.]   He opened the safe slowly   /cf./   a slow car

What is the connection between these two uses of *slow?* One can note a slight ambiguity in the expression *a slow car:* It can be an inherent property of a car that it is not able to go very fast, or there can be a particular situation in which a particular car was going slow. So both a generic and an episodic interpretation is a possible option. However, what we have just done in both cases was to explain the meaning of *slow car* on the basis of the meaning of a car's *going slowly,* i.e. the event-predicating variant. An ambiguity arises only from the different ways in which this underlying e-predication can be related to the individual *car.* So the event-related sense would indeed seem to be the underlying one. Incidentally, something similar is the case with the adjective *beautiful* as well, which produces an ambiguity in attributive use:

(11)   a beautiful dancer =   1. a good-looking dancer

2. someone who dances beautifully

Whether the difference between these two variants is to be viewed as a lexical difference or not is a question that merits discussion (cf. chapter 2). But in any event, the type in (9i) appears to be something like the mirror image of adverbial orientation: The interpretation of the adjective *slow* in its x-predicating use, or of *beautiful* in the second reading in (11), is somehow based on the meaning of the e-predicating variant and seems to inherit event-related meaning features from it. Oriented adverbs, on the other hand, would be e-predicates whose meaning has to be reconstructed on the basis of a predicate of individuals. The lexical problems that surround individual-predicating uses of adjectives like *slow* (or the second interpretation of *beautiful)* have received a fair amount of attention in the literature (e.g. Pustejovsky 1995, Larson 1998); however, the same cannot be said for the (seemingly) converse case of oriented adverbs. So in chapter

2, I address the question of whether the solutions proposed for the type *slow* can be transferred to the problem of oriented adverbs.

Speaking of the notion of "orientation", one more clarification is in order, because this term is already in use for one particular type of adverb, viz. the "subject-oriented" adverbs in Jackendoff (1972). Jackendoff's notion of "orientation" is different from the one envisaged here, even though it is worth thinking about possible connections. His "subject-oriented" adverbs derive their name from the fact that they exhibit the phenomenon of "passive-sensitivity": The individual they intuitively make reference to changes as the surface subject changes from active to passive clauses:

(12) a.   The police carelessly have arrested Fred
      b.   Fred carelessly has been arrested by the police

This gives the impression that the adverb *carelessly* predicates of an individual. Indeed, paraphrases of (12b) can take an individual as their subject (as in 13a), or at least as a further argument (as in 13b):

(13) a.   John was careless to be arrested
      b.   It was careless of John that he got arrested.

However, the point is that the notion of orientation as it is used in the present work is built on the existence of a lexical alternation between predication of individuals and predication of events, while the paraphrases of passive-sensitive adverbs lead one to thinking that the adverbial variant itself has an additional argument position for an individual, and this is what "orientation" seems to entail in the sense of Jackendoff's term.

c. Alternations between Different Adverbial Uses

The problem of "subject-oriented" adverbs brings up another question of central concern for the present work: It is not clear from the outset which types of adverbs fall under the notion of "predicate of events". It is safe to assume that manner adverbs do, but it must be admitted that we are lacking a clear definition of the notion of "manner",

and therefore it is not easy to determine on independent grounds what types of adverb would have to fall under this term or be excluded by it. Something we can do immediately, however, is to use the prepositional paraphrase for manner adverbs, *in a ... manner,* as a diagnostic for distinguishing manner adverbs from other types. We have just seen that with adverbs like *stupidly, carelessly,* etc, two different readings can be established by means of the two different paraphrases: The so-called "subject-oriented" reading cannot be paraphrased with the noun *manner* but only with the corresponding adjective plus the preposition *of* and a sentential constituent, such as a *that*-clause:

> (14) The police carelessly arrested Fred
>
>   a. The police arrested Fred in a careless manner.
>
> /vs./ b. It was careless of the police to arrest Fred

Moreover, some uses of adverbs that were listed in (9) resist the *manner-* paraphrase:

> [9f] He angrily broke the door open   =?? ... in an angry manner
>
> [9g] They loaded the cart heavily   =?? ... in a heavy manner

The same can be observed in the following example:

> (15) a.   He kicked me intentionally
>
>   b.   ?? He kicked me in an intentional manner [3]

It is unclear at the moment what the impossibility of the paraphrase means for the semantics of these adverbs. Either the English word *manner* has a meaning which is more narrow than the categories of "manner adverb" or "predicate of events", or we have to assign the adverbs to a different semantic type. A large part of the discussion in the following chapters will be devoted to clarifying the precise semantics of such borderline adverb types. With a more complete view of the different adverbial variants, we can then see how the range of adverbs that can be derived from a particular adjectival base is conditioned by the adjective's underlying lexical meaning.

---

[3] One might perhaps object that *intentionally* is a "sentential" adverb anyway and that the absence of the "manner"-paraphrase is therefore not astonishing. However, in (15a), it appears in a typical VP-adverb position with the same typical intonation pattern (sentence accent on the adverb), so it does not take scope over anything — more on this topic will be found in chapter 2. The easiest way to represent the adverb in (15b) would indeed be to assume that actions can be "intentional", i.e. have a certain type of agentive feature that can then be written as a predicate of events.

The main lexical problem that was identified in the preceding section consisted in the fact that certain predicates seem to exhibit regular lexical shifts between predication of individuals and predication of events. It is now clear that describing the problem in this way was a simplification, because the very notion of "event-predicating variant" seems to presuppose that there is exactly one event-related reading for every adverb (supposedly, the manner reading). However, certain adjectives give rise to more than one adverbial variant; this could be seen, for instance, from the fact that we can derive a manner and a "subject-oriented" variant from adjectives like *careless.* Likewise, we get a difference in paraphrasability with different occurrences of *angrily:*

(16)   He shouted at them angrily   = ... in an angry manner

[9f]   He angrily broke the door open   =?? ... in an angry manner

d. Summary

The preceding paragraphs of course couldn't accomplish much more than to scratch the surface of the topic. The aim was merely to motivate the general perspective on adverbs taken in this work. I have started to give a perspective on questions of lexical semantics that arise from the neo-Davidsonian theory of adverbial modification, but it should be clear that this point must be further elaborated in the context of an in-depth discussion of the various adverb types. Three sets of questions have been identified:

• Which regularities govern the alternation between adverbs and individual-predicating adjectives? In which ways do adverbs in such alternations inherit meaning components from the corresponding predicate of individuals?

• Can there be several different ways for an adverb to be event-related, or is there always exactly one "predicate of events" from each adjectival base, the other variants being adverbs of different types (e.g. propositional adverbs)? Is this type of variation within the adverbial domain regular? How can the range of adverbial uses of a particular adjective be explained on the basis of the adjective's meaning?

• What is the lexical status of the event-related variant in this network of different uses of an adjective? To which degree does it constitute an independent lexical meaning? What lies behind the notion of "manner"?

1.4. Overview over this Dissertation

The theoretical questions that result from the considerations in this introduction will be addressed by three case studies on different lexical classes of adjectives and the spectrum of adverbial uses they give rise to.

Before I turn to this, however, **chapter 2** gives an overview of the different types of adverbs that play a role in this work and discusses syntactic and semantic criteria for characterising and distinguishing adverbial readings. A major point is to elaborate on the finding that there are several adverb types that are clearly distinct from standard manner adverbs, but still raise the question of their event-relatedness. This chapter furthermore gives an overview of the correlations between lexical classes of x-predicates and the types of adverbs they give rise to. The second part of this chapter discusses ways to assess the degree of independence of adverbs as entries in the lexicon, in particular the consequences for this question that result from an analysis of adverbial morphology and lexicalisation phenomena with adverbs. From this perspective, I finally examine the relevance of extant accounts of systematic polysemy, which exclusively concern adjectives, not adverbs; still, ideas found in particular in work by Bierwisch (1983), Pustejovsky (1995), Larson (1998), and Blutner (1998) seem to be relevant, if only indirectly. So this last section is the closest possible equivalent of a literature survey of this neglected area.

As the first in a series of three case studies, **chapter 3** discusses adverbs like *heavily* as in *load the cart heavily,* a use that is termed the "resultative adverb" construction. The discussion first considers the option of an explanation in terms of submodification that targets resultant states of events. The analysis argued to be the correct one for most of the cases in this class, however, involves recognising resultant objects (instead of resultant states) as a constitutive element of certain events. It is these individuals that serve as the primary target for resultative adverbs. Thus, the conceptual content of resultative adverbs is to be reconstructed in terms of predication of an individual. Compositionally, however, they still seem to behave as event adverbs, and the individual in question is indeed an implicit argument and can be retrieved via the event variable. It is therefore argued that what is needed for these adverbs is an event semantic representation that is more fine-grained than the usual ones. This is the first

case that shows how lexical considerations can enforce a revision of the notion of event modification.

As a second case in point, **chapter 4** addresses the pattern of alternations that is exhibited by individual-level adjectives like *stupid.* The three major variants that have to be analysed are the individual-level adjective, the manner adverb, and the so-called "subject-oriented" use. It is argued that the manner use does not constitute an independent lexical entry, but is lexically based on the meaning of the subject-oriented variant, which in turn stands in a relation of systematic polysemy to the individual-predicating variant. This is demonstrated on the basis of a (lengthy) analysis of the lexical semantics and the compositional properties of the mysterious "subject-oriented" variant. It can then be seen that the manner variant targets constituent parts of events that are of the kind that is described by the agentive variant. The upshot is that the manner reading is explained as an instance of a lexical shift similar to the one encountered with resultative adverbs.

Chapter 5 deals with adverbs derived from psychic states, like *sad* — for short: "psychological adverbs". There are two different types of adverbs that can be formed from such adjectives: "manner" adverbs and "transparent" adverbs (a distinction that is very different from the one between manner and "subject-oriented" adverbs in chapter 4). Another topic that is brought up by this class of adjectives is the distinction between adverbs and VP-adjoined predicates of individuals, i.e. depictives. It is argued that depictives deserve to be called "adverbial" elements in certain respects. Their interpretation proceeds via a kind of constructional process. One type of psychological adverbs, the "transparent" one, is very similar to depictives in that its adverbial reading also comes about via a predominantly constructional process; the factor that determines the choice of an adverbial or a depictive construction is found to lie in a fairly subtle semantic distinction. As for the manner use of psychological adjectives, it is argued to be built on still another lexical variant, which, however, does not primarily target events at all: By their lexical meaning, adjectives of psychic states yield variants that identify a particular external state of affairs via an "indicator", which in turn can be contained as a constitutive feature in certain events. This is what licenses the manner reading, and hence this case again shows certain parallels to the cases dealt with in chapters 3 and 4.

Finally, **chapter 6** summarises the findings and offers a synopsis of the results, especially with respect to the types of event-relatedness of adverbs, their relation to the

use as predicates of individuals, and their lexical status in general. Taking together the results about the three lexical classes investigated in chapters 3 to 5 also allows to elucidate some of the characteristics of the notion of "manner adverb" and connect it to some recent development in the literature on lexical semantics and modification.

Chapter 2

The Lexical Status of Adverbs

Overview

2.1. On Distinguishing Adverb Types

In chapter 1, I have given a first sketch of the notion of orientedness. I now want to substantiate it further by connecting it to the issue of how to distinguish different adverb types. So, in the following, some basic differences in orientedness will be explored. These distinctions will then be correlated to some other criteria for distinguishing adverb types, in particular syntactic criteria. Sorting out the distinctions between adverb types is a first step towards our ultimate goal of explaining the various connections between predicates of individuals and predicates of events.

2.1.1. Orientedness Effects

Manner adverbs are the most familiar instance of event adverbs. So let us begin with the question: In which way are manner adverbs related to the lexical meaning of the corresponding x-predicate? What I am heading for here is the simple point that this relation is typically opaque for manner adverbs, although it is not for certain other types of adverbs. If we say that an action is done in a "reluctant" or "sad manner", then this can cover situations in which the action is done in this particular way just for show. For example, the second sentence of (1) below contains a manner adverb saying that John's shouting is marked with anger, but the context makes one think that the predicate *angry(x)* is not true of John in this situation:

(1)   — How did you manage to make them believe you were a real officer?
          — Well, I kept shouting at them all the time real angrily.

Although manner adverbs do not entirely exclude the possibility that the agent is indeed in a state of anger, sadness, or reluctance etc., it seems to be their characteristic feature that they are neutral with respect to such an assertion. They obviously refer to something different — not to a state of the individual but to the "manner" of the action, whatever this may be. In this respect, manner adverbs would not seem to qualify as "oriented adverbs". This conclusion arises in the same way with adverbs derived from psychological states as in (1) and with those that alternate with individual-level predicates, as in (2):

(2)   a.   Bill solved the problem intelligently
      b.   Bill usually solves such problems intelligently
      c.   Bill is intelligent

This latter case, is somewhat more subtle, though: It does not seem impossible to claim (2a) and at the same time deny (2c).[4] Even if we compare the individual-level predicate

---

[4] Klein (1980) and Kamp (1975) argue that the comparative "A is more intelligent than B" can be evaluated only on the basis of a specification of the dimension of comparison, i.e. particular types of activities. In this sense, these adjectives would involve a contextual parameter, and one might try to argue that the difference between (2a) and (2c) is simply due to the fact that two different comparison classes are involved in the examples, namely instances of problem solving in (2a), and an unspecific class that can be filled in various ways from context in (2c). But this is not a satisfying explanation for the contrast, for it only invokes activity types for comparison. The difference remains that the adjective in (2c) is an individual-

in (2c) to a manner adverb in a generic sentence like (2b), we cannot say that (2c) is entailed by the adverbial construction. Maybe we would indeed tend to accept the statement (2c) if (2b) is given, but this would rather be a matter of inference, not entailment. In other words: Given (2a) or (2b), we would tend to assume (2c) because, if *Bill is intelligent,* this would **explain** why he is able to solve problems the way he does. If the relation between Bill's intelligence in (2c) and the "intelligence" of his behaviour in (2a-b) is one of explanation, then the two uses of *intelligent* describe two different states of affairs. So the connection in lexical meaning of the adverbial and the x-predicating variant is indeed fairly opaque.

It migh still be the case that manner adverbs do have certain meaning features that make reference to an individual. When I said that they don't exhibit orientedness this just means that the x-related features are not exactly those of the x-predicating variant of the adjective. We note, for example, that the adverb *intelligently* can only be used to modify descriptions of deliberate actions performed by an agent (3a vs 3b). And in many sentences with a causative situation type we would exclude the use of this adverb if the subject is an entity not capable of mental operations (which would also be a requirement for attributing intelligence) (3c vs 3d):

(3)   a.   She solved the problem intelligently

        b.   ?? The equation came out intelligently

        c.   The dog opened the door intelligently

        d.   ?? The mechanism / the key / the wind opened the door intelligently

These restrictions might be attributed to requirements that originate with the adverb *intelligently,* e.g. requirements that are the preconditions for an individual's being *intelligent.* First and foremost, of course, it is the events that have different properties. We can say that only some of them contain agentive components. The question is whether an adverb like *intelligently* makes reference to traits that are internal to the agent as an individual. So the question whether manner adverbs can have at least some orientedness features is actually not so easy to decide. One point that can be made on the basis of the above considerations, however, is that there is a group of adverbs which crucially differ from manner adverbs in that they do not stand in such an opaque

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level predicate, while the adverb in (2a) states an episodic quality — and this seems to be the reason for the lack of an implication from (2a) to (2c).

relationship to x-predicates. Consider the use of *angry* in (4) (repeated from (9f) of chapter 1):

(4)   He angrily broke the door open

The adverb in (4) above **must** be understood as saying that the agent is angry, and for this reason it cannot be a manner adverb. I therefore call it a "transparent" adverb (i.e., transparent with respect to its adjectival base).[5] This kind of meaning often arises when an adverb of emotional states occurs in a position before the verb, but it is not confined to this position. Here are a few more examples for this peculiar type of adverb. Their special status is evidenced by the possibility to assert the state of an individual for an extended period of time (a property not shared by the manner adverbs in (5d) and (5e)):

(5)   a.   John left sadly, and he was still sad when he was walking down the street

        b.   John angrily wrote a letter to the editor, and he was still angry when he posted it

        c. (?) John gave the talk nervously and he was still nervous during the question period

        d.   ? John opened the bottle carefully, and he was still (being) careful when he poured the wine

        e. ?? John defended his thesis cleverly, and was still clever at the party.

Given this behaviour, transparent adverbs are easily identified as oriented. However, a strange problem now emerges: If the adverb conveys exactly the same predication of an individual that is provided by its x-predicating adjectival variant, then why is it an adverb at all? What else does it assert besides the emotional state of the individual? To be sure, it is possible to use x-predicates as VP-adjuncts (these are the so-called "depictives"), but in such a case we do not expect, and in fact do not find, adverbial morphology. Thus, to understand oriented adverbs of the transparent type, we have to learn more about the distinction between adverbs and depictives. Note the intriguing minimal contrast in (6) (this whole issue will be taken up in chapter 5):

---

[5] In the literature on attributive (ad-nominal) modification, modifiers, i.e. A's, that allow the entailment [A N](x) $\rightarrow$ N(x) are usually called "transparent". I hope this completely unrelated usage of the term "transparent" in the sense of "non-intensional" will not interfere with my usage of "transparent adverb".

(6)   a.   John left the room sadly   [transparent, non-manner reading]

          b.   John left the room sad

Finally, let me add a remark concerning the adverb *heavily* in (7), which poses a problem similar to that of the data in (5) but with an additional quirk:

(7)   a.   They loaded the cart heavily

          b.   It was raining heavily / He smokes heavily

In (7a) and (7b), we seem to have two different adverbial variants. (7b) contains a manner adverb, with a meaning approximately like "intensely". The adverb in example (7a), however, does not have the same meaning. One indicator for a lexical difference that underlies the two examples can be seen in the fact that the usual German translation of *heavy, "schwer",* does allow the use (7a) but not (7b) (in the latter case you would have to use *stark ("strong")):*

(8)   a.   Sie beluden den Wagen schwer (= 7a)

          b.   ?? Es regnete schwer (It rained heavily)

                    ?? Er raucht schwer (He smokes heavily)

Thus, the use of *heavily* in (7a), and its German counterpart in (8a), seems to rely on the adjective's concrete meaning of heaviness in the sense of having much weight (it is of course very tempting to think of weight, given that this adverb occurs in the context of the verb *load).* As such, it would seem, the adverb *heavily* can only be a predicate of things, not events. Abstract entities such as events simply have no weight. This reasoning makes (7a) appear even more mysterious than (5), because, on the one hand it should apply to an individual, but on the other hand it is unclear where this expected individual could be found (the analysis of this adverbial construction is the topic of chapter 3). On the base of the preliminary considerations offered here, we would already expect that (7a) also falls into the group of oriented adverbs, even if we cannot specify at present how it derives its orientation.

      This preliminary inspection of entailments on individuals has thus arrived at the following picture: It is a characteristic feature of manner adverbs to stand in a fairly

opaque relation to their corresponding x-predicate, while a number of other adverb types give clear indications of an x-related meaning component. These are, in the first place, certain adverbs formed from psychological predicates (like *sad)* and obviously also adverbs of the type *heavily.* It is important to note that in all cases the paraphrase with the noun *manner* is impossible:

    (9)   He angrily broke the door open

        # ?   He broke the door open in an angry manner

    (10)   They loaded the cart heavily

        ?? They loaded the cart in a heavy manner

A potential third case in point might be the "subject-oriented" adverbs mentioned at the end of chapter 1; however, we don't yet know what kind of x-related meaning component they have and how it can be related to other variants of the same adjective. Obviously, a closer lexical analysis will be essential for making headway in this field. A step that we can and should make before tackling the lexical issues, however, is to see which other semantic and grammatical correlates can be found for the different orientation properties that have been outlined so far.

2.1.2. Adverb Classes and Syntactic Distribution

a. Manner and Other VP-Adverbs

The various types of adverbs that have been cited in this and the previous chapter often seemed to appear in different word order patterns. In this section, I want to give an overview of how the word order patterns with adverbs are to be interpreted structurally, and what consequences this has for the identification of adverb types. Not all the fine points of adverb syntax will be of interest here; the following discussion is centred on the identification of semantic and distributional types. We again start out from the relatively well-known type of manner adverbs and go on to compare other types of adverbs to them.

In a classical work by Jackendoff (1972), two major classes are distinguished on the basis of distributional evidence. To describe this distinction, let us first concentrate

on modifiers that occur to the left of the verb. At first sight, it may seem that almost all kinds of adverbs can precede the verb in English. However, sentences with several auxiliaries show that we can in fact distinguish (at least) two classes: Certain adverbs can precede or follow the finite auxiliary, but cannot follow a nonfinite auxiliary. These are called "sentence adverbs" in Jackendoff (1972). In contrast to this class, there is another class of adverbs that appears only immediately before the main verb even in the presence of auxiliaries — these are called VP-adverbs by Jackendoff. This class comprises manner adverbs, but maybe also others.

(11a) Sentence adverb

i.		He	will probably have	read the book
ii.		He	will	have (*probably)	read the book

(11b) VP-adverb

i.	(%)	He	will	have completely	read the book
ii.		He	will (*completely) have	read the book

So, in a sentence with only a lexical verb the preverbal adverb position is structurally ambiguous. We can assume that the preverbal position of manner adverbs reflects adjunction to the left of the main VP while sentence adverbs are adjoined higher up. The traditional terminology is maybe somewhat unfortunate, because non-modal auxiliaries like *have* and *be* can be assumed to belong to the category V and to project VP's as well. It is therefore the crucial property of "VP-adverbs" that they occur in the projection of the **lexical** verb. Admittedly, the immediately preverbal position is a marked option for manner adverbs. Manner adverbs in this position are usually considered somewhat infelicitous if there is little material following the verb, but they improve as postverbal modifiers are added (cf. below in connection with example 22). Moreover, it is not clear whether all manner adverbs behave alike with respect to the preverbal option. Jackendoff's own example, the manner adverb *completely* is not considered fully acceptable in preverbal position by Quirk et al. (1985). Other adverbs from other lexical classes might be somewhat better in preverbal uses (e.g. *She carefully read the paper).*

Turning to postverbal positions, we find that manner adverbs can also be inserted between the verb and oblique constituents (PP's) that follow. All in all, we thus get the

following surface slots for manner adverbs (the position marked by (*) is not available in English, this is the well-known "adjacency effect"):

(12)   John (quickly) threw (*) the book (quickly) into the drawer (quickly)

Let us briefly consider the syntactic structures that underlie these word order phenomena. In the recent syntactic literature, evidence has accumulated for a layered structure of the VP in English. Models of this kind were first proposed for double object constructions by Larson (1988) (under the heading of "VP-shells"); later other researchers elaborated on this idea to explain such phenomena as:

- the invariable ordering in VO and OV-languages of Indirect Object, Direct Object and Oblique Object
- particle stranding in English, or (last but not least):
- adverb positions

(See for instance Pesetsky (1989), Johnson (1991), Bowers (1993), Costa (1996), Haider (1997), among others). For concreteness, I introduce Bowers' (1993) proposal in some more detail. Bowers proposes the following positions for the verb's arguments: Oblique Objects (such as certain PPs in English) are projected as the complement of the verb, with Direct Objects as the specifier of the resulting VP. The Subject originates in the specifier of the next higher layer, which is called "predication phrase" (PrP) by Bowers and assumed to be a functional category. In a sense, however, we could still think of it as part of the "extended VP", because it performs a function in the projection of the verb's lexical properties and is not related to sentence-level functional categories such as tense or agreement.

The verb moves from the lower head position to the higher one. It would take us too far astray to discuss all the arguments that support such structures,[6] so let us just consider the following structure (which shows the state of affairs before case-driven movement of the subject), and let us then focus on how this structure can be employed to explain the syntactic distribution of adverbs:

---

[6] Here are some of the relevant points in brief: The structure can be used to explain why the surface order in both VO and OV-languages is Direct Obj before Oblique: In OV languages, the verb is generated to the right of its oblique complement and does not undergo movement; in VO languages, too, the base position of the verb is closer to the Oblique than to the Direct Object (this point is argued for by Haider (1992, 1993). The option to have a verbal particle follow the direct object while the verb precedes the object, is explained by the option to strand the particle in the verb's base position (e.g. Johnson 1991). As a further point, Kratzer (1994) argues that adjectival passives in German can be adjectivisations of a VP that, however, has to exclude the Subject. Hence, it must be generated in a separate projection outside.

(13)

```
                    PrP
              ┌──────┴──────┐
             NP            Pr'
          Subject      ┌────┴────┐
                      Vᵢ        VP
                            ┌────┴────┐
                            P        V'
                        Direct Obj ┌──┴──┐
                                  tᵢ    PP
```
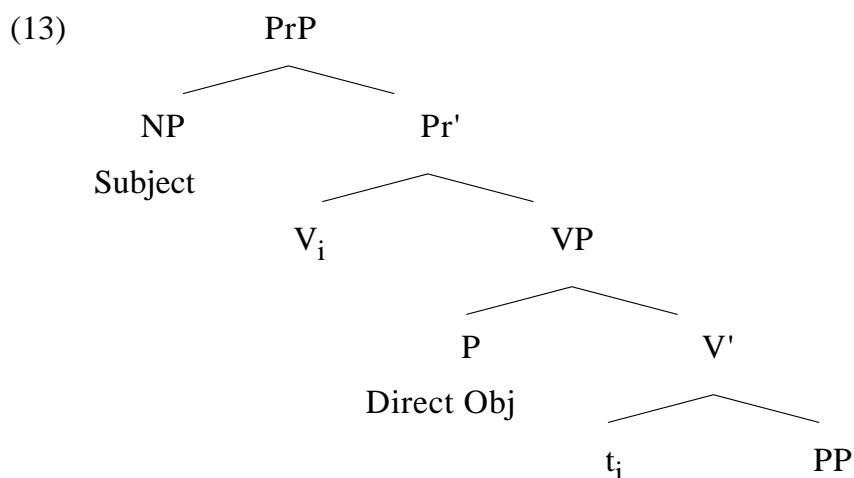
Bowers proposes that adverbs are always adjoined to intermediate projections, and that adjunction may be to the left or to the right. With left adjunction of the adverbs, we get the tree in (14), whereas right adjunction gives rise to the alternative positions indicated by the dotted lines — it can be seen that the resulting order is the one in (12) above:

(14)

```
                    PrP
              ┌──────┴──────┐
             NP            Pr' - - - - - - - - - - - - - - - - - - - - \
          Subject      ┌────┴────┐                                     \
                     Adv        Pr'                                  (Adv)
                            ┌────┴────┐
                           Vᵢ        VP
                                ┌────┴────┐
                                P        V' - - - - - - - - - - \
                            Direct Obj ┌──┴──┐                   \
                                      Adv    V'               (Adv)
                                         ┌────┴────┐
                                        tᵢ   Oblique Complement
```
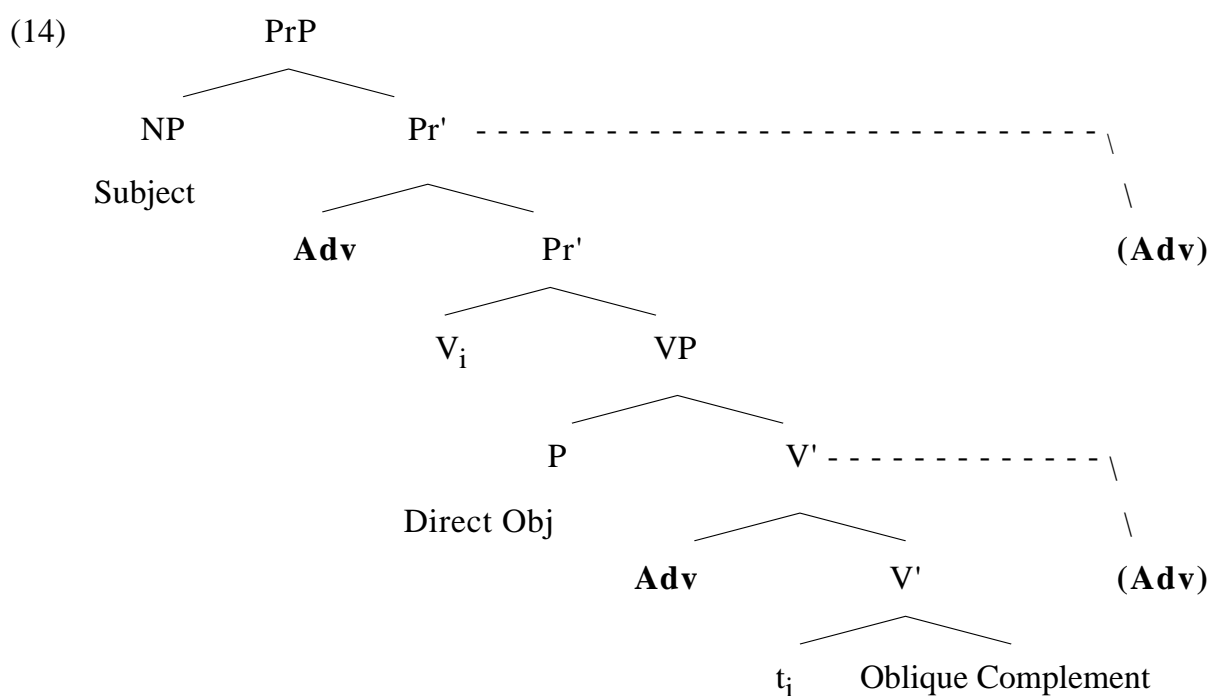
Bowers (1993) notes that there are adverbs which, from the backdrop of his system, can only occur in the VP proper, i.e., between Direct Object and Oblique (if there is one), or after the verb in any case. Note, however that the absolute final position is structurally ambiguous. His examples involve the adverbs *perfectly, poorly, beautifully:*

(15) a.   John learned French perfectly

   b.   * John perfectly learned French

(16) a.   Bill recited his lines poorly

   b.   * Bill poorly recited his lines

(17) a.   Mary played the violin beautifully

   b.   * Mary beautifully played the violin

It is not the aim of the present work to provide a complete overall classification of adverbs, but we can see that resultative adverbs, the type *heavily* as in (18a), seem to fall in the same class with the examples (15) to (17) — but the reading in (18b) doesn't.

(18) a.   They loaded the cart heavily / *? They heavily loaded the cart

   b.   It was raining heavily / The men were heavily smoking

As Bowers observes, other adverbs are not so selective as to their position in the extended VP, and from our perspective we would add that many typical manner adverbs belong to this latter group:

(19) a.   Bill slowly recited his lines

   b.   Bill recited his lines slowly

There do not even seem to be clear meaning differences connected to these two orders.[7] Hence, the difference in orientation properties between the type *heavily* and normal manner adverbs is paralleled by a difference in syntactic properties.

b. Transparent Adverbs

Transparent adverbs derived from psychological predicates also have a characteristic syntactic distribution that sets them apart from manner adverbs. Consider the word order patterns in the following examples:

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[7] This claim runs counter to Bowers (1993) who assumes that particular variants of adverbs can only be licensed with particular nodes, and therefore claims that all positional differences entail semantic differences.

    (20)   a.   He angrily broke the door open

            b.   He forwarded the letter angrily to his solicitor

            c.   He read the review of his book angrily

In all of these cases, we do not (necessarily) get a manner interpretation, to judge from the options of a paraphrase with a *manner-* PP. These adverbs also seem to pass the test in (5), i.e. they can be combined with the assertion of a prolonged existence of the mental state in question. Parallel to these distinctive properties, we now also note a certain freedom in syntactic position in the examples in (20). On the surface, this would not speak against the assumption that these adverbs pattern with manner adverbs syntactically: The positions that are occupied by *angrily* in (20b) appear to be precisely those that have been identified as possible slots for manner adverbs in (12) above. However, on closer inspection the transparent adverb is found to have properties that set it apart from manner adverbs. First, recall that manner adverbs seem to have a preference for postverbal position; putting them in front of the verb is a marked option and must usually be enforced by the appearance of other postverbal material of a certain heaviness (Quirk et. al 1985) (the sign ">" means "is preferred over"):

    (22)   a.   She walked carefully > ? She carefully walked

            b.   She carefully walked on the ice = She walked carefully on the ice

With transparent adverbs like *angrily* there is, first, no similar restriction against preverbal position, and second, the preference actually seems to be reversed sometimes (more examples will be found in chapter 5). This is brought out quite clearly by examples (23 a-b), which seem to yield a manner reading only in final and a transparent reading only in preverbal position — however, (24) and (25) seem to indicate that the difference can be less strong at times :

    (23)   a.   John shouted at them angrily   (manner)

            b.   John angrily shouted at them   (transparent)

    (24)   He angrily left > ?/# He left angrily (manner interpretation)

           He angrily read the review > (?) He read the review angrily

(25) He sadly discovered a mistake > ? He discovered the mistake sadly [8]

Also, we have to pay attention to the kind of structural position that the preverbal surface slot actually represents. As shown above, preverbal manner adverbs are attached to the highest segment of the extended VP (e.g. PredP in Bowers' 1993 theory). As a corollary, manner adverbs invariably appear under negation. The behaviour of transparent adverbs in this respect is not uniform, but sometimes examples can be found in which they precede auxiliaries and negation:

(26) He angrily didn't answer the letter

So, although the syntactic characteristics of transparent adverbs are hard to pin down, they can be separated from manner adverbs in this respect, too.

c. Agentive Adverbs

The last type of adverb to deal with are agentive (or "subject-oriented") adverbs. Since Jackendoff (1972), they have been grouped under sentence adverbs. If this is correct, we expect that the manner and the agentive variants of adverbs like *stupidly* should be in complementary distribution. In the following, I am going to examine this question in more detail. The auxiliary test is not very conclusive here, but at least doesn't contradict the expectations:

(27) (?)   John must have stupidly left through the backdoor
              // John could not stupidly have left through the backdoor, could he?
       (?)   John must have secretively left through the backdoor

Agentive adverbs can also occur within transitive gerunds as in (28-29). These gerunds clearly allow agentive readings of adverbs in an immediately preverbal position (example (28) is taken from Jackendoff 1972):

(28) John was horrified at Violet's stupidly driving the car off the cliff

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[8] For unknown reasons, VP-adverbs generally do not sound good if they follow an indefinite object, therefore, in this

(29)   John's having stupidly forgotten his keys

However, manner adverbs in gerunds invariably have to follow the head, i.e., the "preverbal" position in gerunds is for some reason never available for manner adverbs. So the complementary distribution is actually saved in this type of example. It is commonly alleged that gerunds do not allow the addition of sentence adverbs at all (cf. Zucchi 1993 and references cited there):

(30)   * John's fortunately taking a day off

Comparing the data in (28) to (30), we have to admit that gerunds seem to allow certain adverbs usually grouped under "sentence adverbs" (namely agentive ones) but not others. So the category of sentence adverb does not help in explaining the deviance of (30), and this sentence can in fact not be used to argue that verbs in gerunds project a VP but do not project up to the IP level (as is done in Zucchi 1993). We have already observed that the category feature of VP as such cannot be something that excludes the adjunction of "sentence" adverbs" anyway. So I conclude that, first, gerunds confirm the distributional distinction between agentive and manner adverbs, and that, second, the absence of *fortunately-* type sentential adverbs should find a semantic explanation, not one in terms of the syntactic categories they would adjoin to (IP vs. VP).

Turning to the postverbal adjunction sites, we find that agentive adverbs are indeed excluded from the sentence-final position that is often the preferred position for manner adverbs. In other words, sentence-final adverbs are never ambiguous between a manner and an agentive reading (as opposed to "preverbal" adverbs in simple clauses):

(31)   John lied to me stupidly   (only manner)
(32)   John dropped his cup clumsily (ditto)
(33) ?I relied on her stupidly   (deviant because no manner interpretation is available)

But now consider sentences in which an adverb occurs between the verb and an oblique constituent. In this position, we sporadically do find cases that have to be grouped with the agentive reading. The example (34) below is given somewhat inadvertently in Johnson (1991), where it is simply meant to illustrate possible adverb positions in a

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example, I have switched to a definite NP. The same phenomenon is observed with manner adverbs.

layered VP. However, if paraphrase relations with the agentive adjective construction are accepted as decisive, *stupidly* must be an agentive adverb here; the same goes for the other examples:

(34) I relied stupidly on Jane

(35) The soldiers fired cruelly at the demonstrators

(36) She asked tactfully after her children (...and not after her dead aunt)

To repeat, examples of this type crop up only sporadically, and it is not clear what makes them possible in those particular cases and not in others. Still, these data show an important point. Even those examples that allow an agentive adverb in the inner position between direct object and PP become unacceptable as soon as there is no PP following:

(37) ?The soldiers fired cruelly

The point is that the adverb sits in the same absolute position in both the acceptable and the unacceptable examples. This is what we have to conclude from the VP structure sketched earlier. The structure given in (14) has shown that left-adjunction has to be assumed for an adverb if an oblique follows it; and likewise, if there is only an adverb that follows the direct object, left-adjunction (viz. to an empty VP) cannot be excluded. If it is true that the adverb is in one and the same adjunction site and its acceptability only depends on the amount of material following it, then the licensing of the adverb cannot depend on absolute syntactic locations.

An alternative to the syntactic licensing approach that suggests itself is the assumption that prosodic requirements are at play in the licensing of agentive adverbs. To be sure, there is always a way to save examples with agentive adverbs in final position, namely to use the adverb with comma intonation. So obviously, a major restriction is that agentive adverbs simply cannot be the carrier of sentence accent. This is the factor that discriminates between the acceptable example (34), and the unacceptable (33): In a collocation of verb plus manner adverb, the manner adverb receives neutral stress (as observed by Cinque 1994), while in examples like (34) they can be deaccentuated. With comma intonation, an agentive adverb is no longer part of the clause with regard to its accentuation and its information structure. Semantically, we have two sentences. So saving (33) by comma intonation is the same phenomenon as the

tendency of this type of adverbs to be used as parentheticals. It is intriguing, in this connection, that agentive adverbs are so well-suited for parenthetic use; this is something that distinguishes them from manner adverbs, and surely bears on their semantic analysis (cf. chapter 4).

On the whole, one can see that the concept of sentential vs. VP adverb is of little help in understanding the properties of agentive adverbs. We may continue to distinguish between "typical VP-external readings", and "typical VP-internal readings" of adverbs like *stupidly.* However, it is noteworthy that the only strict and exceptionless requirement that can be identified as governing the syntactic distribution of agentive adverbs concerns intonational properties, not syntactic adjunction sites per se. Adding to this the observation that agentive adverbs have a certain inclination for parenthetical use, we do not have very much reason to treat them as sentential operators — which would be the prototypical semantic translation that corresponds to the concept of sentence adverb. But still, agentive adverbs have been shown to be a distinct syntactic class, too, for they exhibit a unique pattern of distribution even though there is no single unique adjunction site for them.

This concludes our brief discussion of adverb syntax. The semantic classification of adverbs with respect to orientation and transparency is supported by the finding that each class is also characterised by a specific syntactic distribution.

2.1.3. The Distribution of Lexical Classes over Adverb Types

An important point that is implied in the above overview of adverb types is that the range of uses found with a particular adverbial form differs depending on the lexical class of the adjective that underlies the adverb. Let us summarise the results of the foregoing discussion from this angle. We are dealing with three lexical classes of x-predicating adjectives, which have been roughly described in the introduction: predicates of dispositions, predicates of psychological states, and a third class that could only be described, somewhat clumsily, as "external (non-mental) states" (such as *heavy, elegant,* and others). Admittedly, this latter class is not sufficiently characterised by this description as a coherent lexical class; the point is that some such adjectives yield an adverbial reading that I describe in the next chapter as a "resultative adverb", but I can see no immediate generalisation as to which lexical feature in the adjective might be

specially responsible for this use. (In fact, I will suggest later that the decisive semantic features have to be sought in the verb that appears together with resultative adverbs).

I would like to illustrate the connection between lexical classes and adverb types by showing the range of potential ambiguities of adverbs. Consider the following cases:

Psychological-emotional states (*angry, sad, happy, glad, proud, nervous* and others)

(38) a.   John shouted at them angrily   (manner)

      b.   John angrily shouted at them   (transparent)

      [c.   John left angry   (depictive adjective)]

Dispositions (*stupid, intelligent, careless, clumsy,* etc)

(39) a.   John answered the question stupidly   (manner)

      b.   John stupidly answered the question   (agentive)

Other, "external" properties   (*heavy, fine, elegant, beautiful,*   etc)

(40) a.   Mary elegantly dressed   (only manner)

      b.   Mary dressed elegantly   (resultative or manner)

Some explanations are in order: As for (38), depictives have been included although they are not usually viewed as adverbial. It is, however, a typical property of psychological adjectives that they allow this construction: IL-predicates never do, nor do most of the adjectives that appear in the "other / external" group. Also, the fairly subtle case of *elegantly* deserves some explanation: Both (40a) and (40b) in principle allow the interpretation that Mary acted in an elegant way when getting dressed; we might for instance think that *elegantly* says something about the way she is moving — this is the manner reading. For (40b), another interpretation is more prominent, however, which approximately says that Mary was dressed up elegantly afterwards. This is a kind of "resultative" reading that resembles the case of *heavily* discussed earlier in (7a), with the difference that the adjective *elegant* might rather seem to be a candidate for the type of "indifferent" predicates in the sense described in chapter one: The two adverbial variants seem to be describable by using the same lexical-conceptual notion of elegance.[9] So one might want to characterise the difference between the two adverbial variants as a difference in "construal" rather than content. This would mean that the variation

between these adverb types is of a very regular kind, and in later chapters we will see more examples for this.

Summarising the data in (38) to (40), we can say that each lexical class yields a manner reading plus one other adverbial reading that is found exclusively with the respective class. So, it can be seen that the different lexical classes of x-predicates allow us to predict specific ranges of **non-manner** adverbial uses of these predicates. It would thus appear that these non-manner variants stand in a closer correspondence to the underlying lexical meaning. Manner adverbs, on the other hand, can be formed indifferently from most adjectives of any of the lexical classes mentioned. It is tempting to draw the inference that "manner" is a notion that is separate from the lexical senses of the adjectives, and that manner adverbs are (or can be) derivatives of a specific process that can take various types of lexical meanings as its input and delivers a constant kind of output.

2.2. Adverb Formation and the Lexicon

After having established the classification of adverbs, I now want to consider the question of whether e-predicates, or more specifically manner adverbs, constitute independent lexical entries. In chapter one, I started out by sketching the maximally simple assumption that event semantics could make concerning the lexical meanings of manner adverbs, namely the assumption that the necessary predicates of events are simply listed as such in the lexicon, and that the specific "manner" sense would just lie with their lexical identity, their own specific way of being a "predicate of events". However, the uncovering of regularities in alternations between x- and e-predicates might make this position implausible: The systematic lexical alternations seem to enforce the formulation of a common conceptual-semantic core for such groups of variants, which would then be independent of the manner sense.

The key question, therefore, is the precise kind of relation that connects the various adverbs to the other uses of the same adjective. To lay the groundwork for this investigation, I now discuss various fundamental questions that bear on the lexical independence of adverbs: First, the potential lexical significance that lies in the

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[9] For *heavily,* the comparison with German in (7') seems to point to the conclusion that the two variants of manner and resultative adverb rely on nonproductive polysemy on the part of the adjective *heavy* .

morphological process of deriving adverbs from adjectives, and then the applicability of various approaches in the literature that try to deal with polysemy of adjectives.

2.2.1. The Role of Adverbial Morphology

Adverbial morphology as such is certainly not the key to the meaning shifts beween x-predicating and e-predicating uses. One can immediately see that with nominalised verbs, adjectival forms appear that convey the same meanings as manner adverbs:

(41)   to drive dangerously   //   dangerous driving

So the notions of e-predicate or manner modifier are independent of the morphological category of adverb. The alternation between x-predication and e-predication is not mediated by adverbial morphology but we rather have to look for a genuinely lexical-semantic process.

However, in another respect adverbial morphology is potentially significant, namely for the issue of the lexical independence of e-related uses. The view on adverbial morphology that prevails in the literature is that the derivation of adverbs from adjectives is an instance of word formation, or, to put it differently, that adverbial morphology is to be subsumed under derivational morphology. In the same vein, many authors also recognise "adverb" as a lexical category, perhaps as a "minor" one compared to N, V, and A. If adverb formation implied a change in lexical category, adverbs would certainly be able to qualify as independent lexical entries. Interestingly, however, closer inspection reveals that, contrary to widely held opinions, adverb formation does not even behave as a word-formation process. This finding will have repercussions on the lexical-semantic issue, which I will take up after the morphological discussion.

Opinions about adverbial morphology are shattered, and I am not aware of an attempt at a synopsis in the literature. All conceivable categories of morphological processes have in fact been proposed to analyse adverbializing affixes. Scalise (1984) seems to imply that English *-ly* is some kind of derivational morphology (a position more or less taken for granted without discussion by many others, e.g. Ramat & Ricca 1998). Many generative syntacticians, on the other hand, have defended the assumption

that the adverbialising affix is inflectional in nature, see e.g. Radford (1988), Déchaine (1993), Alexiadou (1997).[10] I think that some languages indeed give direct evidence that adverbial morphology can be inflectional, i.e., that it can be part of the inflectional paradigm of an adjective. For instance, Latin has a special ending for adverbs which varies depending on the inflectional class of the adjectival base:[11]

(42) adj.: iust-us   "fair, just"   adv.: iust-e
      adj.: fort-is   "strong"   adv.: fort-iter

The superlative affix *-issimus* switches both adjectives to the first pattern (the "o-declension"):

superlative adj.: iust-issim-us — adv.: iust-issim-e

superlative adj.: fort-issim-us — adv.: fort-issim-e

Instead of jumping to the conclusion that adverb morphology belongs to the realm of inflection, however, we should note that the opposition inflection vs. derivation does not exhaust the possibilities. For one thing, Zagona (1990) proposes that Spanish *-mente* is actually an instance of compounding, in view of examples like *honesta y francamente* "[honest and frank]-ly". Furthermore, in many languages adverbs can be formed by adding an independent particle to an adjective, whether they are otherwise "inflecting languages" (43) or not (44):

(43) IRISH: lách (pl. lácha)   "friendly" — adv.: go lách
(44) CHINESE:[12]   ta hen xiaoxin de pao

          he very careful PRT run   "he ran very carefully"

Finally, it should not be forgotten that adverbial marking can be just absent. This state of affairs is found in German, leading to the consequence that German does not formally distinguish (manner) adverbs from depictives:[13]

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[10] If adverbs are adjuncts, it is quite unclear what kind of syntactic mechanism could trigger inflection-like morphology on them. In the theories of Alexiadou (1997) and Cinque (1999), the answer can be given that adverb morphology is a kind of agreement phenomenon, for these authors assume that adverbs are not adjuncts but occupy specifier positions of special functional projections. (I do not have the space here to enter into a critique of this model)

[11] *-us* and *-is* carry the adjectival features "masculine nominative singular" for the "o-" vs. the "consonantal" declension, respectively.

[12] I owe the Chinese example to James Huang

[13] It is only VP-adverbs that are unmarked. Interestingly, agentive adverbs usually do carry special morphology. (See chapter four).

(45) GERMAN: Hans verließ den Raum traurig

              H.   left   the room   sad

            "John left sad / John left sadly"

The conclusion we have to draw in the light of such variation is that the function of adverbial marking as such allows no prediction as to the type of morphological process that realises it. Ironically, the entrenched view of adverb morphology as derivation is the only variant for which we are lacking any compelling direct evidence. Quite on the contrary: One thing that can be said for sure is that adverb morphology resembles inflection in that it is triggered by factors that reside in the syntactic environment, not in the lexicon. In this sense, even the English affix *-ly* patterns with inflection rather than derivation, for we find that it is dropped in compounds. Admittedly, there is only a small set of cases in English for which this point can be made. Since English does not have compound verbs, the only evidence comes from adverbial modification of adjectives, i.e. A-A compounds that involve a modificational relationship. The following examples show that adverbial morphology never appears inside compounds although it is often necessary with an independent modifier:[14]

(46)   fresh-ground   (vs. freshly ground; % ground fresh)

         free-floating   (vs. floating freely; % floating free)

         heavy-laden   (vs. loaded it heavily; ? loaded it heavy)

         quick-firing   (vs. fires quickly; % fires quick)

Some dictionaries list the modifiers in (46) as entries of their own with the category label "adverb". It is then said that these adverbs occur only in compounds, which certainly misses a generalization. Now, items in adverbial construction without the *-ly-* affix do occur, but this does not force us to regard the modifiers in (46) as adverbs, too — it only requires that the point about the examples in (46) is stated somewhat more cautiously: Adverbs without *-ly* can often occur in postverbal position in a colloquial style, whereas there is no such restriction on the use of the modifiers in compounds; and while it is possible for most final adverbs to carry the adverbial affix, this is not an

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[14] A counterexample that comes to mind is the word *wellknown.* However, note that the form *well* can also occur as an adjective in copula constructions (e.g. *He is well and alive*). It is true that it assumes a special meaning in this use, but this does not invalidate the conclusion that for matters of word-structure, *well* is indeed categorized as an adjective. Obviously, it is restricted in its syntactic distribution, but it is not at all uncommon for adjectives to be confined to certain syntactic environments. For instance, there are a couple of predicates in English which cannot modify nouns but which nevertheless must be adjectives since they can occur after the copula, like *drunk.*

option in compounds. Therefore, the first parts of the compounds in (46) are not to be classed with -*ly*-less adverbs

Moreover, adverb formation does not behave like a derivational process in some other, more general respects. Adverbs do not take part in the derivational interrelationships among N, V and A. There is a derivational process connecting any two out of the latter three categories — however, morphological adverbs entertain a special relationship with the category adjective and can only take adjectival bases. Additionally, adverbs do not normally undergo any further derivational process. So, all in all, adverb morphology shares the prototypical characteristics of an inflectional category: It is tied to a particular lexical category, it closes off the word, and it has a grammatical trigger, instead of a semantic or other kind of word-internal trigger.

Arguing that adverb morphology in English is not an instance of category-changing derivation is not to say that a lexical category of "adverb" does not exist. In German, we find a phenomenon that provides quite strong evidence for the existence of such a category: In some cases, words that are used as adverbs can undergo affixation that turns them into attributive (adnominal) modifiers. This is precisely what we would expect if adverb were a lexical category: It should then be able to function as input for derivational morphology. Here are some examples (the second affix -e in the examples is the regular inflection of the adjective and thus is not relevant for the argument):

(47)   a.   der dort-ig-e Botschafter
                 the there-AFFIX ambassador   "the ambassador there"

        b.   das morg-ig-e[15] Treffen
                 the tomorrow-AFFIX meeting   "tomorrow's meeting"

        c.   der vorher-ig-e Botschafter
                 the before-AFFIX ambassador   "the previous ambassador"

        d.   du bist allein verantwortlich dafür
                 you are solely responsible for-this
                 deine allein-ig-e Verantwortung
                 your sole responsibility

Two caveats are in order: First, this process is narrowly restricted. It does not apply to the majority of other lexical adverbs in German, like: *vielleicht* (perhaps) -

vielleichtig; gern (happily / sentence adverb) - *gernig; leider* (unfortunately) - *leidrig.* Second, the affix *-ig* otherwise serves to derive adjectives from nouns (e.g. *Freude - freudig* joy - joyful). Derivation of adjectives from adverbs like in examples (47a) through (47c) is mostly confined to adverbs of time and place, and these categories are known to have some affinity to a nominal status crosslinguistically. However, it is hard to see how *allein* (alone, sole), *vorher* (before) or *seither* (since then) could be nouns. Therefore, even if examples as in (47) are quite rare, they seem to establish the existence of a lexical category of adverb. From this background, it must be noted that all such evidence for adverbs as a lexical category comes from adverb types that form closed classes. Manner adverbs, or open-class adverbs in general, can still differ from these in their lexical status.

2.2.2. Lexicalisation of Adverbial Forms

Let us pursue the lexical-semantic consequences of the morphological considerations in the previous section. If manner adverbs were the outcome of morphological derivation, we could expect that they are able to undergo lexicalisation or a meaning shift independently of their adjectival base. What I mean by lexicalisation here is an instance of semantic drift by which the output of a word formation process (i.e. the output of derivation or composition) acquires an idiosyncratic meaning that cannot be predicted from its lexical base and the regular derivational process alone.

The topic of lexical vs. syntactic determination of adverbial morphology raised in the previous section is reminding of a discussion from the early days of generative syntax, namely the question of whether adverbs might be derived transformationally from underlying structures involving adjectival predication. In this context, Jackendoff (1977) argued that such a transformational account of adverbs is bound to fail, because there are adverbs that cannot be reduced to adjectival predication:

(48) a.   Actually, John cannot lose   (?? It is actual that ...)

        b.   This data virtually shatters the transformational theory

            (?? The degree to which this data shatters the transformational theory is virtual)

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[15] The form of the adverb is *morgen;* the *-en* is clipped due to affixation. (It seems that *-en* is a kind of fossilised pseudo-

What these examples show is only that there is no paraphrase with a predicative adverb. The adverbs in (48) are not lexicalised qua adverb, however, since there are attributive adjectival forms that can convey the same meanigs: e.g. *a virtual catastrophe.* We have to distinguish between the lexicalisation of specific word forms and semantic drift of specific readings that can then be expressed by different forms. If lexicalisation is to be used as an argument in favour of adverbs as an independent lexical class, then it would be necessary to find cases in which the newly lexicalised meaning is tied to an adverbial form. It is true, there are some such cases. Lexicalisation does happen if the new adverbial form serves the function of some "higher" sentential adverb, and it is also common with degree adverbs. A case in point might already be the adjective *actual;* another clear example in the area of sentential adverbs is the development of *hopefully,* which is now often used to express a sentential adverbial reading like "It is to be hoped that ...". There is neither an attributive nor a predicative adjective construction that can express such a meaning, therefore there are no adjectival counterparts for the meanings of the sentential adverbs *actually* and *hopefully.* Another example for lexicalisation is the degree adverb *pretty* as in *pretty much* — ironically, it is the non-affixed form that underwent a meaning shift while the adverbial form *prettily,* where it occurs, is consonant with the original meaning of adjectival *pretty.* So again, nothing follows from the existence of adverbial morphology per se.

We therefore have to acknowledge the central importance of a basic distinction in the area of adverbs: Certain adverb types form closed classes, and others, notably manner adverbs, open classes. Closed classes of adverbs can be augmented only via lexicalisation, and this fact itself indicates the existence of a lexical class of its own. The formation of manner adverbs, on the other hand, is always a regular process, and, as I have tried to show, it is not a process that is triggered by any word-internal, especially lexical-semantic factors. It is telling that manner adverbs never acquire additional readings not shared by their adjectival cognates (while it is already true by definition that transparent adverbs cannot exhibit such developments).

Typically, the output of derivation is susceptible to lexicalisation, and lexicalisation is what the opaque relationship between *actual* and *actually* above seems to suggest. However, there are no examples to be found for a similarly opaque semantic relation between adjectives and adverbial forms for manner modifiers, whatever we

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inflectional element)

may find for sentential or degree adverbs. Showing that manner adverbs do not independently undergo lexicalisation is not easy, though; it would be much easier to point to counterexamples if there were any. So let me outline what a counterexample would have to look like. Consider the English adjective *fast.* As an adjective, it has two major lexical variants: *fast* in the sense of *swift* and *fast* in the sense of *firm.* This range of meanings is obviously inherited by the adverb, so we have both the pairs *fast car* and *drive fast,* and *fast friendship* and *stand fast.* Now, in comparison to this, note that the derived noun *fastness* likewise inherits both senses of *fast,* but has an idiosyncratic third meaning ("secluded place"). Admittedly, this example is not perfect, since we are dealing with an affixless adverb here. But it should be sufficient to make clear what the line of reasoning is: If such a case of semantic drift of the output of affixation (as in *fastness)* is never observed with manner adverbs affixed with *-ly,* the view that they are products of word formation is discredited. Hence, they probably do not constitute lexical items of their own. Another potential example that contradicts the expectations of the word formation hypothesis might be the adjective *quick,* which used to mean something like "lively" in earlier English. The meaning of "moving fast" can be understood on this basis as a metaphorical extension. We could imagine that the generalised meaning could have developed exclusively with the adverbial form while the adjectival form could have retained the old meaning — but this is not what happened. Thus, we find that a manner adverb is always a regular reading of an adjective, and whatever there is to the semantics of a manner adverb must be part of the meaning spectrum of the underlying adjective.

2.2.3. Interim Conclusion

The morphological discussion in section 2.2.1. has shown that it is essential to distinguish between open-class and closed-class adverbs. Since the e-predicates at issue invariably seem to belong to open classes (because of their productive alternation with x-predicates), the relevant point for us is the finding that there are no indications that productive adverb formation is an instance of word formation. We have seen that the triggers for adverbial morphology are syntactic, not lexical.[16] Also, adverbial

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[16] This does not entail that adverb marking must be inflectional, an alternative is a category more on the functional end of the spectrum that is added to adjectives in the syntax, analogous to prepositions that introduce nouns in adverbial functions. This

morphology (with open-class adverbs) is tied in a way to the category A that makes it more similar to adjectival inflection. If this is so, adverb formation does not lead to the formation of independent lexical items (as would follow if it were classed with derivation / word-formation).

This view is supported by the consideration of possible idiosyncratic meaning shifts of adverbs (i.e. "lexicalisation" of adverbs). The fact that the adverbial form is unable to go its own ways in meaning shifts points to the conclusion that it does not represent an independent lexical item.[17] Hence, adverbial morphology as such has to be considered as semantically empty and does not give rise to new lexemes.[18]

This concludes the investigation of adverbial morphology. I started out from a semantic distinction between x-predicates and e-predicates, and the notion of alternations between them. The morphological distinction between adverbs and adjectives would have cross-cut this distinction, and the common assumption that adverb formation is word-formation would have suggested that this derivational process has lexical-semantic relevance. I have argued that this latter view is unfounded and that, therefore, the distinction between adverb and adjective does actually not interfere in the examination of the distinction between e-predicates and x-predicates.

When focussing next on the genuinely lexical relationships between x- and e-predicates, I will have to find a way of speaking about them that is neutral with respect to the categories of adverb or adjective. Hence, I shall present the case as an instance of lexical variation within the area of adjectives, and consider adverbial marking as a grammatical accessory for adjectives in particular structural contexts.

2.2.4. Meaning Shift via Empty Affixation?

Before we get to the topic of lexical variation proper, there is a kind of intermediary view that should be discussed first. In a pure form, it says that the meanings that underly adverbs (i.e. e-predicating uses of adjectives that are otherwise x-predicates) are indeed derived by affixation — the affix, however, is different from the visible element *-ly*.

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would fit in with the observation that the markers for adverbial function can be syntactically independent, viz. the case of the particles in (43) and (44).

[17] A certain degree of independence does exist for adverbs in so far as idiomaticity and gaps in usage are concerned. However, this is a weaker sense of lexical independence as compared to a difference in semantic content between variants.

[18] There are some remaining problems with the semantic significance of adverbial morphology, though, in particular in connection with minimal contrasts between depictives and transparent adverbs. See chapter five.

Pesetsky (1995) puts forward a proposal (if somewhat in passing) that has to be understood as a view of this sort. Pesetsky (1995) hypothesizes that adjectival uses like

(49) a. His bearing was proud

   b. Her behaviour was fearful

   c. Your remarks were angry

   d. His words were sad

come about by affixation of a zero morpheme to an adjective (Pesetsky 1995: pp. 66, 74-75, 88). He calls this empty affix SUG (as a mnemonic for "suggesting"). Already from the list of examples in (49), it seems that the semantic range of such attributive constructions is rather broad and encompasses more kinds of shifts than the one from x- to e-predication that we are after. But at least examples (49 a-b) exhibit a meaning shift that is quite similar to the derivation of manner readings. Maybe we would want to assume that it is this variant of adjectival meaning that forms the basis of morphological adverb?

   Pesetsky's proposal is placed in the context of a broader discussion of the role that zero affixation plays in grammar. A central tool in his investigation is the generalisation that zero-affixed stems do not allow further derivational affixes. Thus, various cases of blocked derivations are explained by the fact that zero derivation would have to precede them. Among other things, Pesetsky uses this generalisation to explain the inability of "suggestive" readings of adjectives like (49 a-c) to undergo nominalisation. For example, (50a) would be analysed as the ill-formed structure (50b):

(50) a. * his manner's proudness

   b. * proud+SUG+ness

Another case in point is the inability of adjectival passive participles to host adverbial morphology. Pesetsky suggests that the explanation lies in the classic idea (going back to Rochelle Lieber) that adjectival passives are derived from verbal passives via an empty affix, call it ADJ, which is here taken to be responsible for the blocking of any further affixation:

(51) a.   * frightenedly

b.   * [[frighten]$_V$+ed]$_V$+ADJ+ ly

Since the "suggestive" interpretation is assumed to involve affixation, it is blocked with adjectival passives, too:

(52) a.   * his attitude was frightened

b.   [[frighten]$_V$+ed]$_V$+ADJ+SUG

Alas, at this point Pesetsky's argumentation starts making very unwelcome predictions. Taking it all together, we must now conclude that adverbial forms like "proudly" cannot contain SUG, for otherwise they would have to be ruled out in a way completely parallel to the structure in (52b):

(53) * proud + SUG + ly

In view of the considerations that I have presented above, we would not want to assume either that it is the adverbial affix *-ly* itself that contributes the manner interpretation. But then, we have to fall back on lexical shift in order to derive the reading of the adverb.

While it is true that, in principle, lexical shifts in one language can be expressed via morphological derivation in another, we do not have any evidence that any kind of morphological process is responsible for deriving e-predicating uses of adjectives. In particular, it seems that Pesetsky's zero affixation account, on closer inspection, cannot be maintained: If it is contradictory for the adverbial case, there is no reason to assume SUG for attributive constructions either. The lack of adverbial forms with participles is certainly in need of explanation, especially in a theory that exclusively builds on semantics, but there are probably other ways to explain it (although zero morphology at first seems to give a neat account). For example, one might speculate that there is a clash in that adverbial and participial morphology are parts of different inflectional paradigms (verbal or adjectival, respectively) and thus cannot be stacked. The few cases of inflected participles that can be found would then require that the participial form has been lexicalised to an adjective.

All in all, we are left with the task of deriving e-predicating variants of adjectives as instances of purely lexical variation.

2.2.5. Approaching Lexical Variation: Alternations in Attributive Adjective Constructions

To rephrase the overview that has been given in the introductory chapter, there are three interrelated lexical questions that we have to answer:

• What are the regularities that lead to the alternation between x-predicating and e-predicating adjectives? In particular, do e-predicating variants still contain x-related meaning components?

• Are there different kinds of e-predicating adverbs with the same adjectival base?

• Is the reference to events inherent in the lexical meanings of adverbs/adjectives?

The first point leads to a formulation of the x-/e-alternation as an instance of rule-governed lexical variation with adjectives, while the other two points actually describe difficulties that interfere with this task. When focussing on the theory of lexical variation, it will be necessary to confine the discussion to the comparatively clear case of manner adverbs and to put aside the question of whether all other adverbs at issue are predicates of events; it will be possible to integrate these other adverb types into the picture only after a more detailed analysis of their semantic properties.

In the lexical semantic literature, adverbs have hardly played any role at all, but there is a considerable body of work on lexical variation with adjectives, and we have to ascertain in which respect this work might also provide tools for the analysis of adverbs. At this point, we can only try to clarify some fundamental questions; the applicability of the insights from the literature to our concrete cases can be fully discussed only in connection with the case studies in the following chapters. The main point that I want to discuss here is the distinction between two kinds of explanations for variation in adjectival usage. Let me call them the analysis by sense variation and by constructional variation, respectively.

a. Analysis by Sense Variation

It is already clear that the connection between x- and e-predicates is very regular. One variety of systematic polysemy that is particularly relevant in our context is the one that has been called *complementary polysemy* (in Pustejovsky 1995). This term refers to a state of affairs in which the various different uses of a word can be thought of as naming different aspects of one and the same complex concept. Classical examples are the different senses of the word *school* — which can denote a concrete building, an abstract institution, a collective of people etc. — or the word *book,* which can denote both the concrete volume and its abstract informational content. It is still a matter of debate whether, in these cases, the spectrum of variants can be generated by a completely productive, automatic process or whether it still involves a component of listedness (in addition to the manifestation of a recurrent pattern of connections between senses). My discussion of this family of approaches will be deliberately sketchy here. This is because such explanations have to rely very heavily on a fine-grained analysis of the lexical meanings in question, which is still mostly lacking.

A classic example of a theory that works with sense variation is embodied in Bierwisch's (1983) two-level theory of word meaning. Bierwisch (1983) proposes to analyse the different senses of *school* with the help of a distinction between "Semantic Form" and "Conceptual Structure". Semantic Form is to represent the shared semantic core of all variants, and Conceptual Structure a specification that is achieved on the basis of additional information, in a particular context. For *school,* Bierwisch sketches as a semantic core something like the following:[19]

(54)   x [x PERTAINS-TO W]
with W being a complex concept, roughly: "the whole of the processes of teaching and learning"

W is (obviously) to be regarded as a complex knowledge structure. In proceeding to Conceptual Form, x can be restricted to different (sub)sorts of individuals by introducing one out of a number of (universally available?) sortal predicates that serve to describe different aspects that are contained in the underlying complex knowledge structure:

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[19] In the German original, the relation PERTAIN is actually ZWECK, i.e. "purpose". I find this label a bit too narrow.

(55)   x [**institution**(x) & x PERTAINS-TO W],

x [**building**(x) & x PERTAINS-TO W],   etc.

This second step of restricting x, called Conceptual Shift, is not simply the resolution of vagueness,[20] since the outcome of this process is not one out of a couple of possible alternative specifications. Rather, the resulting variants serve to highlight different (complementary) facets of the same notion, which is, say, an institutionalised process going on in a special location (among other things). Let me leave the presentation of the approach at this general level and ask what it would mean to apply it to the problem of x-/e-alternations. There is a superficial parallel in that both the different senses of *school* and the x-/e-alternation yield words that predicate of different sorts of entities (although the difference between individuals and events is much more profound than the difference between, say, concrete buildings and collectives of people). Obviously, for this approach to work, we would have to find an underlying complex notion that unites both individuals and events and connects them. Let me give an example for how such an account might be implemented. We start out from the notion of a disposition as a complex concept. If *intelligent* names a disposition of individuals, it means a disposition for performing a particular kind of actions. So it could be argued that the notion of disposition is inherently relational and implies the identification of a class of actions (i.e., events) that manifest it. It could then play a similar role as the underlying W in Bierwisch's proposal for *school*. Whether this is actually a reasonable approach or not can only be determined by a closer analysis of the concept *intelligent* and related ones. Even if there is prospect of a solution along these lines for the problem of dispositional adjectives and manner or agentive adverbs, it must be admitted that it is far more difficult to think of a similar account for cases like transparent adverbs or resultative adverbs. So this line of thinking would seem to lead to a partial answer at best. Moreover, it suffers from the fact that differences between adverb types, such as manner vs. agentive ones, are still in need of clarification. (In fact, a major result of chapter 4 will be that it is not the e-predicating manner use that is paired with the dispositional adjective in the way just sketched.)

b. Constructional Variation: Pustejovsky's (1995) "Qualia Theory"

As mentioned in chapter one of this work, there are certain cases that appear to be just the reverse of the problem of oriented adverbs, and these cases have received a good deal of attention in the literature. Consider again examples like (56) and (57):

(56)   a fast car   /vs./   to drive fast

(57)   a beautiful dancer
        1. = a beautiful person, who happens to be a dancer
        2. = someone who dances beautifully

There is a whole family of proposals to be reviewed here under the heading of "constructional solutions", but the so-called qualia theory as described in Pustejovsky (1995) is probably the most prominent approach of this kind.

In Pustejovsky (1995), the problem posed by adjectives as in (56) and (57) is addressed not by assuming lexical variants of the adjective but by assuming a richer structure of the nominal meaning that the adjective applies to. Pustejovsky's goal is thus to dispense with sense variation of the adjective as far as possible.

To approach the model, let us make a detour and first consider an example that is not related to the semantics of adjectives — let us start out from Pustejovsky's (1995) discussion of variation related to the argument selection of verbs. We shall then see that the treatment of the variability in adjectival meanings makes use of precisely the same mechanisms. One of Pustejovsky's paradigm examples for variable argument-taking properties of verbs is the verb *begin,* which can take a VP or an NP complement:

(58)   a.   begin to read
        b.   begin a book

The two uses of the verb are strongly interconnected and of course cannot be regarded as an instance of accidental polysemy. What is more, we do not even have the impression that there is a shift of reference (as in the examples *school* or *book)*. Either of the examples in (58) can be used to refer to the very same event in the world, namely beginning to read the book. So the verb *begin* seems to speak about the inception of an

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[20] Although this actually seems to be what happens to the relation "pertain" / "Zweck" in this lexical entry. Still, the

action in both cases, in some way or other, and even if there is an alternation between a variant that selects an event description (VP) and another one that selects an object description (NP), we would not really want to say that the verb is ambiguous. Pustejovsky (1995) proposes an approach that allows him to state a unified semantics for all such variants of a verb. His basic idea is that the verb is completely unambiguous — it always requires its complement to provide a description of an event. However, the lexical semantics of nouns is designed in a way that enables them to conform to this requirement in a special way: The lexical entry of the noun does not flatly name its referent, but contains a list of so-called qualia, providing additional information that can come into play in semantic composition. Pustejovsky assumes a fixed list that comprises the following types of qualia information (cited from Pustejovsky 1995: 76; he actually calls them (constitutive etc) "roles"):

> CONSTITUTIVE QUALE: describes the relation between an object and its constituent parts
>
> TELIC QUALE: its purpose and function
>
> AGENTIVE QUALE: factors involved in its origin or "bringing it about"
>
> FORMAL QUALE: that which distinguishes it within a larger domain

The Formal quale is more or less what would be expected as the description of the denotation on standard views. Note, incidentally, that the formal quale does not appear to be designated or highlighted in any respect — at least formally, it is just one aspect among others. For *book,* we would have the following specifications (as can be seen, alternations that can be traced back to an underlying complex concept as in Bierwisch's example *school* would be integrated into the formal quale):

(59) book

   FORMAL: **hold**(y,x) [x: information   y: physical container]

   TELIC: **read**(e) (a,x   y)   ("books are for reading")

   AGENTIVE: **write**(e) (b,x   y) ("books come about by writing")

   ...

(I had to omit the CONSTITUTIVE quale here; it is not difficult to think of the constitutive parts that make up a book, so there is certainly something we could insert, but it is not quite clear to me how the list of features that could appear in this slot is delimited). We

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reference of the noun as such is not vague.

can summarise this approach by saying that an enumeration of several variants of *begin* is avoided by stating a richer meaning of the object *book*. The point is that the verb *begin* requires an event type, but nevertheless may be combined with the object *book* instead of a VP, for the needed event type can be found in the telic or agentive quale, even if absent from the formal quale. In this way, *beginning a book* can ultimately be construed as "beginning to read" or, alternatively, as "beginning to write" (and if the model were to go through, as nothing else). A summary on this general level is sufficient for our purposes, and I won't go any further into the details of the proposal.

The same basic idea is now invoked to account for alternations that involve adjectives with an underlying use as a predicate of events and a derived use as a predicate of individuals. Let us first look at the example *to go slow / a slow car.* The adjective *slow* is assumed to come in one single lexical entry, the predicate of events *slow(e).* If combined with a noun that refers to an individual, there would be a sortal mismatch, exactly as with *begin* followed by a noun. The clash is repaired by construing the event predicate with some other piece of qualia information. Note that, as the model stands, it is impossible not to modify a quale — we may just choose between FORMAL or others. The intended meaning of the noun-modifying construction could be described as a normal (in fact, "Davidsonian") intersective modification structure (see step 3. of (60)) that is derived as follows:

(60) 1. car: FORMAL: x
TELIC = [**go / be driven**(e)(x)]

2. slow: **slow(e)**

3. slow car: FORMAL: x
TELIC = [**go / be driven**(e)(x) & **slow(e)**]

I interpret this proposal as saying that the lexical meanings of both noun and adjective remain unaltered, while the outcome at the phrasal level is that the adjective is found in construction with, say, the telic quale of the resulting phrase instead of its formal quale. Our second example, that of *beautiful dancer,* can be analysed in a parallel fashion, the difference would only be that the adjective *beautiful,* being compatible with both individuals and events, can be anchored to the formal or to the telic quale of the resulting NP:

(61) a. dancer: FORMAL: x

                           TELIC = **dance(e)(x)**   (...)

      b. beautiful dancer: 1.   FORMAL = x   & **beautiful(x)**

                                    TELIC = **dance(e)(x)**

             or: 2.   FORMAL: x

                                    TELIC= **dance(e)(x) & beautiful(e)**

With this outline of the proposal, let us turn to a preliminary evaluation. What the qualia structure does is to add an additional set of propositions about the referential argument. The qualia labels, like TELIC etc, serve to express a particular relation between the referent and elements of such a knowledge structure; in fact it seems that TELIC is a label for descriptions that contain the referential argument of the noun in particular thematic roles. While world knowlegde would allow us to state almost any number of such additional descriptions, the model claims that statements about particular aspects of the referent can play a role for compositional processes. So while the content of the qualia is not so mysterious, a point that invites scepticism is the claim that, for every noun, we can single out a fixed set of bits of apparently encyclopedic knowledge that is actually counted as semantic content.

Moreover, the compositional processes that run on these qualia structures are not entirely transparent. Take the TELIC quale: What it introduces seems to be a generic or modal proposition. It is not clear how a predicate of events can be applied to this without further adjustments — hence, in order to combine noun and adjective, more seems to be required than merely set intersection. The problem is that all further details of how this might be accounted for are hidden in the label TELIC and in the ways in which modifiers find their particular types of qualia information. This leads to the question of whether adjectives are free to choose any quale, directed only by compatibility requirements, or wheter it can be a lexical property of an adjective to target a particular quale. So, are *fast* and *beautiful* "event modifiers", or rather "qualia modifiers"? Pustejovsky's declared opinion is the former (Pustejovsky 1995, p.254, notes 19 & 20). This, however, seems to lead to some empirical problems. The qualia model in fact offers a kind of lexical decomposition and in its present form predicts that all and only the kinds of information listed as the qualia can play a role in licensing modification relations. In this, the model seems too broad and too rigid at the same

time, a point that becomes particularly evident when we consider language differences. In German, it is doubtful whether an ambiguity like in (61) appears with *schön,* the normal translation for *beautiful.* It does arise, however, with another, similar adjective:

(62) a. beautiful dancer / ? schöner Tänzer (? as TELIC, ok as FORMAL)

  b. elegant dancer / eleganter Tänzer (ok for both TELIC & FORMAL)

There is only a fairly weak deviance in (62a), but it is an irregularity that is not predicted. It is doubtful whether a slight difference in word meaning between German *schön* and English *beautiful* can be made responsible for the contrast, for the confusing thing is that, as far as I can see, both the German and the English words are used as an event modifier in precisely the same way: The adverbial construction *schön tanzen* (dance beautifully) is perfectly acceptable in German as well as in English. If it is the e-related variant that underlies qualia modification, differences in attributive uses of *beautiful* would have to be mirrored in adverbial uses. Conversely, German does allow "qualia modifying" collocations that are not accepted in English. Consider the case of *platt ("flat"):*

(63) a. a flat tyre / ?? a flat bike / ?? a flat tractor

  b. ein platter Reifen / ein plattes Fahrrad / ?? ein platter Traktor

In German, *plattes Fahrrad* ("flat bicycle") can easily refer to a bike with a flat tyre, while, according to my informants, the same meaning shift does not seem to be possible in English (where "flat bicycle" rather seems to evoke the idea of a bike that has been run over by a steam-roller). Example (63b) is different from (62) in that it would require invoking a CONSTITUTIVE quale of "bike", i.e. reference to its parts. The notion of constitutive part is by far simpler than the one of TELIC. But the question arises as to precisely which description should be assumed to figure in this quale. If tyres are admitted as constitutive parts of bikes, they would have to be accessible in both German and English adjectival constructions, and also in both of the words *bike* and *tractor* alike. In view of data like in (62) and (63), it seems that a successful model of the alternations needs flexibility with regard to the type of information that can come into play.

Considerations such as these raise doubts whether the qualia theory can be successful in general. Still, if viewed in outline, Pustejovsky's proposal does have its merits. It is true that there is no way of explaining the meaning difference between the variants 1 and 2 of (61) without having recourse to the event concept of "dancing", and likewise the meaning of the collocation *fast car* can only be elucidated on the basis of an event of moving in which the car is, or can be, involved. So the main problem that remains is to see in which way these meaning connections should be stated.

c. Applying Qualia to Oriented Adverbs

For us, the point in discussing the theory of attributive modifiers is of course the question what we could gain from it for a better understanding of adverbial event modifiers. This now raises the question as to the qualia of verbs. And at this point, the proposals set forth in Pustejovsky (1995) are particularly disappointing, for what is offered in their place is essentially the standard lexical decomposition, as established by Dowty (1979). For an illustration, see Pustejovsky's lexical representation for the verb *kill* (with some details omitted since we are interested only in the qualia here):

(64) kill:

EVENTSTR = $[E_1=e_1:\text{process}; E_2=e_2:\text{state}; \text{RESTR} = < \quad]$

ARGSTR = $[\text{arg1} ...; \text{arg2} ....]$

QUALIA = $[\text{FORMAL} = \textbf{dead}(e_2, \text{arg2})$

$\text{AGENTIVE} = \textbf{kill\_act}(e_1, \text{arg1}, \text{arg2})]$

What Pustejovsky identifies as the qualia of *killing* is the information that the event culminates in the object's being dead, and that this is brought about by some unspecified action that devolves from subject to object. (EVENT STRUCTURE, in turn, does not serve to state the contents, but only the ordering and relative prominence of the subevents so identified). In brief, all available qualia information that could be used for redirecting modifiers is about the subevents.

It is actually conceivable that there are a few types of adverbs that are amenable to such a reconstruction in terms of modification of subevents. Since the earliest days of lexical decomposition, it has been proposed that the ambiguity of modifiers like *again*

can be explained as the optional application to either the whole verb or the resultant state alone (Dowty 1979, cf. Stechow 1996):

(65)   He opened the door again
          a. = The door had been opened before
          b. = The door had been open before

Dowty (1979) deals with the ambiguity by assuming two variants of *again* that are related via a meaning postulate (rendered here in a simplified form, cf. also Stechow 1996)

(66)   x,A,S   (A="action", S="state")
          □ again$_2$ [A(x) CAUSE BEC S(y)])   [A(x) CAUSE BEC again$_1$ S(y)]

Essentially, this meaning postulate serves to reconstruct a modifier that applies to the whole verb in terms of a modification of a subevent. It has a function very similar to the rules that transport a modifier of the verb to one of its qualia. In a similar vein, Parsons (1990) advocates an approach to modification that allows only modification of subevents; specifically, he analyses *wide* in *to open the door wide* as a modifier of resultant states, too. Parsons' analysis will be discussed in the next chapter, along with the question of whether it can be extended to yield a general account of such "resultative adverbs", as I am going to call them. So, even if this type of sub-modification can be assumed to exist, this kind of solution has been available already before the advent of qualia theory.

For the problem of relating transparent adverbs to a verb, on the other hand, and for standard manner adverbs that alternate with predicates of individuals, no solution is known, and qualia theory does not point to a new one either. Transparent adverbs could, of course, be predicated of arguments, and information about arguments is surely available in the lexical entry of the verb, but this would not explain the difference between such adverbs and depictives, or explain the existence of such adverbs to begin with. Concerning non-transparent adverbs like *intelligently,* restricting them to subevents would not help to explain how they alternate with x-predicates. Pustejovsky's verbal qualia denote the same sort of entity as the verb as a whole — a situation that is unlike the one we have encountered with nouns: The nominal qualia describe various

kinds of knowledge associated with origin and use of the individuals, but not strictly concepts about individuals.

In our further study of the subject of alternations with adjectives, we have to decide between two conclusions: Either shifts from x- to e-predication are not mediated by a "constructional" alternation that employs a constant underlying lexical meaning of the adjective / adverb (then, a remaining alternative would be polysemy in the style of sense variation), — or the constructional solution becomes viable by adding information in the verbal entry that is different from what Pustejovsky assumes to be the qualia information of the verb. As has been said above, we have little reason to employ the theory as it stands. It does not make the compositional processes fully transparent that allows underlying event predicates to function as modifiers of individual-denoting nouns, it does not account (so far) for limitations of productivity, and it is unclear whether the information that becomes relevant for modifiers can actually be limited to a fixed decomposition. Finally, if the account is to be transferred to adverbial modification at all, it could only be built on a kind of verbal qualia information that is different from what Pustejovsky proposes. Furthermore, we would probably need a representation of a flexible sort, a variable "script" for events and information that can be associated with them. (Although such a model would not have much in common any more with the theory as stated by Pustejovsky, we could still speak of "qualia" in the sense that "encyclopedic" information about the event is adduced). I confess that the solution I am going to offer is not any more explicit on the points that Pustejovsky's theory leaves implicit; however, the problem of overgeneration of readings inherent in Pustejovsky's model is a serious one, and so it will be appropriate to replace this theory by another approach that relies somewhat more on lexicalisation of different adjectival uses.

d. Larson's (1998) "Eventive Noun" Proposal

In a short recent paper, Richard Larson proposes another constructional approach to adjectival variation that bears some similarity to Pustejovsky's qualia-approach (although Larson makes no mention of the latter). Larson views the problem more from a compositional angle. However, he, too, starts out from the problem that many adjectives seem to be ambiguous between two readings, like *beautiful* in *a beautiful*

dancer. Larson discusses these cases from the background of the traditional assumption that such adjectives are ambiguous between an intersective variant (a predicate of individuals) and an operator. In a first step, Larson shows that the compositional behaviour of *beautiful* does not force us to assume that it is an intensional operator. Since this has not been in the focus of Pustejovsky's discussion but deserves interest, let me trace the argument here.

A marked property of the second reading of *beautiful* is the problem of "substitution failure". If we imagine a situation in which all dancers are also singers and vice versa, then the truth of a statement *Olga is a beautiful dancer* (in the sense "dances beautifully") does not imply the truth of *Olga is a beautiful singer.* This could be explained by an operator semantics, see (67 d):

(67) a. Suppose: {x: x is a dancer} = {x: x is a singer}

  b. Then: Olga is a dancer Olga is a singer

  c. But: Olga is a beautiful dancer **//** Olga is a beautiful singer

  d. **beautiful' (dancer')(o) // beautiful' (singer')(o)**

However, building on arguments given by McConnell-Ginet (1982), Larson disputes that the difference in the applicability of *beautiful* to dancers and singers originates from a comparison of who is a dancer or a singer in alternative worlds. There are other possible sources for the effect of substitution failure. Take the following example:

(68) a. Suppose: {x: x eats} = {x: x cooks}

  b. Then: Olga eats Olga cooks

  c. But: Olga eats fish **//** Olga cooks fish

  d. **eat' (o,f) // cook' (o,f)**

What makes substitution fail in (68c) can be shown by the following line of reasoning:
"'Whenever there is eating, there is eating **of something.** Likewise whenever there is cooking, there is cooking **of something.** But even if all the same people eat and cook, it still needn't be true that any of them eats and cooks the same thing. Hence the conclusion doesn't follow.' Here our explanation doesn't proceed by appealing to potential extensions in alternative worlds; rather it analyzes the predicate more finely in this world." (Larson 1998: 151)

This is precisely the line of argumentation that event semantics uses concerning manner adverbs: Verbs like *sing* and *dance* do not just denote sets of individuals, they have an extra argument besides their agent argument, the event. So even if the people who sing and dance are the same in a particular situation (or in every situation), the events are not the same, and this means that there are never entailments of the kind that *sing beautifully* would entail *dance beautifully.*

Larson's main proposal is now that substitution failure with adjectives like *beautiful* in (67) might be of a piece with substitution failure in (68), or with adverbs — in other words, Larson hypothesizes that it can be traced back to an additional argument of the noun, viz. an event argument. In outline, Larson's analysis looks as follows: The noun *dancer* in example (67) above is actually to be analysed as a relation between an individual and an event. The adjective *beautiful* can be a predicate of individuals or events; in each case it has to be relativised to a comparison class C (but comparison classes alone are not what explains the ambiguity of the adjective). The unusual assumption that certain nouns have an event as an internal argument of course raises the question as to the localisation of the event quantifier in the NP. This then becomes one of the central points of Larson's paper, but in our present context we cannot devote so much space to this discussion. To put it briefly, Larson assumes — adapting Chierchia's (1995) proposal for individual-level predicates — that the noun *dancer* is not inherently "generic"; it just describes the agent of a dancing event. The generic quantifier that takes care of the e-variable is located in the syntax, for it has to have scope over the e-variable in the adjective. Putting aside speculations as to its precise location in the NP, let's just consider the resulting semantic partition that Larson proposes.[21] As can be seen, the adjective forms the nucleus, and the whole structure states that in situations in which Olga dances, her dancing is typically beautiful:

(69)   Olga is a beautiful dancer

   GEN_e [dancing(e, olga)]; [beautiful(olga, C)]   ("Olga is beautiful")

   GEN_e [dancing(e, olga)]; [beautiful(e, C)]   ("Dancing is beautiful")

The feature that this approach has in common with Pustejovsky's is the proposal that the allegedly "non-intersective" reading of adjectives like *beautiful* is reduced to intersection

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[21] To reconcile (69) with the surface order, Larson assumes movement in the NP: English adjectives are said to have a postnominal base position.

with respect to a variable other than the referential argument of the noun. Larson's approach does not rely on an undefined label "telic" but offers a more explicit account of how the adverb targets information of a generic nature. On the other hand, the lexical semantics of the noun has now become somewhat obscure (much more than in Pustejovsky's representation), and the "thematic role" of the event argument in the nominal is not clarified any further.

Unfortunately, this approach offers even less prospect of being applicable to a theory of oriented adverbs. For one thing, there is no doubt that verbs have additional individual arguments, but it is still not clear why predication of such an individual argument would lead to an adverbial reading. Also, it is interesting to see that Larson's proposal depends on exactly that kind of lexical stipulation that I want to explain in this work, namely the fact that alternations between x- and e-predicating uses occur with certain adjectives.

Actually, both of the frameworks reviewed so far assume that e.g. the adjective *beautiful* can modify either an event or an individual, and both frameworks posit ways in which a noun can make both referents accessible (via qualia information or an additional argument). Then, the adjective can be applied in two different ways, and this optionality with respect to predication has usually been taken for an intersective/non-intersective ambiguity. Furthermore, there are many unambiguous adjectives, which always behave as standard intersective modifiers with a noun that denotes individuals (possible examples are *aged, married,* etc, with no effects of substitution failure). These are now identified as adjectives that can be predicated of individuals only. Finally, unambiguous adjectives that never behave as intersective modifiers are assumed to be invariably predicated of events (like *former)*. This is all very well as far as it goes. As for the ambiguous group, I have argued already in chapter one of this work that the adjective *beautiful,* Larson's paradigm case, can indeed be considered as sortally indifferent in the desired way. However, what about the following cases, which Larson takes to be parallel:

(70) a. Kathrin is an intelligent student
      b. George is a skillful manager

If Larson were be right that the same type of ambiguity arises here[22] (say, an intelligent person who happens to be a student /vs./ someone who studies intelligently), one has to posit the variants *intelligent(x)* and *intelligent(e),* but this time it cannot be assumed that it is one and the same lexical sense of the adjective that is just applied to different referents. The lexical-semantic relationship between these two variants is in fact fairly obscure, as I have tried to demonstrate earlier.

This fact makes Larson's proposal unsuitable as a starting point for a theory of oriented adverbs, for it is precisely the existence of the alternation *intelligent(x)* vs. *intelligent(e)* that is to be explained. Note also that the options that it presents for modifiers are more narrow than in Pustejovsky's model because Larson only makes available further argument variables. In contrast to this, we have seen that qualia structures make accessible various kinds of constitutive parts (such as parts of things in the case of noun meanings or subevents in the case of verb meanings), which could not plausibly be obtained as additional arguments.

This negative conclusion notwithstanding, we should note a point that Larson (1998) makes in favour of distinguishing different types of shifted uses for adjectives. Consider (71) (examples a. and b. are taken, and c. is adapted, from Larson):

(71) a. That dancer is beautiful (only intersective, not interpreted wrt to dancing)
      b. That friend is old   (only intersective; not: "old friendship")
      c. That car is fast.   (interpreted wrt to "going fast")

In Pustejovsky's framework, all of these adjectives would come out as modifiers of (non-FORMAL) qualia. However, some of these "eventive" readings found with attributive adjectives are lost in predicative adjective constructions, while others are retained in predicative constructions. So Larson concludes that not all examples may be amenable to an analysis that relativises nominals to events. We have to distinguish between adjectives that are predicated of events and become nominal attributes only via a special compositional procedure and other adjectives that undergo a lexical shift which converts them into predicates of individuals. Given (71c), *fast* might be an example of the latter kind. With regard to adverbs, we have to reckon with the same two possibilities.

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[22] Larson does not discuss whether these examples really must be considered ambiguous (or whether they could be just vague), nor does he raise the question of whether comparison classes could be responsible for the effects that are felt (as Klein 1980 presumes).

The last point mentioned above points to a certain weakness in Larson's (1998) approach: It attributes most of the phenomenon of non-intersective doublets of modifiers to a more complex semantics of the nouns. This means that certain nouns have to be assumed once and for all to come with an additional event argument while others don't. This seems difficult to reconcile with the variability of judgements, the existence of gaps and crosslinguistic contrasts with regard to modification possibilities; so most of the problems raised for qualia theory in (62) and (63) also apply to the eventive noun approach. From this perspective, it would seem desirable to have an approach that is more flexible in that it does not require us to insert any such fixed components in the lexical meaning of nouns.

e. Lexical Pragmatics: Blutner (1998)

The theory set out in Blutner (1998) is primarily concerned with problems of a somewhat different nature than those addressed by Pustejovsky (1995), but Blutner's objective is very tightly connected to the issue of adjectival variability as discussed above. In fact, the delimitation between these two areas appears to be an additional point in need of investigation.

Blutner starts out from examples such as those in (72). His point is that there is a difference between defective modification structures that are due to true category mistakes (as (72e-f)) and examples that constitute a case of pragmatic anomaly (such as (72c-d)):

(72) a. The tractor is red
      b. The tractor is gassed up
      c. ? The tractor is pumped up
      d. ? The tractor is sweet
      e. *The tractor is pregnant
      f. *The tractor is bald-headed

It is the type of examples in (72c-d) that Blutner primarily wants to explain. Here, in distinction to (72e-f), there is nothing in the world that would prevent the application of the adjectives: Any part of a tractor would surely cause a taste experience if we really

tried to taste it; and since bicycles can be *pumped up* we could expect the same to be possible with other vehicles with tyres, such as tractors. The fact to be explained is therefore that these collocations, which do not represent category violations, still cannot be used. Blutner argues that the blocking of such uses of modifiers is a task for pragmatics. Let me first discuss Blutner's proposal in more detail and then consider the connections to our issue of the derivation of e-predicates.

Blutner's theory is embedded in a semantic framework that provides for underspecified lexical representations by using free variables (basically the conception advocated by Bierwisch 1983). As an example, let me present his paradigm case *the apple is red.* The point of this example is that we have to determine the way in which *red* is true of *apple;* apples are called "red" by virtue of the colour of their peel while e.g. a grapefruit is called a pink grapefruit by virtue of its pink flesh. This need not be considered a problem for compositional semantics, to be sure, for we know that the combination of adjective and noun is well-formed in principle. Nevertheless, we have additional knowledge about the way in which *red* is true of *apple;* this knowldedge is needed to fully determine the truth conditions, and the question is whether it should be added to the lexical meaning. It can easily be seen that adding such meaning components would inflate the lexical entries considerably. Now let us see how Blutner proposes to resolve this problem. Blutner (1998) does not explicitly provide the lexical entries that underlie his model; he only has representations of the whole nominals; an example is given in (73):

(73) a. The apple is red

  b. Its peel is red

  c. Its pulp is red

  d. APPLE(d) & PART(d,x) & COLOUR(x,u) & u=*red*

  e. APPLE(d) & PART(d,x) & PEEL(x) & COLOUR(x,u) & u=*red*

Blutner's line of thinking is as follows: (73d) is a semantic representation that results from combining the lexical meanings of *apple* and *red.* Starting out from this, we now want a mechanism that yields the more specific representation (73e), conforming to the intuition that (73b) but not (73c) correctly describes the details of the interpretation of (73a). The step from (73d) to (73e) is seen as an instance of conversational implicature, i.e. it triggers an inference as to an explanation that justifies the representation (73d).

This kind of inference is called abduction. The process of abduction is constrained in that it has to find that particular specification out of a number of possible ones (e.g. PEEL) that can be had least "costly"; the others will then be blocked by the former. The "cost" for an assumption on which an abductive inference can be based is to be equated mainly with its degree of specificity (Blutner 1998, p. 148). Spelling out the mechanism of abductive inference is a central part of Blutner's (1998) paper. However, in the present context I want to limit the discussion to pointing out the important role of this kind of inference; it would lead us hopelessly astray to review the whole apparatus of abduction here.

So let me try a general evaluation of the relevance of this model for our purposes. First and foremost, we have to clarify the origin of the connecting relations like PART in the example above. If we take it as part of the lexical entry for *apple,* we end up with a model that is partly a qualia model: It would hold that it is a fixed lexical property of the noun that it makes "constitutive parts" of its referent available for modification. This is like positing a qualia structure of nouns in the lexicon but leaving its contents open to inference (and it is indeed particularly difficult to limit the content for the part-whole structure of the referent in any predictable way, as has already been remarked when the notion CONSTITUTIVE QUALE was introduced at the begining of subsection 2.2.5.b. above). Maybe such a move would add the desired flexibility to the qualia model.

One might consider expanding the scope of Blutner's model by leaving the availability of the connecting relations up to inference, too. The crucial factor then lies in the description of the mechanism of abduction: It must be able to explain variation and gaps in modification possibilities (probably as effects of competition and blocking among the various available abductions). This runs counter to Blutner's intentions, because for him the distinction between category violations and pragmatic violations is central. Still, such an extension of the theory might nevertheless be an improvement over models that view qualia essentially as lexical decompositions. The point where it might become inadequate is the supposition that we would then be dealing with completely regular phenomena. Language differences in modification possibilities (e.g. (62) and (63) farther above) are then very problematic, because one would have to find ways to block these collocations on a regular basis in one language but not in the other.

Finally, it would be possible for the connecting relations to be rooted in the entry of the adjective, and this in fact seems to be the move that is called for, because it is

actually what Blutner does in his review of qualia theory. He rewrites the qualia model to the following format:

(74) a. *car*   x [CAR(x) & TELIC(x,s) & MOVE(s) & ...]

b. *fast*   x [TELIC(x,s') & FAST (s')]

c. *fast car*   x [CAR(x) & TELIC(x,s) & MOVE(s) & TELIC(x,s')
& FAST(s')]

d. Unification: x [CAR(x) & TELIC(x,s) & MOVE(s) & FAST(s)]

(74b) posits a weaker form of sense variation in the adjective: There is no variation in conceptual content, but the range of constructions that the adjective can enter into are coded as a lexical property of the adjective. Although this seems to be different from the spirit of qualia modification as a purely constructional approach, it could be the right move, because it would allow us to build in idiosyncrasies in the availability of adjectives as modifiers of particular "qualia". Unfortunately, the approach is still underdeveloped since the status of the "telic" information in the noun is not explained, and we still don't know how the event variables are to be bound. So what this account does is just providing a direction for further work.

In conclusion, there are two aspects of Blutner's model that I consider worth exploring. First, and very generally, it presupposes lexical forms of modifiers that contain relations by which their application can be shifted to different sorts of entities while at the same time there is a core conceptual content that remains constant and still connects the resulting lexical form to the underlying orientation of the adjective. Second, the primary focus of Blutner's theory is on operations that specify a modifying relation which is sortally well-formed but not yet fully interpretable, while he explicitly wants to exclude that abductive processes are invoked to repair sortal mismatches. Applying this to our problem of the lexical status of e-predication, we see a potential distinction between two ways in which event predication could be reconstructed: One option is that the event predicates in question, say *intelligent(e),* do not have any event-related interpretation on the lexical-conceptual level and that the construal with event-denoting verbs is the outcome of introducing an additional relation that serves to bridge the sortal mismatch between the e-reference of the verb and some other type of reference of the adjective. The other option, however, is that the e-predicate *intelligent(e)* does exist on a lexical-conceptual level but that its meaning is so hard to

grasp because it is in need of a pragmatic process that enriches it with a more specific content, just as in the case of *red* as applied to apples or grapefruits. These are the two ways in which the process of inferring specifications in the modifying links may shed light on the puzzles of the notion of "manner" that were mentioned in the introductory chapter.

f. Predicate Transfer

In the above discussion, a major problem of purely constructional approaches has turned out to be the overgeneration of readings. It seems to be a good strategy to explain variations in the use of adjectives by a combination of a constant conceptual core and an additional relation that bridges the sortal mismatch — however, this bridging process must allow for gaps and idiosyncrasies, and therefore should not be entirely generative (one must be sceptical about the possibility of filtering out all inexistent cases by pragmatic blocking as envisaged by Blutner 1998). Therefore, the shifts from an e-related adjective to an x-related use should probably be fixed in the lexical entry of the adjective. It seems that an approach of this kind has in fact been proposed in a slightly different context, namely in Nunberg's (1995) work on predicate transfer. His approach is not made very explicit technically, but it will provide the optimal starting point for what is to come in the following chapters.

The point of Nunberg (1995) is to show that a distinction must be made between two mechanisms that effect meaning shifts. Compare:

(75) a. THIS is parked out back.
b. I am parked out back.

(75a) is to be understood with respect to a situation in which a customer hands his key to an attendant at a parking lot. The demonstrative *this* primarily refers to the key, but is intended to refer metonymically to the corresponding car. Example (75b), however, is not of the same type, as Nunberg (1995) shows. One might think that (75b), too, involves the same kind of metonymic shift from *my car* to *me*. The coordination patterns into which (75a) and (75b) can enter show that this is not so:

(76)   a.   [holding the keys:] THIS is parked out back and may not start.

            b.   ?? I am parked out back and may not start.

In (76a), the demonstrative is consistently used to refer to a car, so predicates about cars can be conjoined in the corresponding VP, e.g. *start.* The same coordination is impossible in (76b), therefore the subject *I* is not used for metonymic reference to the car; here it must be the verb *park* that has been shifted to a predicate that takes a person as its subject instead of a car. Nunberg points out that the construction is insensitive to the way in which the subject is described, which supports the view that it is really the sort of persons that is selected in the subject position:

(77)   The man with the cigar (Mr. Mc Dowell, etc) is parked out back.

The interesting thing is that the strict sense of *park* is still present, for I can only say that I am parked out back **by virtue of** the fact that my car is parked out back. Hence, the meaning of this use of the verb has to be described as having two layers, as it were. We can identify the predication of cars as a conceptual core and the predication of persons as a more formal adjustment on top of it. This is reminding of cases like *fast car* because there, too, there is a shift in the sort formally referred to while the underlying concept of a "fast event" is still active. So I assume that the meaning shifts with adjectives that have been discussed above can be subsumed under Nunberg's notion of predicate transfer (Nunberg 1995 does not apply his proposal to adjectives). To make the meaning of a shifted predicate explicit, we can still insert bridging relations in the way Blutner (1998) does, but the point is that they are now definitively regarded as part of the adjective's lexical entry.

      As argued above, the generative accounts to constructional polysemy needed some kind of blocking device to filter out unacceptable collocations. Nunberg's model suggests that we can take the opposite approach: Special conditions can be stated that license the application of the lexical rule of predicate transfer. To a large extent, these conditions will again be of a pragmatic nature, as in Blutner's model, but since we are dealing with lexical rules that transform the meanings of adjectives, there is a natural path of lexicalisation. Nunberg formulates the condition for the licencing of predicate transfer as follows:

(78)   Condition on predicate transfer (Nunberg 1995:112)

Let P and P' be sets of properties that are related by a salient transfer function g_t: P P'. Then if F is a predicate that denotes a property P P, there is also a predicate F', spelt like F, that denotes the property P', where P' = g_t (P)

The process of predicate transfer, applying to a property P, can then be represented as follows, with h being a salient function that maps x (ranging over elements from one set of things) onto y (ranging over the elements of another, disjoint set of things):

(79)   P   y ($x_{[dom\ h]}$: h(x)=y & P(x))   *or:*

P   y ($x_{[dom\ h]}$: h(x)=y   P(x))

The transfer function can be specified only pragmatically; Nunberg's description of the condition that it has to obey is that "predicate transfer is only possible when the property contributed by the new predicate is 'noteworthy'" (p.114) or "relevant" for purposes of classification. For the example *I am parked out back,* Nunberg gives the following explanation:

> "From the point of view of a garage attendant,..., a customer is usefully classified in terms of the properties he acquires from the location of his car (...) rather than in terms of the properties he acquires from its provenance or mechanical condition ('I was bought from a friend', 'I shimmy at high speed')—though of course some of these properties might be more useful for other conversational purposes" (p.114).

Finally, Nunberg assumes that the transfer function can be creatively derived in the setting of one specific context, or — as he goes on (p.115) — can be employed

> "across a wider range of situations, providing a more context-independent way of classifying the bearers of derived properties, which answers to more general interests. In these cases we may very well want to say that the transferred predicate represents a lexical sense of the item in question. To a certain extent, this is a relative matter."

So, in summarising, Nunberg's predicate transfer approach seems to combine the useful features of the constructional approaches with the restrictions and idiosyncrasies typical of lexicalisation processes. It can be regarded as a way to spell out the lexical status of items that undergo the "constructional" type of polysemy by framing the shift as a process that is located inside the lexical meanings. (It must be noted that the restrictions of this mechanism cannot be spelt out in the semantic form). It is easy to see how the adjectival cases like *fast car* and the like can be captured in this way.

My aim in the next chapters is to show that this mechanism can now fruitfully be applied to the mirror-image of the adjectival cases, namely to certain cases which derive event adverbs from x-predicating or related adjectival meanings. Precisely how this can be done depends on a close analysis of the lexical meanings at issue, which I now turn to.

2.2.6. Conclusion

As a case that is potentially parallel to our problem of x-/e-alternations, this chapter has discussed accounts of adjectival variability in adjective-noun constructions. Regarding the basic types of approach that are possible, I have distinguished sense variation from constructional variation. Three quite similar approaches in terms of constructional variation in A-N modification constructions have been reviewed. It could be seen that accounts that rely on constructional variation in a pure form (e.g. Pustejovsky's qualia theory) have difficulties to cope with idiosyncrasies of all kinds, such as gaps and crosslinguistic differences. It is possible and maybe desirable to combine the mechanisms of sense and constructional variation by encoding the constructional shifts into the lexical entries of the adjective, as is done in Nunberg's (1995) predicate transfer model. With this as a background, we can now turn to examining how the various adverb types identified in the first part of this chapter can be made to fit into this picture, or can be demarcated from the types that fit into it.

Chapter 3

Resultative Adverbs

Overview:

3.1. The Phenomenon

This chapter investigates cases of adverbial modification like those in (1) or (2):

(1)   a.   They decorated the room beautifully

         b.   She dressed elegantly

         c.   They loaded the cart heavily

(2)   a.   I opened the door wide

         b.   I shut the door tight

I am not aware of any established term for such adverbs, although they seem to form a fairly homogeneous class. So let me refer to them as **resultative adverbs**. It must be

noted that this classification starts out from intuitions, and as long as the terminology is based on intuitions, we cannot be entirely sure that all adverbs that look like those in (1) or (2) belong to the same semantic class. This question can be addressed only after we have arrived at an analysis of their meanings. Intuitively, the adverbs in (1) could be characterised as pertaining to the outcome of an event in some way. It is possible already on this intuitive basis to distinguish between resultative adverbs and true manner adverbs (or to put it differently, I propose to use the term *manner adverb* in a narrow sense so as to exclude those in (1) and (2)). This becomes very clear from example (1b), which is ambiguous, as already noted in the previous chapter: Under the more prominent interpretation, *elegantly* says something about the outcome of the dressing event, but there is another reading which ascribes certain properties to the process of getting dressed, like consisting of elegant movements. So here manner and resultative use are clearly independent from one another, and we therefore need a semantic distinction between manner and resultative adverbs, even if the latter also pertain to the event in some sense. That is to say, in formalising these different types of adverbs, the existence of an ambiguity forces us to go beyond giving both of them the neo-Davidsonian format P(e). So the existence of resultative adverbs provides a clear indication that neo-Davidsonian predication has to be reconstructed on the basis of the lexical porperties of adverbs.

The term *resultative adverb* is of course modelled after the term "resultative adjective", such as in the much cited example:

(3)   He hammered the metal flat

An intuitive connection is that resultative adjectives, too, say something about the outcome of the event. We therefore have to clarify the differences between these two types of "resultatives". The classic analysis for resultative adjective constructions (e.g. in Dowty 1979) takes collocations like *hammer flat* to have the same type of meaning as simple accomplishment verbs. Thus, the adjective *flat* in the resultative adjective construction names the resultant state of the "hammering" event, which, as such, gives no indications as to its results. This is shown in the representation (4a) below. The decomposition of the simplex verb *to open* in (4b) takes exactly the same form, with the only difference that the activity part is unspecified:

(4) a. [**hammer**(x)] CAUSE [BEC (**flat** (y))]

b. [**act**(x)] CAUSE [BEC (**open** (y))]

In a syntactically complex accomplishment like (3), a resultative adjective is always combined with an activity predicate. Thus, the resultative adjective construction effects a mapping from an activity predicate to an accomplishment. In this respect, resultative adverbs are different: They occur with verbs that have their resultant state already specified. The verb *to open* even takes its name from a predicate that describes a resultant state (i.e., the adjective *open),* so the slot of the result predicate is already filled. The collocation *to open the door wide* must have a semantic structure that is different from the structure of *to hammer the metal flat. Wide* is a modifier and not the resultant state itself.

Another important property of resultative adjectives concerns the predication relations they entertain with arguments of the verb: Resultative adjectives regularly predicate of the direct object NP, or of the subject NP of unaccusative verbs.[23] The adverbs, however, do not present a very clear picture in this respect. Their morphological bases do occur as predicates of individuals in other uses, and it is often tempting to explain the examples by predicating the corresponding adjective of the object (or some other argument). Let us check the examples in (1) (repeated in 5 below):

(5) a. They decorated the room beautifully

?_ the room is beautiful

b. She dressed elegantly

?_ she is elegant

c. They loaded the cart heavily

?_ the cart is heavy

d. I opened the door wide / shut the door tight

?_ the door is wide / tight

It seems that the paraphrases do not suffer from any sortal mismatch if considered in isolation. Putting them into context, it is interesting to see that we automatically try to

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[23] Unaccusative verbs are assumed to have a derived subject that has left a trace in object position. In this way even examples like *The door slid open* save the generalisation that resultatives target the "object". Note that the verb *to dress* is not unaccusative, so the same generalisation does not hold for resultative adverbs.

take the adjectival paraphrase as the description of a result. For instance, if a cart is loaded heavily, we might want to say that it is heavy afterwards. Although all such paraphrases do not seem to be wide of the mark, they still miss something of the meaning that is expressed by the adverbial construction. Moreover, we would not even expect such paraphrases to be possible because, if predication of the direct object were intended, a resultative adjective construction should occur. It can be observed, however, that ordinary resultatives are unacceptable with these verb-adjective combinations:

(6)   * They loaded the cart heavy
       * They decorated the room beautiful.   etc

One possible explanation for the unacceptability of (6) might be to say that these results would have to be understood as individual-level predications, not as transient states. One could also speculate that resultative adjectives are excluded with these verbs because the verbs are already inherently telic and adding a second result is not allowed. In any case, the contrast in acceptability between (5) and (6) suggests that there is a semantic difference. Given that this difference arises with the same adjectives in different constructions, it is an urgent task to find out what the meaning difference consists in and how it comes about.

So I hope to have shown that there are intuitions that recommend a result-oriented analysis of the adverbs in (1) and (2), and, furthermore, that there is a problem with the notion of result that is at stake here. We now have to find out what the precise semantics of this modifying construction is, and on this basis we can proceed to clarifying the lexical status of the adverbs at issue.

3.2. Manner Modification of Resultant States

The considerations in the preceding section pointed to an analysis of resultative adverbs as modifiers of resultant states. This solution looks very plausible because some resultative adverbs can also occur as modifiers of adjectives. Along with the verbal modifier *wide* in *to open the door wide* we also find *wide* in the use *The door is wide open*. After all, this use with adjectives is what makes it clear that *wide* is an adverb, despite the absence of the affix *-ly*. So, the phrase *to open wide* could be paraphrased as

to make [wide open]. Modification of resultant states is essentially the analysis offered in Parsons (1990) for the example *to close the door tight.* Eckardt (1998) also subsumes examples such as *to dress elegantly, to paint the chair strangely* under the same rubric. Let us look at Parsons' (1990) account in more detail. For adverbial modification of resultant states to work, the first thing we need is manner modification for states, which does not seem to pose any difficulties. We assume that adjectives like *open* denote states, and that states are a subsort of eventualities besides events proper (i.e., dynamic events). If the modifier *wide* is taken as a predicate of states, too, a standard case of intersective modification results :

      (7)   wide open: open(s)(x) & wide(s)

If *wide* is to be used as a modifier of the verb to *open*, we need some sort of lexical decomposition to access the result part in the verbal entry. Parsons (1990) offers an event-semantic version of lexical decomposition that describes an accomplishment as a series of three subevents. The decomposition of *x opened y* then looks as follows (the predicates *Cul(minate)* and *Hold* serve to express aspect in Parsons' framework and can be neglected in our context):

      (8)   (e) [Cul(e) & Agent(e,x)
          & (e') [Cul(e') & Theme(e', y) & CAUSE (e, e')
          & s [open(s) & Theme(s, y) & Hold(s) & BECOME(e',s)]]]

I am citing this representation in order to have a framework in which result modification finds a specific expression. The format of Parsons' representation surely invites a couple of questions, which, however, need not concern us here. It must be pointed out, however, that with the format in (8) every adverb must pick out one of the constituent events for modification, for, somewhat astonishingly, no overarching event is given that sums up the parts. Parsons does not discuss the question of whether modifying subparts of the verbal meaning might constitute a compositional problem or not. In grammar, adverbs combine with the verb as a whole, and it is simply taken for granted that they can find the right slot to apply to. Taken as a predicate of states, wide can only target the resultant state, because otherwise a sortal mismatch would result:

(9)   to open the door wide =

    (e) [Cul(e) & Agent(e,x)

    & (e') [Cul(e') & Theme(e', y) & CAUSE (e, e')

    & (s) [open(s) & Theme(s, y) & Hold(s) & BEC(e',s) & Being-wide(s)]]]

The only difference to (8) above is that now the result clause has incorporated an additional predicate of states. In this way, it appears that result modification has received a very simple account. However, note a strange quirk in Parsons's formulation: The modifier is written not as *wide(s)* but as *being-wide(s)* — without any explanations as to what the significance of this difference might be. I take it that it reflects an intuitive uneasiness about the role of the modifier; and closer inspection indeed reveals a lexical problem inherent in the representation in (9), as I want to show now.

The independent existence of *wide* as a predicate of states at first sight seems to provide justification for the analysis in (9): Here we find the state variable that we need for an analysis in terms of intersection. However, the question now arises whether *wide* as a modifier and *wide* in its independent use (cf. 10a-b) are exponents of the same lexical entry:

(10) a.   The margin is wide.
      b.   The door is wide.
      c.   # The door is wide open

Can it be that the conjunction of any two predicates can be termed "modification"? In the introductory section to this chapter, I have devoted some space to illustrating the apparently trivial point that resultative adjectives "provide" resultant states while adverbs only "modify" them. This simple difference has now been lost. Although one might now think that this problem concerns intersective modification in general, this is actually not so: Usually, the conjunction of, say, an event adverb with a verb is the only way to use the modifying predicate, and hence it can be assumed that the subordinate status of the modifier with respect to the head can be derived from the lexical meaning that is expressed by the modifying predicate. Confusion arises only as soon as a predicate is assumed to do double duty as a main predicate and a modifier, because the neo-Davidsonian format creates entailments that lead from one to the other. Usually, it is emphasised that event adverbs are "droppable" — but in the case under consideration

nothing prevents us from dropping the head:

(11) a.   wide(s) & open(s) & Theme(s, the door)

              wide(s) & Theme(s, the door)

      b.   the door is wide open ?   ?   the door is wide

The entailment in (11a) is a tough problem: In view of (11b) we know it must be blocked, but from the neo-Davidsonian logical form it is not visible how this could be achieved. The lexical analyses conducted in this chapter will ultimately lead us to a solution for this puzzle, so I shall come back to it at the end of this chapter.

For now, note that the entailment in (11a) has two quite intriguing properties: First, the strange question of argument association with the "modifier" arises; second, a subtle and unpredicted meaning change seems to go on with *wide*. In view of what is assumed for other neo-Davidsonian modifiers, it seems strange that (11a) forces us to assume a thematic relation between the modifier *wide* and the holder of the state. Still, this would be dictated by the assumption that *wide* occurs in its usual lexical form: In this case it would have to take an argument, and this could not be different from *door,* because otherwise the two states, *open* and *wide,* could not be identified (if two states have different holders, they cannot be the same). This would leave us with the predication relations that we already tried out and found dissatisfying in (5). In this particular case, we get a meaning that is not exactly what we want. Imagine a situation in which someone says: *The door is wide enough to carry the piano through it.* Such an utterance would have to refer to the width of the doorframe and not to a particular state of the door. In this sense, the door can be said to be wide enough even when it is closed. In the adverbial use, we need to make reference to a stage-level property of the door that results from opening it.

So should we posit a lexical distinction, saying that *wide open* contains *wide-as-a-modifier,* with a meaning that is different from *wide-as-a-predicate?* In this case, however, we have to state what the semantic basis of this difference is. It is clearly not sufficient to evoke a distinction between "predicate" and "modifier" in and by itself, without any conceptual correlate of such a distinction. In the same way, it is not possible to posit that *wide-as-an-adverb* is different in that it is just a pure state predicate and does not by itself select an argument. We have no reason to assume that the two uses as a modifier or an independent predicate involve different concepts. Intuitively, if a door is

opened the state of affairs that arises does fall under the concept of "wideness" in some respect (our problem is only to specify in which respect this may be so). In all the other examples cited in (1), the same problem recurs: In *load heavily* we feel that we do speak about the same "heaviness with respect to weight" as always.

In sum then, either of the two options is implausible. The lexical problem of Parsons' analysis lies in the fact that the two uses can neither be shown to be lexically distinct nor to be the same. This suggests that something is seriously wrong with the analysis. One may suspect that we are indeed dealing with the same lexical-conceptual meaning in both uses but that it is applied to different things. This would necessitate a reconstruction of the simple format of modification used by Parsons (1990) and others.

Despite this sceptical conclusion, it should not be forgotten that the paraphrase relationship between *to open wide* and *wide open* is indeed evidence that there is some truth to the idea of resultant state modification; we only have problems in making it precise. However, if we now broaden the scope of the investigation, a problem of empirical coverage shows up as well. It does not seem as if all the cases adduced in (1) could be covered by the assumption that the adverb is a predicate of states — even if it should be correct for some of them. First, of course, the question is whether we can posit all the necessary predicates of states:

(12) a. They decorated the room beautifully   beautiful(s)
      b. She dressed elegantly   elegant(s)
      c. She wrapped the gift nicely   nice(s)
      d. They loaded the cart heavily   **heavy(s)**
      e. They sprayed the wall thickly with paint **thick(s)**
      f. He sliced the bread thinly   **thin(s)**

We would be at a loss of words to explain what it means for a state to be "heavy" or "thick". Although these do exist as predicates of states, we are still in conflict with the lexical problem outlined above: It is not the normal reading "a state of x's being heavy" that we want because the identification of the argument x is very problematic. We would again need an obscure modifier meaning that we are unable to elucidate any further on intuitive grounds.

Besides this, there are more specific problems. One problem is that in many of the other cases we are lacking clear paraphrases in which the same resultative modifiers

apply to state predicates. This may be due to the fact that such state predicates are mostly lacking, but it is nevertheless disappointing in the light of the above proposal. Note that paraphrases with participles do not give reliable evidence for state modification, although these would be readily available:

(13) a. The room is beautifully decorated [stative reading]

  b. She is elegantly dressed

  c. The cart is heavily loaded   etc

Kratzer (1994, 1996) shows that adjectival passives are not necessarily lexical but can be derived from whole VPs. One of her main arguments for this is the observation that event-related adverbs are possible, even if the construction as a whole describes a resultant state. German provides a wealth of examples:

(14) Das Kind ist sorgfältig gekämmt
     The child is carefully combed [stative reading]

Therefore, it cannot be entirely excluded that the paraphrases in (13) contain VP-adverbs, too. It can be found that many states are not lexicalised as adjectives but have to be named via the event that they result from, so examples are scarce that could corroborate (or refute) the idea that the adverbs at issue are predicates of states.

   A related difficulty arises if we want to apply the state modification analysis to resultative adverbs in general. We find that adverbs that hypothetically modify the result of a certain verb are often found to be unable to modify verbs that (intuitively) have very similar states as results; or they are unable to modify adjectives that describe states similar to the putative result of the verb. This observation is thus related to the preceding two points: We seem unable to make correct predictions as to the exact kinds of states that can be modified by a certain adverb, and this seems to point to the conclusion that we actually do not have a precise idea of what the lexical meaning of these purported state predicates could be. Consider the contrasts in (15) through (18).

(15) *Resultant state: "wearing clothes"*
  a. to dress elegantly   (resultative adverb)
  b. # to put on clothes elegantly   (only process reading)
  c. #/? to wear a suit elegantly

Surprisingly, the resultative interpretation is lost in (15b). Likewise, example (15c) does have an interpretation, but it does not describe the direct outcome of *dressing elegantly* — it rather seems to say something about the manner of *wearing* as a controlled state or activity. In the latter case, elegance depends on the agent's behaviour after getting dressed, which is not true for the result of (15a). Now, the verbs in (15) differ in certain respects; for example, *wear* and *put on* take an argument that refers to a piece of clothing, while *dress* does not. However, it is precisely the assumption that *elegantly* is a predicate of states that makes us unable to derive an explanation from this difference, for it is not clear how argument expressions would bear on the individuation of states. We would rather think that the contrast between (15a) and (15c) is evidence against the idea that *elegantly* is a predicate of states (which is surprising because *elegant* seems to belong to that group of predicates mentioned in chapter 1 that are quite indifferent as to the ontological sort they predicate of: If things and events can be *elegant,* so why not states as well?).

(16)   *Result: Adornment*
       They decorated the room beautifully
       ?? The room was beautifully festive

It is maybe somewhat marginal to say that a room can be "festive". Still, it is the presence of the modifier that makes the second sentence really unacceptable.

(17)   *Resultant state: "a load is on a vehicle"*
       to load the cart heavily with hay
       ? to load hay heavily onto the cart

This example is particularly intriguing: We are not sure whether in a locative alternation the resultant states of the two variants are different. Nevertheless, even some cases of locative alternations exhibit a contrast in the applicability of a resultative adverb.[24]

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[24] This does not always hold, however. Compare:
       (i) to brush the door thickly with paint
       (ii) to brush paint thickly onto the door
       (iii) to spread butter thickly on the toast
       (iv) to spread the toast thickly with butter

(18)   *Resultant state: "stuff has been put somewhere"*
        They loaded the cart heavily
        (?) They filled his bag heavily
        ?? The bag was heavily full

There is a slight difference in the behaviour of *load* and *fill* with respect to result modification. We don't know what subtle feature in the word meaning of *heavy* could be made responsible for this difference. Most intriguingly, however, *heavy* is even less able to combine with the state expression itself than with the verb.

    In view of these facts, it seems that postulating state predicates is per se not very helpful for the analysis of resultative adverbs. Whether or not predicates of this type exist, their semantic type alone does not give us a clue for understanding the lexical meanings and the distribution of resultative adverbs. What is more, an unreflected use of state predicates in the analysis of resultative adverbs produces undesired entailment patterns. What we need is either additional information on the meaning of such neo-Davidsonian state modifiers, or a completely different analysis.

3.3. Modifiers and Implicit Arguments

An alternative to the state modification approach suggests itself when we consider examples like those in (19):

(19)   to slice the bread thinly
(20)   a.   sliced(s) & thin(s)
        b.   slice(x) & thin(x)

It would seem rather odd to keep to the neo-Davidsonian method and posit a variant of *thin* that is a predicate of states and yields a description of the resultant state as in (20a) above. Rather, the zero-derived verb *to slice* would seem to suggest the existence of a slice as a "shadow argument". In fact, a good paraphrase for (19) is: *to cut into thin slices.* So (20b) is clearly more parsimonious, for it allows us to use the predicate *thin* in the meaning we are familiar with, instead of positing a dubious predicate of states

with an unexplained meaning. This example gives us the idea that resultative adverbs could also be predicates of implicit arguments.

If we want to pursue this line of thought, we have to deal with an objection, though. It is simply not always possible to have adverbs take up arguments that are provided in the base of a zero-derived verb. So all the following attempts lead to unacceptability:

(21)   ?? to water the plants coldly (with cold water)

   ?? to label the bottles greenly   (put green labels on them)

   ?? to shelve the books woodenly (on a wooden shelf)

   ?? to bottle the whisky bulbously (in bulbous bottles)

In light of this, there must be something special about the example (19). Now, there is one lexical semantic difference in the data: The roots of the verbs in (21) all express either a location or a thing that is being placed somewhere (a Theme in the narrow sense), so if the form of the verbal base is taken to indicate the existence of an implicit argument, this would have to be a location or theme argument. The argument that is implicit in the verb *to slice,* however, is a created object. We shall see that this indeed makes a difference.

We now have two avenues of formulating a semantics for resultative adverbs: Predication of resultant states, or predication of individuals, especially effected objects. At the moment, predication of individuals offers a very attractive and parsimonious analysis, so it is worthwhile to investigate the following hypothesis in a more general formulation:

(22)   **Hypothesis:** Resultative adverbs predicate of implicit created objects

Pursuing this hypothesis will take us very far towards a solution, and I want to demonstrate the assets of this analysis first, before qualifying it. At first sight, the proposal seems to face the following difficulty: It seems implausible that typical "locatum" verbs like *load, brush, wrap, decorate,* etc have resultant objects, i.e. can be regarded as verbs of creation. However, this is not a serious objection. To see this, we

have to take a closer look at created objects, or as I want to call them, *resultant individuals* (RES-I, for short).[25]

3.4. Resultant Individuals and Verb Semantics

3.4.1. Resultant Individuals and Result Nominalisations

Before turning to the rather elusive type of resultant individuals that are hidden in a verb's meaning as implicit arguments, it is worth noting that there are several kinds of overt constituents that link resultant individuals to a predicate. The first and most straightforward type is represented by effected (grammatical) objects that appear with verbs like *to build, to paint* etc. A second case in point are certain PPs, which we may call "pseudo-directional" PPs because they involve prepositions that are otherwise found in directionals, viz. *to, in,* and *into:*

    (23)   hack to pieces, arrange in circles, cut into small pieces

In the literature, such PPs are usually subsumed under "resultatives" without explicit discussion, i.e. they are grouped together with resultative adjectives (e.g. Levin & Rappaport Hovav 1995; Legendre 1997, among many others). Finally, a phenomenon that deserves attention are the so-called **result nominalisations.** Again, the established terminology lacks an explicit distinction between resultant states and resultant individuals, but it is understood that the nominalisations in (24) and (25) below predicate of individuals, not states. They can be formed from various verbs regardless of whether they take effected direct objects (as in (24)) or not (as in (25)):

    (24)   *Verbs of creation*
           build - building, paint - painting, carve - carving

    (25)   *Verbs of location*
          a.   They decorated the room beautifully   beautiful decoration

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[25] This terminology helps to avoid confusion with *object* as a syntactic notion, i.e. *direct object.* Since we are also dealing with verbs of creation now, this confusion might arise. Also, I want to bring to attention the interesting parallelism between

b.	She dressed elegantly	elegant dress
c.	They loaded the cart heavily	heavy load
d.	She wrapped the gift nicely	nice wrapping

In (25), we observe that the "verbs of location" that allow resultative adverbs do form result nominalisations. Furthermore, it can be seen that result nominalisations, if combined with an adjective, provide paraphrases for constructions with resultative adverbs (derived from the adjective in question). This is strong evidence that the adverbs indeed target resultant individuals, and that such individuals are accessible in the verbal meanings even of verbs like *load*. The existence of result nominalisations confirms the assumption of RES-I as implicit arguments because this then fits in with the general picture that nominalisations pick out different arguments of the verb and make it the referential argument of the derived noun: Derived nouns may become agent nominalisations *(maker),* patient nominalisations *(employee),* event nominalisations (which target the verb's referential argument, instead of a complement argument), and, finally, result nominalisations. For the productive formation of the latter, we may assume a template like the following that uses "resultant individual" as a thematic role label:[26]

$$(26) \qquad \lambda P \lambda x (\exists e [\text{RES-I}(e, x) \& P(e)])$$

In this way, result nominalisations prove to be an instrument for detecting implicit resultant individuals. It can also be shown that the verbs with theme or location objects that allow resultative adverbs indeed form a special class as compared to other verbs of location. Whereas the verbs in (25) allow both resultative adverbs and result nominalisations, those in (28) allow neither. (I can't even remotely see what examples that show the impossibility of resultative adverbs in (28) could look like, so none are given).

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resultant individuals and *resultant states.*

[26] The existential quantifier for the event variable would require that a result noun is taken to denote an entity that is inherently dependent on a prior event. This only makes sense for transparent cases of result nominalisations. Of course, lexicalisation may subsequently take place and obscure the relationship to a preceding event. Therefore, (26) represents the template for productive nominalisation, but it is not meant to imply that such an existential quantification over events is contained in all nouns that formally (i.e. etymologically) are nominalisations of such a kind. Note incidentally that the existential quantifier in (26) creates a parallelism to the treatment of resultative (state) participles in Kratzer (1996).

(27) *Locational verbs with effects of result individuals / LOC object*

      see under (25): load the cart (heavily)   - the load   etc.

    Locational verbs with effects of result individuals / THEME object:

      spread the marmalade (thickly)   - the spread

      wrap the gift (nicely)   - the wrapping

      brush the paint (thickly) onto the wall - [no result noun][27]

(28) *Pure locational verbs without effects of resultant individuals*

    LOC: leave (# the leaving)[28], sweep (# the sweeping)[29]

    THEME: lift - (* the liftings); squeeze - (* squeezings); put (* puttings)

The verbs that allow resultative adverb constructions form a subset of the verbs that allow result nominalisations, because resultative adverbs are usually blocked if a resultant individual is expressed overtly as the direct object of a verb or as a pseudo-directional PP:

(29)   * to dig a hole deeply

       * to bake a cake sweetly

The existence of such a restriction can be reconciled very well with the assumption that *deeply* and *sweetly* would have to be underlying predicates of individuals, since in this case they could also be linked as adjectives in the NP that represents the resultant individual. The ban against constructions as in (29) would then be reducible to something like the Theta-Criterion in Generative Grammar (Chomsky 1986). The Theta-Criterion posits a one-to-one correspondence between argument "roles" and syntactic argument expressions. From a more semantic backdrop, and in a more generalised form, we could paraphrase the Theta-Criterion as follows:

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[27] One might speculate that result nominalisation is blocked because this verb is denominal (the root specifying an instrument).

[28] The nominalisation *the leavings* from "leave" appears to be a counterexample. However, note that this nominal cannot derive from a verb of movement away from a place; it can only denote things that are found in a place after some event has occurred. Uses of the verb "leave" that are related to this reading are e.g. *to leave a mark / a stain on something.* This variant of *leave* has obviously to be treated as a verb of creation. Moreover, note that the nominal only occurs in the plural; this points to the conclusion that it is a collective entity that is as such newly created by the event.

[29] Again, no nominalisation can be derived from the use of *sweep* as a verb of location, and the nominal denotes a collective. Moreover, the attested English nominalisation *sweepings* does not even correspond to a theme argument of the verb *sweep* — cf. the oddity of "There are sweepings everywhere in this room, so we should finally clean it up." Again we have to suspect that we are dealing with a created object, although *sweep* alone cannot be used as a verb of creation.

(30)   All semantic predicates that restrict a certain argument variable of the verb must be gathered in one single constituent (i.e., a syntactic argument).

The formulation in (30) is in need of refinements and qualifications, because certain types of adjoined adjectives (depictives) would seem to be at odds with it, but we can get back to these issues later (see chapter 5).

If resultative adverbs were predicates of individuals, a principle like (30) could serve to exclude them in (29). If the neo-Davidsonian analysis of resultative adverbs is to be maintained, a different explanation must be found for the cooccurrence restrictions between objects and resultative adverbs.

3.4.2. The Semantics of Verbs with Implicit RES-I

Although result nominalisations already show quite convincingly that verbs like *load* do in fact contain resultant individuals as implicit arguments, a closer examination of the verbal meanings is in order. This is particularly so in view of the notion of implicit argument that is at issue here. We do not have any evidence that these implicit arguments are active in syntax and betray themselves by such phenomena as control or binding to discourse referents (cf. Kratzer 1996). Rather, the relevant notion of implicit argument is a purely semantic one. With reference to Dowty's (1991) work on thematic roles, we can say that a semantic argument is an individual that occurs in an entailment from the lexical meaning of the verb. If an argument in this sense is otherwise invisible (i.e., implicit), its existence therefore has to be justified by an analysis of the verbs' lexical meanings. In this section, I want to show that grouping *load*-verbs with verbs of creation is in fact semantically sound.

To this end, let us take a look at the similarities and differences among various kinds of verbs of creation. Normally, the process that leads to the creation of some resultant individual is in fact a process of transformation. This is the case e.g. for the classic type of verbs of creation, namely verbs with so-called effected objects as in (31):

(31)   a.   build a house (from bricks)
        b.   carve a doll (out of wood) / carve the wood into a doll

These newly created individuals have been made up of some particular stuff, and so PPs like *out of wood* can be added to represent the source substance. Sometimes, as in (31b), the verb allows an alternation that promotes the source substance to direct object position (cf. Levin 1993). Given this option, it would seem that the existence of this source substance is not merely implied by objects like *house* and *doll* but by the word meanings of the verbs as well. Such verbs then state that a new individual exists after completion of the event, and that it stands in a relation of **constitution** to some, often unspecified, source substance. The source substance, in turn, is not consumed or destroyed.

Furthermore, consider verbs that describe a transformation process such as those in (32):

> (32) a   cut the bread   (into thin slices)
>
>   b.   grind the coffee beans   (into a fine powder)

The characteristic property of such verbs is the manipulation of a portion of stuff such that a structured object ceases to exist (e.g. a loaf of bread) and another structured object comes about instead (e.g. slices, still constituted by the same portion of stuff). In line with the implicit information that the kind of stuff does not change, both the destroyed object and the resultant object can often be referred to by the same name, i.e. by mass nouns such as *bread, coffee,* etc.[30] In spite of the destructive kind of transformation that is described here, we also have a component of creation in these verb meanings, even if the resultant individual will often be fairly abstract. It can thus be seen that the relation of constitution, which holds between structured objects and their underlying substance, is quite essential for the semantics of verbs of creation. In fact, the notion of "creation" often has to be restricted to apply only to the realm of structured objects while the underlying substances are not affected. The importance of this distinction between structured objects and their constituting matter can also be demonstrated from a third group of verbs that describe the coming about of quite abstract entities such as holes (33):

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[30] As can be seen, the argument representing the source substance is usually linked to the direct object position, while the resultant individual is expressed by a pseudo-directional PP (see (32) above). Sometimes, however, alternations can be found with such verbs, as in the following German example:
> [GER]   das Getreide mahlen / Mehl mahlen
>   the corn   grind (INF) / flour grind
>   "to grind corn / to obtain flour from grinding"

Etymologically, the noun *Mehl* (flour) is a result nominalisation of the verb *mahlen* (to grind); this relationship is only obscured by the fact that *Mehl* has an irregular spelling, i.e. *e* instead *a-umlaut.*

(33) a.   to pierce a hole into the belt

      b.   to bore a hole

Holes behave perfectly like concrete objects in natural language: They have locations, sizes, and can be said to come into being. We can say that holes are pure structured objects that simply do not stand in a relation of constitution with any portion of stuff. Except for this pecularity, they can represent created objects in just the same way as the other ones mentioned before.

Viewed in the context of these different types of created objects, we can now begin to see how verbs like *load* (the group of verbs given in (1a-c) at the outset of this chapter) fit into this category. These verbs take a THEME and a LOCATION argument in the syntax, and state that the THEME comes to be located at the LOCATION. While this local relation is part of their meaning, it does not exhaust their semantics. Perhaps they should rather be characterised as "verbs of arrangement". Consider the case of *decorate:*[31] It is not an intrinsic property of a thing that it can be called a piece of *decoration* (although certain things may be particularly suitable to serve this function); rather, objects come to serve as decoration as soon as they are arranged in a certain way in a certain location. Consequently, *decoration* is a collective entity. It is made up of exactly those things that have been put in place in this particular way. Moreover, everything that is used in decorating a location acquires a new function in the process of being arranged in this way. So if, for example, a table is decorated with flowers, then "being the decoration" is not a state of the flowers, rather, *the decoration* is a new abstract object that is constituted by the flowers.

This is then how verbs of arrangement behave as verbs of creation: We find the same distinction between underlying matter and a structured object that is created, as it were, on top of it. The reason why it is not intuitively clear that verbs of arrangement are verbs of creation has to do with a number of pecularities: First, the resultant individual is of a very abstract sort: It is constituted by something that already contains structured objects (the THEME argument).[32] Furthermore, in line with this, no structured

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[31] Only in the interpretation involving "adornment". The use of *decorate* in the sense of *renovate* does not behave as a verb of creation.

[32] The THEME is often already a collective entity, too. However, note two things that show that the resultant individual is individuated independently: 1) The new function of the input object contributes to the individuation of the resultant individual. 2) The resultant individual is delimited by the event: It is made up of exactly that amount of stuff that has gone into arranging things in the particular way described. The THEME, which represents the source substance, is often a mass noun and not a limited quantity, cf. examples like *load the cart with hay*. As is well known, in this construction it is the direct object *cart*

object is destroyed or disintegrated, the event merely involves the creation of a new abstract entity. Third, unlike the verbs of transformation shown above, the resultant individual can never be expressed explicitly as an argument or an adjunct with the verb. The reason for this seems to be that the creation of the collective resultant individual lies very much at the heart of the verb meaning. So the verb meaning already fully specifies the properties of this individual, and all that could possibly be added in the way of an overt argument would always have to be a redundant cognate object (for which there is no object position available in the syntax, though). It therefore makes sense that the argument structure of these verbs consistently projects only the local relation between THEME and LOCATION that comes along with the event.

To summarise, the relevant parts of the verb meaning can be stated more succinctly as in (34) below. That part of the verb meaning that introduces the functional characterisation of the resultant individual is simply written as a relation R — since this is the single most essential part of the verb meaning, there would not be any way to state the contents of R without circularity. The content of R can of course most easily be recovered by asking for an elucidation of the lexical meaning of the corresponding result nominalisation. As the meaning of *decorate* has already been explicated above, I show the same point for another verb of the same type, *to load:*

(34) a. *Semantic arguments*

   load(e) (a,   x,   y,   r)

         AGENT, THEME, LOC, RES-I

b. *Lexical entailments:*

   a CAUSE (BEC (AT (x, $f_{LOC}(y)$)))

&   R(r,y), such that

   - it presupposes BEC (AT (x, $f_{LOC}(y)$)

   - y specifies a function for r   [roughly: "transport"]

&   CONSTITUTE(x,r)

   [here: r is a collective object with x-individuals as parts]

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which defines the limit of the event, hence *the load* will ultimately be delimited by the mapping of the event to the cart. In this, the collective object *load* is not dependent on the collection that may be comprised by the theme argument *hay.*

3.5. State Modification Revisited

In the preceding sections, it has been argued that the lexical meanings of the type of adverb under investigation can be properly understood only by tracing its meaning back to a property of an individual. This analysis can be extended even to one of the core cases of Parsons' (1990) account in terms of predicates of states. So let us now come back to the case of *to open the door wide,* which had been put aside during the discussion of verbs of creation.[33]

Parsons' analysis of *wide* as a manner modifier that targets the resultant state of a verb is so plausible because *wide* can also modify adjectives. However, on closer inspection, we see that the possibility of modifying *open* with *wide* is dependent on the context. Consider the distribution of the modifier in different uses of the verb *to open:*

(35)   to open {the door/ the window/ one's mouth} wide

(?) to open the book wide

?? to open {the bottle / the parcel} wide

?? to open {the meeting / the speech} wide

The modifier *wide* is applicable to situations in which *opening* consists in moving something apart. The feature that unites these situations with the uses of *wide* as an independent predicate is obviously the existence of a distance in space. So, opening a door, or one's mouth, induces an opening in the sense of a spatial region, whose extent can be measured as the distance from one end to another. Note the existence of the nominalisation *opening,* which again looks like a result nominalisation, although it is not exactly "resultative": This nominalisation denotes a particular region in space, which comes into being as soon as a particular concrete object is *open.* By the same logic that has been applied to verbs of implicit creation, we can state that information about this region in space must be present as an entailment in the state predicate, and regions of space are in fact another type of an abstract individual. I take it that the underlying lexical-conceptual meaning of the modifier *wide* involves predication of locations (more specifically, distances), so the adverb has to target the meaning component in the state predicate that speaks about locations. Therefore, the meaning of the collocation *wide*

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[33] I have nothing to say here about the analysis of Parsons' example *to close tight* While the same reservations apply concerning an analysis in terms of unexplained state predicates, it seems to me that the lexical semantics of the adjective *tight* is more difficult than the one of *wide,* so a reconstruction of this case would have to await a closer lexical analysis.

open could be rendered (provisionally!) as in (36) ("l" refers to the sort of locations; "f$_{LOC}$" is a function that maps a concrete object onto salient regions of space that can be defined with respect to this object):

(36)   s,x [open(s)(x) &   l:opening$_N$(l) & l   f$_{LOC}$(x) & wide(l)]

If this is so, I conclude that this case is indeed in line with the other resultative adverbs discussed above.

3.6. The Lexical Representation of Resultative Adverbs

In the preceding, it has been shown that resultative adverbs can only be interpreted on the basis of a certain type of individual. In this section I examine what this implies for the lexical representation of resultative adverbs. There are actually a variety of options to discuss.

3.6.1. Predication of an Individual

The easiest and most straightforward answer would be to say that the logical form of sentences with resultative adverbs involves predication over an individual variable, and much of the foregoing discussion may have implied that this is self-evident. However, there are a number of arguments that this would in fact not work. In other words, I claim that the logical form (37b) **cannot** be the correct representation of (37a) (with z being the created object):

(37)   a.   The worker loaded the cart heavily
        b.   x,y,z,e [load(e)(x,y,z) & worker(x) & cart(y) & heavy(z)]

For one thing, consider again the case of *wide open* in the preceding section, which has now been aligned with the resultant individuals with verbs of arrangement. The acceptability pattern in (35) not only shows that the existence of a resultant space region correctly discriminates the applicability of the adverb *wide* — at the same time, it precludes a treatment of this spatial region as an implicit argumet of the adjective *open.*

Only certain uses of the adjective *open* entail an opening qua spatial region; this depends on the kind of individual that the adjective is predicated of. Under these circumstances, taking it as an implicit argument would mean to posit an extreme amount of polysemy. So, rather, this abstract individual should not be part of the argument structure of *open* but seems to be something that is inferred in specific cases.

There are more empirical problems with the assumption that resultative adverbs literally predicate of an x-variable in the semantic composition. English quite generally disallows predicating adjuncts over implicit arguments; for instance, this does not work with depictive adjectives, as pointed out by Roberts (1987). Consider (38), where depictives are used to predicate of an implicit agent in a passive clause:

(38) a. They left the room sad / * The room was left sad

b. He_i shot the $canary_k$ $drunk_i$ / * The $canary_k$ was shot $drunk_i$

Furthermore, we would have to answer the question raised by the data in (21) above:

[21] ?? to water the plants coldly (with cold water)

?? to label the bottles greenly (put green labels on them)

?? to shelve the books woodenly (on a wooden shelf)

?? to bottle the whisky bulbously (in bulbous bottles)

The problem is, even if the lexical meanings of the adverbs require an individual, nothing so far enforces that this must be a resultant individual. Note once more the difference in accessibility between an implicit resultant individual and an implicit theme of the same verb:

(39) a. They loaded the cart heavily

b. * They loaded the cart redly (i.e., with something red)

Then, there is the problem of gaps: How could it be explained that we can use the adjective *wide* to predicate of a supposed implicit spatial argument, but not its opposite *narrow?*

(40) ? He opened the door narrow(ly) (a narrow opening)

All these observations suggest that it would be too simple-minded to assume that resultative adverbs literally are x-predicates in the logical form. The reasons that militate against this even exclude that a mechanism like Pustejovsky's qualia modification (see chapter 2.2.5.b.) could be invoked. As already said in chapter 2, Pustejovsky's original analysis concerning the qualia roles for verbs consisted of just the usual decomposition into subevents. But it would be of no help if we posit more and other qualia over and above these. The point is that the asset of qualia theory for attributive modification is that it makes an event available inside the meaning of an x-denoting noun for modification by an e-predicating adjective. The reverse case for adverbial modification would consist in making an individual available inside the meaning of a verb. But this boils down to the standard notion of an argument of a verb, and predicating of an argument of the verb is what we have just found to be insufficient. There is no way to reformulate qualia theory so as to gain other possibilities for modification by resultative adverbs.

3.6.2. Other Ways to Employ x-Predicates in Resultative Modification

Let us briefly explore some related possibilities to analyse resultative adverb constructions by taking an x-predicate from the lexicon; the question to be raised is whether we could start out from a lexical mismatch between an x-predicating modifier and an e-predicating verb, which is then repaired in the course of composition. Qualia theory has explicitly been designed to handle such mismatches, but has already been found to be inapplicable. Another move we could try would be to work with the interpolation of suitable information in the course of composition. Such a strategy has sometimes been proposed e.g. for resultative adjective constructions (Stechow 1993). In these constructions, the decomposition predicates CAUSE and BECOME would be inserted between an activity verb and a state predicate in order to create the accomplishment meaning (the material that has been added in the course of composition appears in boldface):

(41) *Lexicon:*   shoot(e)(x,y);   dead(s)(x)

      LF: *He shot the elephant dead*

      ∃y: elephant(y) & **∃e,s** ([shoot(e)(<u>he</u>,y)] **CAUSE BEC** [dead(s)(y)])

Here is a first way to do something similar for resultative adverbs. Assume that, in the case of *wide open,* we could freely infer and insert the information about the existence of a resulting spatial region (the opening); and correspondingly for the case of *load heavily* that we could infer and insert the information concerning the resultant collective individual (RES-I):

(42) *Lexicon:*   wide(l); open(s)(x)

      LF: **∃s,x:** open(s)(x) **& ∃l: opening$_N$(l) & l $\subseteq$ f$_{LOC}$(x) &** wide(l)

(43) *Lexicon:*   heavy(z); load(e)(x,y)

      LF: **∃e,x,y:** load(e)(x,y) **& ∃r: RES-I(e,r) &** heavy(r)

This process could be assumed to be governed by a procedure of abductive inference (cf. Blutner 1998). But it is not quite of the same kind as Blutner's cases, and also the parallels to the resultative adjective case in (41) are not very clear. The difference to (41) is that (42-43) would involve the introduction of arguments by interpolation, and it is doubtful whether arguments can be introduced outside of lexical entries. In particular, the information that is added along with the arguments would have to be considered part and parcel with the lexical meaning, even if it is not a meaning component that is fixed for all uses of the verbs. For example, it is hardly possible to separate the meaning component of the creation of a load from the verb meaning of *to load* (as has been argued earlier, it is rather the core of this verb's meaning). So interpolation seems to be the wrong way to deal even with cases like (42) which are marked by flexibility of lexical entailments. What interpolation really aims at here is extending the conceptual content of the verb (something that is not the case for 41).

A related proposal is put forward by Wunderlich (1997). He proposes a mechanism of lexical extension (in Wunderlich's terms: "lexical adjunction") that enables verbs to pick up additional predicates. The verb undergoes a lexical rule that creates an additional argument position for a property. This mechanism is proposed by Wunderlich in order to handle e.g. depictives. If applied to our case, it could look as follows:

(44)

Lexicon 1:	y,x,e [load(e)(x,y)] ; heavy(z)
Lexicon 2, V-extension:	**P**,y,x,e **∃z**[load(e)(x,y) **& RES-I(e,z) & P(z)**]
LF:	P,y,x,e z[load(e)(x,y) & RES-I(e,z) & P(z)] (z heavy(z))

By this mechanism, resultative adverbs could be taken from the lexicon as predicates of individuals; the meaning components that come with the reference to resultant individuals would be due to lexical variation of the verb, which has more initial plausibility. However, a crucial weakness of this approach is that it blurs the distinction between adjuncts and complements. Wunderlich proposes the same treatment for resultative and depictive adjectives, in spite of their marked grammatical differences[34] (cf. Winkler 1997). So it would be unclear how the grammatical difference between resultative adjectives and adverbs can be predicted. These are, of course, quite weak objections; but given that the mechanism of lexical extension is so powerful, it is not so easy to see how it could be refuted. So let me introduce the alternative analysis first and then try to weigh up the two analyses.

3.6.3. Predicate Transfer in the Adverb

a. Applying Predicate Transfer

The alternative to a lexical extension of the verb is to shift the meaning of the adjective / adverb. Instead of trying to access a resultative individual in the verb, we can shift the adjective to a predicate of events and employ the semantic relation between events and their resultant individuals as the relation that licenses this predicate transfer. So, at this point, I want to come back to the model that was argued in chapter 2 to provide the optimal analysis for shifts in the applicability of attributive adjectives. It will be remembered from chapter 2 that the point where we had to stop in applying theories of adjectival polysemy to oriented adverbs was the question of what the underlying conceptual meaning of an adjective might be, if the e-predicating variant is to be

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[34] In chapter 5, I argue that such an analysis should indeed not be adopted for depictives, since the meanings that are specifically conveyed by depictive constructions seem to be at odds with general constraints on lexicalisation.

explained as a case of "constructional" polysemy. The discussion of resultant individuals as implicit arguments of verbs has now given us a handle on this problem.

Nunberg's (1995) example *I am parked out back* contained the relation of possession as the licenser for the predicate transfer of the verb to park. I want to suggest that, in the case of resultative adverbs, we are dealing with a variant of a part-whole relationship as the licensing relation. Clearly, properties of parts can be highly suitable for characterising the overall condition of some larger entity. Consider e.g. the following examples that involve variation in the theme argument of two verbs:

(46)   to repair the engine / to repair the car

(47)   the tyre is pumped up / the bike is pumped up

For part-whole structures, whole hierarchies of predicability arise with respect to certain attributes, and in many cases this will give rise to different lexical senses of a predicate. Since eventualities are constituted, among other things, from an array of participants it may become possible to characterise the whole eventuality via a property of one such constitutent part. Below I repeat Nunberg's (1995) template for shifting a predicate P to a new predicate that applies to another sort of individual (with x as the "original" individual to which the predicate applies in a strict sense):

(48)   P y ($x_{[dom\ h]}$: h(x)=y & P(x))   [= (79) of chapter 2]

For this transfer to be allowed, a special, salient transfer function h must be available that provides this connection (cf. chapter 2, section 2.2.5.f). The special relation that holds between resultant individuals and the events they result from is exactly the right kind of licenser. We have seen above that the description of resultant individuals often lies at the heart of what characterises the verb meanings (e.g. the meaning of *load* in distinction to *put*) and can hardly be stated separately from the verb meaning. And moreover, resultant individuals are intimately connected to an event because their existence is contingent on the event. So, of all arguments of a verb, resultant individuals should be suited best to characterise the eventuality as a whole. We can apply the template (48) to shift the adjective *heavy* to a neo-Davidsonian state modifier (the transfer function h acts as something like the mirror-image of a thematic role here):

(49) $s (\ x_{[dom\ h]}: h(x)=s\ \&\ heavy(x)]$,

with h as the function that assigns a created object the (resultant) state in which it exists

Since resultant states are in turn constitutive parts of events, we can perhaps also construct a true event modifier out of the adjective — i.e., transfer the adjective to an even larger entity. This can be done in a single step by inserting a function h' that assigns a created object the whole event by which it is brought about:

(50) $e (\ x_{[dom\ h]}: h'(x)=e\ \&\ heavy(x)]$

I want to remain agnostic here as to which variant should be used in the composition. The crucial point is that Parsons' (1990) idea of using manner modification for states (cf. (9) in section 3.2. above) can be reconstructed on the basis of x-predicates in the way just shown; but it would also be possible to use a normal e-predicate as long as it "knows" by virtue of its lexical meaning which subevent it has to address.

This may look like a very simplistic solution for a complicated problem. But, to emphasise this point, the complications which undoubtedly exist are now located within the lexical representation of the adverb, especially in the transfer function. In terms of the distinction introduced in chapter 2, we can characterise this solution as basically an instance of sense variation, but it is situated on a shallow level of lexical representation, and in this respect it is equivalent to the constructional approaches. Still, the difference is important, since the assumption of direct predication of an x-variable in the Logical Form appears to create many problems.

b. Predicate Transfer vs. Lexical Extension

At this point, I would like to try an evaluation of the Predicate Transfer approach (henceforth PT) as compared to a Lexical Extension approach (LE, for short) in the style of Wunderlich (1997) (cf. 44 above). The important property of the LE approach is that it employs an x-predicate in the compositional semantics, while the PT approach employs an s- or e-predicate. I can think of five criteria against which the proposals can

be checked (most of them have already played a role for excluding predication of an implicit argument in the sense of section 3.6.1.)

1) Adverbial morphology: If resultative adverbs are x-predicates in Logical Form, we are lacking an explanation for why adverbial morphology appears on resultative adverbs (where it is available). It is tempting to assume that adverbial morphology reflects the semantic fact that the e-variable of the verb is accessed in the semantic interpretation. So this seems to be a weak argument in favour of PT.

2) Semantic flexibility of verbs: As could be noted for various verbs and adjectives in the discussion of this chapter, the existence of resultant individuals is highly variable and depends on fine points in the readings that verbs and adjectives receive — see the case of *leave* in footnote 28 (related to example (28)), and the variability of the adjective *open* in example (35) above. It seems that both LE and PT can cope with this phenomenon equally well. The application of the rule of lexical extension must, and can, be made sensitive to the existence of a resultant individual in the reading that a verb assumes on specific occasions. Likewise, the transfer function in PT will be sensitive to the same semantic factors.

3) Gaps and fixed collocations: Collocations of verbs and resultative adverbs seem to be restricted in idiosyncratic ways and often feel idiomatic. Of course, one cannot be sure that systematic semantic explanations cannot be found, e.g. for the contrast *to open wide — * to open narrowly*. But in the absence of any arguments to this effect, we should for the moment accept the existence of arbitrary gaps in the modification possibilities. It may seem then that LE is better suited to incorporate this, because the lexical entry after lexical extension contains the slot for the resultative adverb as well, cf. again (44):

[44]   *... Step 2, V-extension:*   **P**,y,x,e ∃**z**[load(e)(x,y) **& RES-I(e,z) & P(z)**]

So the whole collocation of verb and modifier is represented within the same lexical entry and therefore conditions on the kind of admissible properties P can be formulated quite naturally. PT does not provide any similar way of accounting for fixed collocations. However, this seems only a very weak advantage of LE, for the phenomenon of idiomatic collocation is found with other types of modifiers as well (and of course also with verb-object combinations, etc.). For instance, in the area of manner modification, we find the collocation *to sleep fast* but not, say, *to sleep firmly.*

4) Only resultant individuals can serve as the basis for adverbial modification. It has already been explained why this is well motivated under the assumption of PT. In contrast, LE would seem to overgenerate in this respect, and I cannot think of a natural way to restrict the lexical extension mechanism. For example, the inacceptable construction *to shelve the books woodenly* could be represented by a minor variant of (44):

(51)   **P**,y,x,e   z[PUT(e)(x,y,z) & shelf(z) & LOCATION(e,z) & **P(z)**]

5) Coordination: If LE is correct, it should be possible to coordinate resultative adverbs with other x-predicates, while with PT coordination with e-predicates should be possible. Since all other known x-predicating adjuncts are of different semantic types, only the test with e-predicates remains. With regard to these, there again seem to be many restrictions, but the fact that examples like (52) do not sound too bad points to the conclusion that *finely* should indeed be regarded as an e-predicate:

(52)   to grind the beans quickly and finely

So to sum up, the Predicate Transfer analysis fares better in most respects. Resultative adverbs do not behave as if they entered semantic composition on the sentential level as x-predicates.

c. Solving the Puzzle of Entailments

We can now come back to a problem raised at the beginning of this chapter: Why doesn't the entailment in (11b) (repeated below) go through despite the fact that Parsons' neo-Davidsonian logical form (11a) appears to validate it?

[11]   a.   wide(s) & open(s) & Theme(s, the door)
                  wide(s) & Theme(s, the door)
       b.   the door is wide open ?   ?   the door is wide

This problem now finds a solution: In essence, there is an implicit parameter hidden in the meaning of *wide.* Note that both the x- and the s-predicate *wide* must be the result of a predicate transfer, since in its underlying meaning, *wide* is to be taken as a predicate of locations, as argued above in 3.5. In order to apply it to any other sort of entity, we have to find a salient measurable spatial region associated with it. The point is now that the x-predicating and the s-predicating variants select different regions, and this is why the entailment in (11) does not go through.

To see this, I have to add another fine point that has not been addressed so far, but which is crucial. The point is, predicate transfer effects a change in the type of entity that is selected in the subject position, so with the predicative adjective *wide* we have a shift from locations to concrete individuals, for example. With the resultative adverb *heavily,* the shift is from concrete individuals to eventualities. But note that we have to distinguish between the theme argument of a state and its referential argument. The predicate transfer does not occur in the referential argument, and hence the state variable that the resultative adverb ends up with is not its referential argument, but its theme argument. Example (53a) shows the representation that we would expect for the shift from the x-predicate *heavy* to a resultative adverb if my own notation conventions are used instead of those of Parsons (1990):

(53)   heavy(s)(x)   heavy(s)(s*)

Admittedly, the result of the shift looks outrageous: It seems to assert that a state is in a state, something completely unheard of in event semantics. It is a puzzle of neo-Davidsonian semantics that predication of an individual can define a state, but the otherwise similar predication of an eventuality never does; still we have to accept it as a matter of fact. The fact that this bizarre issue arises does not mean that the present account is on the wrong track. Rather, once the distinction between referential and thematic arguments is acknowledged, we can dispense with the doubling of state arguments — what is to be kept is only the insight that the event argument that neo-Davidsonian theory posits for adverbs is not a referential argument (as it is with verbs). So for the derivation of modifier readings from adjectives we could as well posit the representation (53'), which explicitly marks the absence of a referential argument of the modifier, to be on the safe side:

(53') heavy(s)(x)   heavy(-)(s*)

Perhaps, the predicate transfer changes properties of the predicate itself along with the sort predicated of. The right hand side of (53') is in line with Kratzer's (1995) theory of individual-level predicates, which she assumes to lack a state argument and be predicates of individuals only. The two options for predicate transfer that can occur with *wide* would be viewed as completely analogous (I remain agnostic as to the existence of a Davidsonian argument for the underlying variant):

(54) a.   wide(?)(l)   wide(s)(x)   (x-predicating adjective)
      b.   wide(?)(l)   wide(-)(s)   (resultative adverb)

To be interpretable, *wide* now requires that a distance in space can be found that is associated with its theme argument, and for example (11) two different spatial regions are relevant: From the adverbial variant, we recover the "opening", because this is the spatial region that is specifically associated with the state of being open (to be found in the theme argument position). From the predicative variant, we recover the distance between the doorposts, because this is the spatial region that is specifically associated with the door as an individual (again, the theme argument). Given all these considerations, example (11a) should rather be rewritten as follows:

(55) wide(-)(s) & open(s)(x) & x=the door   ?   ?   wide(s)(x) & x=the door

It can now be found that the entailment indeed does not hold, because given our assumptions about the lexical meanings, *wide(-)(s)* does not entail *wide(s)(x),* even if the door is always part of the situation.

3.7. Conclusion

In this chapter, I have shown that resultative adverbs have to be interpreted with reference to an individual, namely a resultant individual, which is given by the meanings of the verbs that are modified. The adverb, however, is only indirectly dependent on this individual, i.e., the implicit individual figures as the licenser of a

predicate transfer from an x-predicating adjective to an s-/e-predicating one. In this way, we have seen a case in which neo-Davidsonian predication had to be reconstructed in terms of lexical meanings that are not primarily event-related.

Chapter 4

Agentive Adjectives and Adverbs

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Overview:

4.1. The Range of Variation

4.2. Agentive Adverbs as a Syntactic and Semantic Class

      4.2.1. Speaker vs. Subject-Orientation

      4.2.2. Factive Paraphrases

      4.2.3. The Lexical Classes of Agentive and Evaluative Adverbs

4.3. Previous Analyses of Agentive Adverbs

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4.4. The Lexical Analysis of Agentive Adjectives

      4.4.1. Properties of the Clausal Argument of Agentive amd Evaluative Adjectives

      4.4.2. Properties of the *of-* PP

      4.4.3. The Lexical Content of the Agentive Adjective *Stupid*

      4.4.4. Towards a Formal Representation

4.5. The Agentive Adverb Construction

4.6. Explaining the Alternations

      4.6.1. Manner Adverbs

      4.6.2. IL-Predicates

4.7. Conclusion: The Lexical Alternations of Agentive Predicates

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In this chapter, I turn to the investigation of another lexical class of adjectives that regularly gives rise to event-related modifiers, namely individual-level predicates describing a disposition. The adjective *stupid* can serve as a paradigm example for this class, which will be delineated more precisely in later sections. It was already pointed out in chapter 2 that adjectives from the *stupid*-class do not give the impression of retaining their individual-related meaning in the adverbial variant. The goal of this

chapter is to show that, nevertheless, the meaning of the manner adverb *stupidly* is to be reconstructed on the basis of an underlying lexical meaning which itself does not refer to a "manner".

4.1. The Range of Variation

The *stupid-* class of adjectives is notable for showing a very regular alternation between two different adverbial uses. The task we are facing is therefore to explain the existence of the following pattern of variation in the use of adjectives like *stupid:*

(1)   a.   **Predication of an individual:**

(a-1) Individual-level adjective:*John is stupid*

(a-2) Agentive Copula: *John is being stupid*

b.   **Manner**

(b-1) Manner adverb: *John lied to me very stupidly*

(b-2) Manner adjective: *John lied to me in a very stupid manner*

c.   **"Agentive" variant**

(c-1) Adjective with subject clause:

        That John lied to me was stupid (of him)

(c-2) Adverb: *John stupidly lied to me*

It can be seen once more that the morphological distinction between adverb and adjective does not bear on the variation in lexical semantics. The sentences under (c-1) and (c-2) seem to be very close paraphrases of each other (and the same holds for those under (b-1) and (b-2), of course). This is not to deny that there might be some fine differences in meaning between (c-1) and (c-2). However, given the closeness in meaning, it can be expected that the two are lexically identical, and that the residual differences in meaning can be understood as originating from the specific construction in which the adjective appears. This is a point that will have to be investigated.

    With the data as in (1) as a starting point, we are facing a major problem in providing an analysis of the semantics of variant (1c). The accounts of this type of

adverb that have been given in the literature so far — often more or less in passing — do not seem to be able to account for it very satisfactorily. It is symptomatic for the lack of a satisfying account that there is not even a commonly accepted term to refer to these adverbs. Jackendoff (1972) and McConnell-Ginet (1982), and much of the syntactic literature, speak of "subject-oriented" adverbs, but the adverb classification that underlies this terminology will have to be called into question in the next section. Other terms that have been used are "disjunctive modifier" (Quirk et al. 1985), "stative reading" (Higginbotham 1989), or "evaluative adverb" (Eckardt 1998). Wyner (1994) calls them "event adverbs", but this terminology is to be understood in the context of Wyner's (1994) non-standard ontology of events, and therefore will have to be avoided in a neo-Davidsonian framework. In later work, Wyner (1997) refers to them as "factive adverbs". All these terms do capture some aspect of the semantic properties of these adverbs, or at least apparent properties, but all of them have certain shortcomings. In view of the terminological confusion, I feel free to coin a new term and so I shall call the variant in (1c) above an **agentive adverb**. The full motivation for this terminology will become clear from the discussion in section 4.5. Since I am going to defend the position that the corresponding adjectival constructions with a clausal subject have the same lexical meaning as agentive adverb constructions, both the terms "agentive adverb" and "agentive adjective" will be found in the following, only depending on the construction in which they appear.

Before we can turn to the question of the lexical relationships among the three variants, we have to provide an analysis of the semantics of the agentive variant. This will in fact take up a large part of this chapter

4.2. Agentive Adverbs as a Syntactic and Semantic Class

The purpose of this section is to review the literature with regard to proposals for classifying agentive adverbs and neighbouring types, and to review the kinds of criteria that have been adduced there.

4.2.1. "Speaker- vs. Subject-Orientation"

What I have dubbed "agentive" adverb here has traditionally been referred to as a "subject-oriented adverb". This term seems to originate from the seminal treatment of Jackendoff (1972), where it serves to distinguish "subject-oriented" (e.g.(3)) from "speaker-oriented" (e.g.(2)) sentence adverbs:

(2)   Happily, John won the game

        Truthfully / Frankly, John lied to Bill

(3)   Carefully / Clumsily / Cleverly, John spilled the beans

It is noteworthy that in Jackendoff (1972), the point of discussing these two semantic classes was to argue against a treatment in terms of syntactic transformations turning adjectival constructions into adverbs. Jackendoff objects that, although usually some adjectival paraphrase can be constructed, these are simply too variegated to support such a transformational approach. In the same vein, Bellert (1977) criticized the notion of "speaker-oriented" adverbs for uniting too many different types; she argues that we should distinguish at least the following subtypes (presented here according to the overview in Cinque 1999):

(4)   a. domain adverbs   (politically, legally, semantically, ...)

        b. pragmatic adverbs   (frankly, sincerely, ...)

        c. evaluative adverbs   (regrettably, luckily, fortunately, ...)

        d. modal adverbs   (probably, certainly, presumably, ...)

Indeed, it is too superficial an account to group all these together solely on the grounds of (sometimes far-fetched) paraphrases like (4a) "Legally speaking..." (4b) "I am being frank in saying..." (4c) "I regret that ..." (4d) "I am certain that ...". This is actually in line with Jackendoff's argument against a transformational approach, which, in those days mostly meant that the paraphrases were taken to be the actual starting point of the transformations. In discussing the issue from this angle, Jackendoff's distinction of semantic types of sentence adverbs is to be understood as based on intuitive cluster concepts, and not on a regular pattern of correspondences. Nevertheless, his classification has been widely adopted, and much of the current syntactic literature on

adverbs still seems to rely on it. This is not to deny that a dichotomy between "subject-" and "speaker-"oriented adverbs might arise from syntactic observations; I only want to deny that this can readily be taken as a starting point for the semantic analysis. So the aim of this section is to substantiate the following two criticisms against "subject-" vs. "speaker-"orientation as a semantic classification of adverbs:

  • First, the designations "subject-" and "speaker-orientation" ascribe the semantic properties of the adverbs to the wrong parameters.

  • Second, both classes lump together elements that have very different semantic properties, while at the same time passing over basic similarities that unite certain subtypes across the classes.

Let us narrow down on the class shown in (4c) above, the class of adverbs termed "evaluative" by Bellert. This class is of particular interest because of its various commonalities with agentive adverbs, and it is especially this subtype for which the characterisation "speaker-oriented" is inadequate. Consider the following examples:

(5)   a.   Regrettably, John could not come.

         b.   Regrettably for John, he could not come.

The adverbs of this group uniformly allow a prepositional complement introduced by *for.* The argument of this preposition provides the person from whose perspective the evaluation is made. If the PP is omitted, the adverb can be (or must be) construed as evaluating a state of affairs from the point of view of the speaker. It is a specific property of the class of evaluative adverbs that they allow this kind of shift; "pragmatic" adverbs, for instance, seem to resist it:

(6)   a.   John said that, regrettably, he didn't have enough money

         b.   ? John said that, honestly, he didn't have enough money

The behaviour of *regrettably* in (6a) can be called logophoric: It follows the shift of the narrative centre evoked by the matrix clause. While this particular behaviour (unlike the case of *for*-PPs) could be reconciled with the notion of "speaker-orientation" in some sense, other adverbs are found to be "speaker-oriented" in a more strict sense, that is, the pragmatic adverbs like *honestly* seem to be fixed to the speaker as the origo of the utterance. (Domain adverbs like *semantically,* on the other hand, do not seem to be

speaker-dependent at all — in spite of the collocation *semantically speaking).* So, in sum, we have to conclude that the term "speaker-oriented" does not exactly describe the function of adverbs like *regrettably,* for when they are oriented towards the speaker this is in a way accidental: It is then just one particular choice of a basis of evaluation.

In a similar vein, the notion of "subject-oriented" adverbs must be criticised: Contrary to appearances, these adverbs are not sensitive to the grammatical subject relation, and they do not form an homogeneous class either. The classical designation "subject-oriented" derives from the following pair of observations: First, there is an intuition that these adverbs make some kind of attribution to the individual referred to by the subject NP. Consequently, they combine with verbs that describe an action at least in the sense that a situation is conceived as being under the control of the subject. "Speaker-oriented" adverbs, as a rule, are less restrictive in this respect:

(7)   a.   ?? Intelligently, the glass didn't break

       b.   Happily, the glass didn't break

In passive sentences, a shift in this attribution behaviour can be felt:

(8)   a.   John intentionally seduced Mary

       b.   John was intentionally seduced by Mary

(9)   a.   The police stupidly caught John

       b.   John was stupidly caught by the police

In the b.-examples, it is not the agent (Mary, the police) that is attributed intention or stupidness by the adverb — it is now John. How does this come about? The term "subject orientation" expresses a conception according to which it is the grammatical status of a participant that decides on the orientation of the adverb. However, the fact that different arguments occupy the subject position is not the only difference in the above sentences. Another difference is of course the presence of a passive construction with the auxiliary "be". Proponents of the subject-orientation analysis have argued that the passive construction cannot or should not be considered the trigger of the change of orientation because the passive is a syntactic phenomenon without truth-conditional effects (e.g. McConnell-Ginet 1982). On closer inspection, this supposition is not borne

out, however. On the contrary, Wyner (1994, 1998) argues that it must be the semantics of the predicate that causes the change of orientation in examples like (b.), rather than grammatical relations on the syntactic surface. Instead of reviewing Wyner (1998), let me offer an additional argument to the same effect, which originates from comparing English and German with respect to passivisation. In control infinitives, a contrast can be observed that leads one to conclude that passivisation can indeed be accompanied by a semantic effect. Consider the English example (10):[35]

(10)   I persuaded John [PRO to be examined by a doctor]

In German, the literal translation of the above control construction turns out to be unacceptable:

(11)   ?? Ich überredete John [PRO von einem Arzt untersucht zu werden]
         I persuaded John [... by a doctor examined to be]

The unacceptability of the German example is easily explained: The persuasion has to consist in persuading someone to do something, but if John is examined by someone else, this by itself cannnot be considered to be an action **of John**. In order for the passive infinitival to represent an action of John, he (i.e., PRO, coindexed with John) must be ascribed some degree of control over the event, probably in the sense of arranging or allowing it. If this interpretation is desired, German uses a different auxiliary that replaces the standard *werden*-passive, namely the auxiliary *sich lassen* (glossed in (12) as "let himself"; it is an inherently reflexive verb). Since it can be used to mark the difference, it must appear:

(12)   Ich überredete John [PRO sich von einem Arzt untersuchen zu lassen]
         I persuaded John [PRO himself by a doctor examine to let]

In English, however, the passive auxiliary seems to be ambiguous between the two functions.[36] In line with this difference between German and English, we also find that orientation of adverbs towards a passive subject is impossible with *werden,* but requires *sich lassen* as well:

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[35] The existence of such examples was pointed out to me by Marga Reis (p.c.).
[36] Speakers of English who do not consider the "get"-passive a marked option sometimes express a preference to use the auxiliary "get" instead of the "be"-passive in sentences like (9b).

(13) a. ? John_i wurde absichtlich_i von Maria verführt

      John was intentionally by Mary seduced

    b. John_i ließ sich absichtlich_i von Maria verführen

      John let-himself intentionally by Mary seduce

This result is consonant with the claim arrived at by Wyner (1994, 1998) on the basis of a different line of reasoning: There must be two variants of the passive auxiliary "be" in English: a semantically empty one, and another one that ascribes its subject an additional semantic feature of control over the whole situation (identified by Wyner as a "proto-role" entailment in the sense of Dowty 1991). It is this semantic feature of the surface subject — added on top of the other semantic role entailments — that leads to the impression of "subject-orientation" of adverbs like *intentionally* and *reluctantly*. However, it is not the change in the surface subject in passivisation that leads to the orientation effect; rather, in the passive case the adverb is applied to a complex predicate with an additional semantic feature (imputing control over the situation to the patient), and in the active variant it is applied to a prediate that doesn't contain such an additional feature. Linking principles forbid to endow the patient with such a control feature in active sentences, because control over an event is an important agentive entailment and hence incompatible with linking to object position.

      Although orientation is not to the surface subject as such, we still have to acknowledge that the orientation effect in passives can only arise because the adverb ascribes a participant some property. Thus, agentive adverbs indeed seem to be oriented to an argument, but this argument is retrieved via thematic relations that come in with the event variable, not syntactically. Hence, "subject orientation" is a misnomer for this behaviour, and we should thus rather speak of "agent orientation". Orientation towards an event participant must then be a unifying feature of all "subject oriented" adverbs. Wyner (1994, 1998) made this point only for the adverbs *intentionally* and *reluctantly,* but we obviously have to enlarge the scope of the account to cover the type *stupidly,* too.

      So far, I have argued that the classification of VP-external adverbs into speaker-oriented vs. subject-oriented ones does not characterise their meanings adequately. The

next step will be to point out that the class of agent-oriented VP-external adverbs is internally inhomogenous, too.

It is a characteristic of agentive adverbs that they have variants which occur inside VP. With respect to these VP-internal counterparts, a couple of distinctions emerge between the type *reluctantly* and the type *stupidly*. For one thing, while *stupidly* alternates with a manner reading, it seems that the same cannot be said for the first type: *intentionally* cannot be paraphrased by "in an intentional manner", and although *reluctantly* may yield a manner interpretation (i.e. "reluctance just for show"), it is clearly able to denote just an attitude as well (cf. example (14) below). In this respect, there is no striking difference between the VP-external and the VP-internal occurrences of the *intentionally*-class, while for *stupidly* this difference is so marked that many researchers are tempted to assume lexical ambiguity here. In line with this, a crucial difference that emerges between the types *intentionally* and *stupidly* is that adverbs of the former type can change their orientation also in VP-internal position:

(14)   John got kicked intentionally

Such examples have an interpretation in which it is John who has the intention to get kicked, or is reluctant to get dismissed, etc.[37] This provides additional evidence against the traditional distinction between "subject-oriented" external adverbs, and "agent-oriented" manner variants. An analogous interpretation is impossible for manner adverbs proper:

(15)   John got arrested stupidly

Here, only the event of arrestation can have "stupid" features, and if they can be ascribed to any individual at all, this would not be the surface subject *John*, but rather the implicit agent. Note, incidentally, that both types of adverb, those in (15) as well as those in (14), receive the neutral sentence accent. In this, they behave like typical manner adverbs.

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[37] To iterate this reservation, the use of the auxiliary *get* is quite restricted for a number of speakers, therefore the above point can only be made on the base of certain varieties of English. The problem is that, somewhat unexpectedly for the theory, passive *be* does not consistently yield interpretations as the ones in (14). Nevertheless, the contention in the literature (e.g. McConnell-Ginet 1982) that VP-internal adverbs never are oriented towards the surface subject in passives, idealizes over a great deal of uncertainty in informants' judgements. I for one was unable to replicate the supposed clear-cut distinction with the informants I asked, though there is no denying that a tendency exists in this direction. I conjecture that the patient-control reading for passive *be* must be enforced by some contextual feature, be it an adverb or an embedding under a predicate like *persuade.*

This difference between the VP-internal variants of *intentionally* and *stupidly* does not strictly entail that their VP-external variants function differently, but it does show that they fall into different classes in terms of lexical meanings (always presupposing that the external-internal alternation is rule-governed). As a result of the foregoing, we have to note that *stupid* possesses an underlying meaning that makes a manner reading in internal position inevitable, whereas the *reluctantly*-class allows for other interpretations, and perhaps opens up a spectrum of vagueness between the readings of "manner" and "attitude".

4.2.2. A Cross-Classification: "Factive" Paraphrases

In this section, I want to show that the classic distinction between subject- and speaker-oriented adverbs is insufficient in yet another respect: There is an important feature that unites certain subclasses from within the "subject-oriented" and "speaker-oriented" classes to the exclusion of others of their subclasses.

Note, first, a difference in paraphrases with the VP-external uses. While *stupidly* easily lends itself to paraphrases in which it predicates over a clause, this is not so for *reluctantly* and many others of this latter type of "subject-oriented adverbs":

(16) a. That John lied to me was stupid

  b. That John told the truth was ??reluctant / ??willing / (?)intentional

This property of being **predicative** unites *stupidly* with the evaluative subclass of Jackendoff's "speaker-oriented" adverbs, setting off these two against the other subtypes of sentential adverbs distinguished by Bellert (1977) (cf. above).

(17) a. **domain adverbs** (politically, legally, semantically, ...)
  # that John lied to me is legal

  b. **pragmatic adverbs** (frankly, sincerely, ...)
  ?? that John lied to me is frank

c.   **evaluative adverbs**   (regrettably, luckily, fortunately, ...)

<u>ok</u> that John lied to me is regrettable, fortunate ...

d.   **modal adverbs**   (probably, certainly, presumably, ...)

<u>ok, but not "factive"</u> that John lied to me is probable, certain ...

(18)   **subject-oriented adverbs** (without attitude reading)

<u>ok</u> that John lied to me was stupid, rude, clever ...

Many of the "modal" adverbs allow the same paraphrase, it is true, but there is still one factor that unites evaluative with "subject-oriented" adverbs: The difference is that the latter two consistently entail the truth of the that-clause, while modal adverbs (of course) don't. For this reason, we can refer to evaluative and subject-oriented adverbs of the *stupidly*-class with a common term, so let us call them **factive adverbs** (correspondingly, adjectival forms will be called factive adjectives). The importance of the notion of factivity in the analysis of these adverbs was pointed out by Wyner 1997, who was mainly concerned with analysing the logical behaviour of these adverbs. I shall come back to this notion of factivity. To conclude for the moment, there exists an important criterion which creates a cross-classification as compared to the traditional classification.

4.2.3. The Lexical Classes of Agentive and Evaluative Adverbs

In this section, I proceed to show that the distinction between agentive and evaluative adverbs that we started out with must still be maintained, but this must be done within a larger coherent class that comprises both, to the exclusion of other "sentence adverbs". The subclass of evaluative adverbs (and adjectives), though not in the focus of this work, provides a useful background from which we can sort out the lexical meaning of the agentive class.

The differences between evaluative and agentive adverbs reside mostly in their lexical meanings. To analyse the lexical meanings, it is necessary to take the adjectival variants into consideration, too, because a number of distinctive properties only show up in the adjectival construction. For the same reason, the detailed examination of the

lexical meanings in section 4.4.3. will also centre on the adjectival variant. The issue of the lexical identity of agentive adverbs and adjectives will also be addressed explicitly in a later section, once the exact lexical meanings have been made clearer. For the time being, let us rely on the existence of a paraphrase relation between agentive adverbs and adjectival constructions.

A very clearcut difference between agentive and evaluative adjectives concerns the type of PPs that can be associated with them: While agentive adjectives take *of-* PPs, evaluative ones consistently select *for:*

(19) That was clever of John / ?? for John

(20) This is sad for me / ?? of me

The contrast in (19-20) is correlated to the fact that agentive adjectives are especially selective as to the contents of their complement: It is required to be an agentive event description:

(21) a. It was clumsy of John that he broke the glass

b. ? It was clumsy of John that the glass broke

c. It was unfortunate that the glass broke / ... that John broke the glass

What is more, these adjectives not only select for an event description that involves agentivity, they additionally require that the agent of this event is identical to the argument in their PP complement:

(22) a. It was stupid of John that he broke the glass

b. ?? It was stupid of John that his little daughter broke the glass

(23) a. It was stupid of the defender that he passed the ball back to the goalkeeper

b. ?? It was stupid of the defender that a forward stepped in his pass.

Since the presence of an *of*-PP with an adjective (as opposed to a PP with *for)* correlates with the selectivity for an agentive event description, and moreover given the requirement that the argument of *of* is identified with an embedded agent, the idea

suggests itself that the referent of the *of*-PP has some kind of agent role. However, we are obviously not dealing with the usual kind of agent adjunct as it is known from passive constructions. To begin with, the preposition is not the familiar *by.* The role of *of* and of the identity requirement just sketched are some of the problems that the lexical analysis of agentive adjectives will have to solve. However, we can already use our initial observations to classify some more examples:

(24) **Evaluative adjectives:**

- Take a *for-* PP

- Do not specifically select for agentive event descriptions

- Examples:

Surprising, astonishing, regrettable, odd (that...), (un)fortunate, lucky, sad (that...), happ(il)y, tragic, interesting, convenient, ...

(25) **Agentive adjectives**

- Take an *of-* PP

- Require agentive event descriptions in their complement (with identity of the *of-* NP and the embedded agent)

- Examples:

Intelligent, wise, stupid, clever, skilful, clumsy, careless, reckless, cautious, careful, absentminded, forgetful, lavish, generous, callous, diplomatic, (im)polite, tactful, thoughtful, rude, ruthless, bold, ...

Concerning the agentive class, it is possible to give an additional characterisation of this group. They can all refer to "dispositions" in some sense. Moreover, the examples seem to fall into three more specific subgroups. The first one, with *intelligent, wise, stupid, clever, skilful, clumsy, adroit,* describes capabilities; the second one, comprising *lavish, generous, callous, rude, diplomatic, tactful* evaluates actions from the background of social standards or their social effects[38]; and finally there is a third group that can be characterised as referring to attentional states, in particular *careless, cautious,* or *absentminded.* However, such intuitive groupings are only of limited use. There seem to be a few adjectives that are preferably applied to willful actions but nevertheless pattern with evaluatives in important respects. For instance, *(in)appropriate,* which occurs

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[38] This would also seem to be true of *appropriate,* though.

rather with *for,* if it takes a PP at all, serves to characterise behaviour, i.e. actions of a responsible agent, in many of its typical uses:

(26)   It was inappropriate (?of John) that he kissed her on the lips

It may be appropriate for you to discuss this with your lawyer

It was appropriate that John came at that moment (i.e. he happened to come along)

It was inappropriate that she was wearing shorts

Likewise, the adjective *understandable,* though it seems to speak preferably about actions, does not accept an *of*-PP.[39] Therefore, the selection of prepositions is the clearest and most reliable diagnostic for a distinction of lexical classes. The existence of two different lexical classes that correlate with the appearance of *of* is also confirmed by the observation that preposition selection predicts the existence of an individual-predicating variant. We find that all adjectives with *of* can also be used as individual-level predicates, but no adjective that selects *for.* (This point will be continued in section 4.6.2.).

For practical reasons, the discussion in this chapter will have to centre on a few exemplary cases, and *stupid* will continue to serve as a paradigm case for an agentive adjective.

4.3. Previous Analyses of Agentive Adverbs

4.3.1. Event-based Analyses

Since the adjectives in the paraphrases above combine with *that*-clauses, it might seem obvious that they target propositions. Still, in many accounts of agentive adverbs that have been published, the authors offer analyses that treat them as some kind of event adverb. Obviously, this is felt to be a more interesting and reductionistic approach, and maybe it has some intuitive appeal, too. In the following, I shall give a fairly detailed review of two approaches to agentive adverbs in terms of events, namely McConnell-

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[39] Also, both adjectives clearly pattern with evaluatives in their temporal behaviour (cf. the point on sequence of tenses in section 4.4.2.d.)

Ginet (1982) and Wyner (1994). Although both ultimately prove to be insufficient, it will be useful to see their stance on the problem of explaining the difference between agentive and manner adverbs. Incidentally, we will see later that neither an event-based nor a purely proposition-based analysis of agentive adverbs can be implemented straightforwardly. Agentive adverbs exhibit properties that are a curious mixture of both.

a. McConnell-Ginet (1982)

McConnell-Ginet (1982) provides an early account of the effects of syntactic position on the interpretation of adverbial modifiers, and she gives a very clear statement of the basic problem which concerns us here. In a semantics that renders manner adverbs as operators, common in those days, this problem presents itself even more sharply. McConnell-Ginet's exposition of the problem is as follows: If *rudely* is a predicate operator, the two variants (agentive and manner, in our terminology) could at best translate into something like the following:

(27) a. Louisa rudely departed

(Louisa) (rudely (x (x departed)))

b. Louisa departed rudely

(Louisa) (x (x (rudely (departed))))

However, McConnell-Ginet goes on to argue, "the predicates 'departed' and ' x (x departed)' differ only structurally, not semantically" (p. 161). Hence, we don't know how the structural difference alone could give rise to the semantic difference between manner and agentive adverbs without the assumption of lexical variation. As soon as lexical variation is assumed, however, it is no longer clear why the different lexical variants must be associated with the different syntactic properties that they exhibit (i.e. their ordering in the clause). McConnell-Ginet's solution takes manner adverbs as arguments of the verb, not as predicate operators (the details of this proposal need not concern us at this point). The problem of agentive adverbs is then resolved by the assumption that there is an abstract higher verb ACT present in the clause. Agentive adverbs are associated with this verb in very much the same way as manner modifiers

are with the main verb. In so far, her account can be subsumed under treatments of agentive adverbs as event-related modifiers, although it is actually couched in a different framework. The basic claim can be rendered as saying that both manner and agentive adverbs are of the same type, but apply to different predicates. The main justification that she gives for this is the existence of paraphrases for (27a) as in (28):

(28)   Louisa acted rudely to depart

This idea has very obvious shortcomings. First of all, the assumption of an abstract higher verb ACT in active sentences seems unfounded. The paraphrase relation offered by McConnell-Ginet does not carry over to simple sentences. *John departed* cannot be rephrased as *John acted to depart*. Another problem is that we don't know how the analysis would represent the difference between (29a) and (29b):

(29)   a.   Louisa acted rudely
         b.   Louisa rudely acted

In order to capture this contrast, we would have to resort to an explication of the meaning of the verb *act* as "ACT to act" — not a particularly attractive move. Moreover, in transposing this explanation into an event framework, the difference between verb modifiers and ACT-modifiers could only be secured by assuming that ACT and the main verb have different event arguments, or that the adverbs are somehow relativised to predicates (in a way that would maybe mimick McConnell-Ginet's adverb-as-argument approach).

In spite of the fatal disadvantages connected to ACT, McConnell-Ginet's proposal has two very interesting and welcome features that should not be overlooked. The most important point emerges from the paraphrase that is given by McConnell-Ginet: Without any doubt, the adverb *rudely* that appears in her paraphrase (28) is a manner adverb. This is an intriguing fact that does not seem to have been fully appreciated in the literature since then. It is in need of explanation why the meaning of an agentive adverb construction can be rendered fairly closely by a construction with the same adjective used as a manner adverb. This is not the only way to provide a paraphrase, of course: Another type that has been examined in the previous section involves *that*-clauses. As far as the makeup of paraphrases is accepted as an indicator of the semantic

type of the adverb construction, there would now seem to be a draw between a propositional and an event analysis.

The second benefit of McConnell-Ginet's proposal is that it does indeed provide a good treatment for passive-sensitivity. In passive sentences in which the adverb ascribes, for instance, "reluctance" to the subject, the passive auxiliary is a plausible candidate for McConnell-Ginet's element ACT. Wyner (1994, 1998) advocates an explanation for the variable orientation of "thematically dependent adverbs" that is very similar in structure. However, on his view, the auxiliary is not equal to "active be" but only conveys thematic role information, ascribing a proto-agentive feature to the theme argument that characterises it as a "volitional participant" (cf. Dowty's (1991) theory of proto-roles). Eckardt (1997) conjectures that "strong" passive auxiliaries of the kind that can effect a change of adverbial orientation — e.g. German *sich lassen* and the strong variant of English *be* — refer to a separate (sub-)event of "volitional consent". This idea seems to mirror McConnell-Ginet's proposal even more closely. However, as already pointed out, it is not applicable to active sentences.

b. Parts and Wholes: Lexical decomposition

Since there is no motivation for a verb ACT above VP in normal active sentences, the possibility might be considered that the lexical decomposition of the verb provides such an ACT-ive element. This has in fact explicitly been proposed by Vendler (1984) (who appears to be unaware of McConnell-Ginet's earlier proposal that is so closely related to his). Vendler reconstructs the distinction between agentive and manner modification in terms of modifiers that target the CAUSE part of a decomposition as opposed to those that target the BECOME part. This solution may appeal to some intuitions, but it does little more than just that. Ironically, Pustejovsky (1991) puts forward another intuitively plausible solution which assumes that the CAUSE part of the lexical decomposition serves as the slot for the **manner** variant, while agentive adverbs are predicated of the decomposed structure as a whole (this, in turn, is the type for adverbs of place and time in Parsons 1990, who does not discuss agentive adverbs in depth but favours the view that they target propositions or facts instead). Obviously, there is a great deal of confusion with regard to what a neo-Davidsonian predication like *rude(e)* can be taken to mean.

c. Wyner's (1994) Event Mereology

In his 1994 dissertation, Wyner provides what seems to be the most careful investigation into the semantic properties of agentive adverbs to date (again, I am rephrasing this in my own terminology — Wyner does not distinguish between the classes of agentive and evaluative adverbs). A crucial observation made by Wyner is that the presence of additional manner-like modifiers interferes with the assertion that is made by an agentive adverb. As already shown in chapter 1, neo-Davidsonian modifiers are not affected by the omission of concurrent event modifiers, a fact that gives rise to the typical entailment patterns:

(30)   John kissed her passionately on the lips
        John kissed her passionately

This, Wyner argues, does not hold for agentive adverbs:

(31)   Inappropriately, he kissed her on the lips
 =//   Inappropriately, he kissed her

Wyner's statement has to be qualified, though. The truth-conditions with agentive modifiers are affected only if another VP-modifier is omitted in a sentence with normal intonation. However, the entailment in (31) does go through if the PP *on the lips* is deaccentuated and the verb receives the main stress. This fact points to a focus-sensitivity of agentive adverbs. But let us first pursue Wyner's argumentation.

Wyner (1994) also draws attention to the fact that it is possible for agentive adverbs to express opposite evaluations with respect to the same individual event (the same reservations concerning focus have to be added as before). "John's kissing Mary on the lips, which happened on the porch" might evoke the following two statements, which are still about the same event in the world:

(32)   Appropriately, John kissed her on the porch
        Inappropriately, John kissed her on the lips

In sum, agentive adverbs seem to have scope, and they seem to speak about properties of the event in question. Wyner (1994) argues that they should not be analysed as intensional operators, though. For one thing, it has to be explained that all these adverbs are transparent, in the sense that the following entailment holds:

(33)   Adv VP   VP

      John stupidly left   John left   etc.

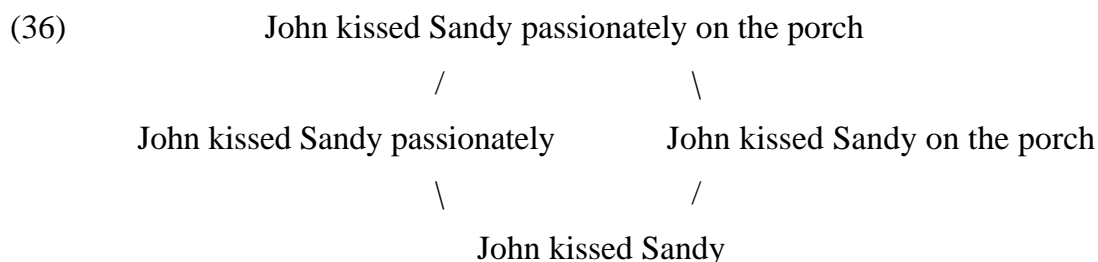Second, opacity effects do not arise:

(34)   a.   John unwisely shouted at Otto

      b.   Otto is the dean

      c.   John unwisely shouted at the dean

Given that Otto is the dean, there is no way to dispute the truth of (34a) while at the same time adhering to (34c).

In his analysis, Wyner (1994) proposes to represent events in a non-standard way, namely as a lattice made up of bits of information about the event. He characterises his proposal as assuming a "tight fit between events and the predicates that are true of them". Thus, whereas standard neo-Davidsonian theory would assume that the predicates *passionate kissing* and *kissing on the porch* can be true of the same individual event, Wyner instead proposes that these descriptions can be fulfilled only by two distinct individual events, call them e_1 and e_2. Crucially, an event of *passionately kissing on the porch* must comprise both e_1 and e_2, so what is required is an operation that integrates the single events into a whole. For this reason, events are assigned a lattice structure. The verbal predicate and the arguments associated with the verb are taken as the bottom element of the lattice. As an example, let $0 = kiss(John, Sandy)$, $1 = passionately$ and $2 = on the porch$. We then get the following simple lattice, with the top node inheriting information from all the lower nodes:

(35)   012
                   ╱   ╲
                01   02
                   ╲   ╱
                      0
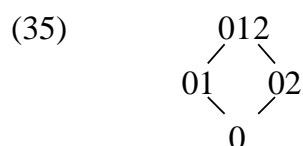
The ontology certainly raises questions. Since I will mainly be concerned with empirical shortcomings of this theory, I won't discuss the fundamental issue of what can and what cannot be called an event. The structure in (35) is similar to the classical diamond entailment pattern that holds for neo-Davidsonian modifiers. Nevertheless, (35) is indeed a mereology, which (36) isn't:

(36)   John kissed Sandy passionately on the porch
                                /   \
         John kissed Sandy passionately   John kissed Sandy on the porch
                                \   /
                              John kissed Sandy

Modifiers in Wyner's model can (or must) be predicated of individual events in the lattice. All manner and manner-like modifiers (together called "part adverbs" by Wyner) must be granted the defining property that they are also true for all higher events (i.e. nodes) of the lattice which inherit from them. Technically, then, part adverbs are ultrafilters of the lattice. Agentive adverbs, in contrast, are simply true of single event nodes only. The crucial difference between part adverbs and agentive adverbs is brought out if we consider the effect of adding more information about the whole complex event. The neo-Davidsonian conception of events is still present in that the event in this latter sense is what unites the decomposition into elements of a lattice — the event in this sense can be dubbed "E". We can give more or less information on E, i.e. we can specify smaller or larger regions of a possible event lattice. Let us now include more information by recognizing more events as parts of the actual E. We might do this by adding another modifier, say "3 = on the lips" to (35) (added elements are in boldface):

(37)   **0123**
                    / | \
         012   **013** **023**
              / ×   × |
         01   02   **03**
              \ | /
                   0
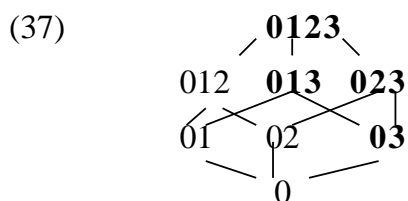
As can be seen, manner-type modifiers "spread" to the new parts of the lattice (i.e., they will automatically be true of certain events in the added region of the lattice, too). However, the "event adverb" (in Wyner's terminology, i.e. the agentive adverb in our terminology) was defined so as to be true only of the object 012, and this will remain unchanged in the larger lattice. This reflects the judgements: In the example below, we cannot regularly proceed from (38a) to (38c), even given that (38b) is true:

(38) a. Appropriately, John kissed her on the cheek

b. It also was a passionate kissing

c. Appropriately, John kissed her passionately on the cheek

The truth of the manner predication *passionately(e)* is not affected by adding *on the cheek(e)*. With the agentive adverb *appropriately*, however, we have to make the additional step to make sure that *passionately* does not interfere with *appropriately* in that situation if we want to make the claim in (38c) over and above (38a). The problem at least arises if *on the cheek* in (38c) cannot be excluded from the scope of the agentive adverb. To account for this, let us now look at the lexical entries and their types as given by Wyner. Manner adverbs take logical forms of the same kind as in the standard neo-Davidsonian theory, though they are rewritten here as functors:[40]

(39) **Part adverbs:**

$P \quad e_i [P(e_i) \& ADV(e_i)]$

This type of adverbial modification can be iterated. Concerning agentive modifiers, we have already seen that they do not share the "spreading" property of manner modifiers. To fix their reference, a relation "MIN" is introduced: MIN(e, P) states that the event e is the minimal event in the lattice that fulfils P. In other words, it excludes further potential modifiers, thus excluding the situation in (37) above. MIN also has to accompany existential closure in the sentence (since we have to exclude the possibility of additional "silent modifiers"). Since agentive adverbs include binding of the event variable, they map VP denotations to propositions:

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[40] Remember that, in spite of the similarity, they are evaluated from the background of a different notion of event.

(40) **Agentive adverbs:**

$\lambda P\ \lambda e_i\ [P(e_i)\ \&\ MIN\ (e_i,P)\ \&\ ADV(e_i)]$

It is now also clear that manner modifiers "feed" agentive ones, and that agentive adverbs preclude the addition of further manner modifiers. Agentive adverbs have to be added last. They predicate of an "event" in the same way as manner modifiers do, but require that the target of predication (minimally) fulfils the description P, P being the denotation of the VP that is the sister of the agentive adverb. Here is an example for how the composition proceeds whit both a manner and an agentive adverb in the same clause (cf. Wyner 1994: 54):

(41) Inappropriately, Kim kissed Sandy passionately

a. *Kim kiss Sandy*

$\|V\| = \lambda y\ \lambda x\ \lambda e_1\ [kissing(e_1)\ \&\ Agent(e_1)=x\ \&\ Theme(e_1)=y]$

$\|Kim\ kiss\ Sandy\|$

$= \|V\|\ (Sandy)\ (Kim)$
$= \lambda e_1\ [kissing(e_1)\ \&\ Agent(e_1)=Kim\ \&\ Theme(e_1)=Sandy]$

b. *Kim kiss Sandy passionately*

$\|passionately\| = \lambda P\ \lambda e_2\ [P(e_2)\ \&\ passionate(e_2)]$

$\|passionately\|\ (\|Kim\ kiss\ Sandy\|)$

$= \lambda e_2\ [[\lambda e_1\ [kissing(e_1)\ \&\ Agent(e_1)=Kim\ \&\ Theme(e_1)=Sandy](e_2)\ \&\ passionate(e_2)]$

$= \lambda e_2\ [[kissing(e_2)\ \&\ Agent(e_2)=Kim\ \&\ Theme(e_2)=Sandy]\ \&\ passionate(e_2)]$

c. *inappropriately, Kim kiss Sandy passionately*

$\|inappropriately\| = \lambda P\ \lambda e_3\ [P(e_3)\ \&\ MIN\ (e_3,P)\ \&\ inappropriate(e_3)]$

$\|inappropriately\|\ (Kim\ kiss\ Sandy\ passionately)$

$= \lambda e_3[[kissing(e_3)\ \&\ Agent(e_3)=Kim\ \&\ Theme(e_3)=Sandy\ \&\ passionate(e_3)]$
$\&\ MIN(e_3,\ \lambda e[kissing(e)\ \&\ Ag(e)=Kim\ \&\ Th(e)=Sandy\ \&\ passionate(e)])$
$\&\ inappropriate(e_3)]$

In step (41c), we arrive at a formula which says that the minimal event that fulfils P = *passionate kissing of Sandy by Kim* was inappropriate. This event is the top element of the lattice which represents the event described by the sentence. Inappropriateness does not (necessarily) hold for any of the subevents in isolation.

Having seen how the model works, we can now try to evaluate it. As already said at the outset, I will not address questions of ontology here. Furthermore, let us, for the moment, accept the position that an intensional treatment of agentive adverbs should be avoided since it would be undesirably weak (it would make a lot of predictions that would then have to be blocked by lexical stipulations, for instance the transparency of this type of modifier). The main point that is of interest here is to consider how the model brings out the difference between the two kinds of "event predicates", i.e., agentive adverbs and manner, or "part", adverbs.

The crucial device is the MIN relation. MIN appears in the rule of default existential quantification or, alternatively, in an agentive adverb, which then replaces default binding. Example (42a) below shows default binding of the e-argument in the presence of a manner adverb, (42b) shows binding and minimalisation by an agentive adverb:

(42)   a.   *Kim kissed Sandy inappropriately:*
   e [kiss(e) & Ag(e)=Kim & Th(e)=Sandy & inappropriate(e)
   & MIN(e,   e[kiss(e) & Ag(e)=Kim & Th(e)=Sandy & inappropriate(e)])]

   b.   *Inappropriately, Kim kissed Sandy:*
   e [kiss(e) & Ag(e)=Kim & Th(e)=Sandy & inappropriate(e)
   & MIN(e,   e[kiss(e) & Ag(e)=Kim & Th(e)=Sandy])]

The only difference that appears between the sentence with the agentive and the one with the manner adverb is that the agentive adverb is excluded from the property which MIN takes in its scope. In both (42a) and (42b), this property which MIN operates on corresponds to the top element of the event lattice. What underlies this difference is, then, the fact that agentive adverbs predicate of some element of the lattice without enlarging the lattice — in other words, while manner adverbs individuate "events" of their own ("events" taken in Wyner's sense, i.e. "event nodes"), agentive adverbs don't.

This difference is not handled by the MIN relation, it rather has to do with the way in which an adverb predicates of the event argument, i.e. with its lexical meaning. However, this is precisely the point that is not brought out by the formulas, hence the whole approach does not get to the core of the problem. Both types of modifiers are represented as having the same lexical form, and both involve neo-Davidsonian predication (or its closest equivalent in Wyner's model). However, we now see that there are implicit assumptions concerning differences in the specific way in which a predicate of events is related to its event. The notation in the neo-Davidsonian format does not do anything to clarify these differences.

This passing over the meaning of event predication seems to hide a serious shortcoming of the model, which, as far as I can see, cannot be repaired. It is true that, at first sight, assuming the same underlying lexical type P(e) in both uses might actually be considered a benefit since it would preserve lexical unity in this very regular alternation. However, we are lacking an explanation as to why only certain adverbs give rise to agentive variants. At least, something more would have to be said about the interplay of lexical meanings and agentive interpretations. But even if this were done, there are at least two observations which altogether discredit the assumption of a common neo-Davidsonian format for agentive and internal adverbs. As a first point, note that agentive and internal adverbs differ in cooccurrence restrictions:[41]

(43) a. ?? John accepted their demands stupidly
     b. John stupidly accepted their demands

(44) a. ? John pressed the button intelligently
     b. John intelligently pressed the button

(45) a. ?? John forgot the tickets absentmindedly
     b. John absentmindedly forgot the tickets

It is hard to see why these contrasts should exist if in both uses the adverbs make the very same assertion "stupid(e)", "intelligent(e)", or "absentmindedly(e)". Moreover, two adverbs with opposite meanings can be combined as agentive and manner modifiers without creating a contradiction:

(46)   Cleverly, he answered stupidly

This sentence is a perfect description for a situation in which someone does not want to betray his intelligence. On Wyner's account, however, both adverbs end up predicating of the same event (in any sense of "event"), and thus would seem to create a contradiction. To see this, consider the derivation of the interpretation of (46) (tense is omitted for simplicity):

(47)

a. $\|$stupidly$\|$ $(\|$ he answer$\|)$

$= \lambda P \lambda e_1[P(e_1) \ \& \ stupid(e_1)] \ (\lambda e[answer(e) \ \& \ Ag(e)=he])$

$= \lambda e_1[answer(e_1) \ \& \ Ag(e_1)=he \ \& \ stupid(e_1)]$

b. $\|$cleverly$\|$

$= \lambda P \lambda e_2 [P(e_2) \ \& \ MIN \ (e_2,P) \ \& \ clever(e_2)]$

c. $\|$cleverly$\|$ $(\|$he answer stupidly$\|)$

$= \lambda P \lambda e_2 [P(e_2) \ \& \ clever(e_2) \ \& \ MIN \ (e_2,P)]$
    $(\lambda e_1[answer(e_1) \ \& \ Ag(e_1)=he \ \& \ stupid(e_1)])$

$= \lambda e_2 \ [(\lambda e_1[answer(e_1) \ \& \ Ag(e_1)=he \ \& \ stupid(e_1)])(e_2) \ \& \ clever(e_2) \ \&$
    $MIN \ (e_2, \ \lambda e[answer(e) \ \& \ Ag(e)=he \ \& \ stupid(e)])]$

$= \lambda e_2 \ [answer(e_2) \ \& \ Ag(e_2)=he \ \& \ \textbf{stupid(e}_\textbf{2}\textbf{)} \ \& \ \textbf{clever(e}_\textbf{2}\textbf{)} \ \& \ MIN \ (e_2,$
    $\lambda e[answer(e) \ \& \ Ag(e)=he \ \& \ stupid(e)]) \ ]$

The agentive adverb *cleverly* is distinct from part adverbs like *stupidly* in that it is only true of the top element of the lattice, but the point is that the top element also inherits the information from every part modifier. Therefore, a contradiction is inevitable, contrary to the intuitions on the meaning of sentence (46).

This points to the conclusion that even this fairly sophisticated version of an event-based framework does not succeed in analysing agentive adverbs as predicates of events. While the notion of event has been changed, the notion of event predication has not. I do think that what lies at the heart of Wyner's (1994) proposal can be expressed

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[41] Remember that the a.-examples are to be read with a neutral sentence accent on the adverb, since comma intonation would

informally as a guiding idea for future investigation: Agentive adverbs are felt to speak about the event, but in contrast to manner adverbs they are not restrictive, they do not change the event description. However, the neo-Davidsonian notation alone is not able to encode this difference.

e. Conclusions on Treatments of Agentive Adverbs as Predicates of Events

To start with a positive result, the preceding discussion has brought to light a recurring intuition in the literature to the effect that agentive adverbs should be associated with "an event as a whole" and manner adverbs with an event in terms of its substructure. This is probably a useful intuition. Precisely how it should be brought to bear on the analysis, however, is far from clear. On the whole, event-based analyses have relied completely on the intuition that the event predication will somehow be felt to be meaningful in the desired way; however, they have not had very much to offer in the way of a clarification of such intuitions. In this connection, it should also be noted that the works reviewed so far have remained silent about the precise delineation of the class of adverbs for which the account is supposed to hold. In section 4.2.3, it was pointed out that the same kind of ("factive") paraphrases can be given for both agentive and evaluative adverbs. Thus, there is no strong connection between the agent orientation and the semantic type (namely factive predication) of an adverb, and this finding is quite detrimental to McConnell-Ginet's account. On Wyner's (1994) analysis, we are led to asking whether events can be "lucky" or "unfortunate" over and above being "appropriate" and the like: How far can event predication be extended?

In addition, McConnell-Ginet's account is certainly highly problematic because of the status of ACT (even more so if it has to be reconstructed in event semantic terms). Wyner's (1994) model, in spite of its new ontological distinction between events in a narrow sense and events as a lattice, eventually seems to fall victim to a conception of predication over events that is still too much based on ill-understood intuitions. It fares no better than McConnell-Ginet's or any of the other proposals with respect to the central task of bringing out the distinction between the manner reading and the agentive reading.

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enable an external reading.

Finally, it is important to note that a common feature of most proposals in the literature is that the manner use is assumed to be the simpler or even the underlying variant. So, in some cases the manner reading is regarded as the basic variant and the agentive use is explained by adding complications on top of it (cf. Wyner 1994; the same goes for the proposal in Higginbotham 1989 not discussed here), or in other cases it is assumed that there is only one single variant that has more or less the same logical type as the manner adverb, but is thought to apply to some larger portion of, or a "higher" element in, an event structure (besides McConnell-Ginet this is also true of Vendler 1984, Pustejovsky 1991).

This perspective may have to do with the fact that the compositional semantics of manner adverbs is so much simpler, since they are written as predicates of events and interpreted via intersection. However, the neo-Davidsonian notation cannot be used to encode any lexical semantic connections between the variants. I claim that in order to arrive at a proper understanding of the functioning of the adverbs in question, it is necessary to get rid of the preconception that the manner variant is the basic one. Even if it is compositionally simple, manner modification will be found to hide an amount of internal complexity in terms of lexical meaning. This can be shown on the basis of a detailed analysis of the lexical meaning of the agentive variant, which will have to be developed first.

4.3.2. Alternatives to an Event-based Analysis

a. Between Events and Propositions

As a kind of link between event-based approaches and approaches that take the "factive" status of agentive adverbs into account, I would like to comment on work done by Wyner (1997) and Ernst (1998). Let me begin with Ernst (1998). This paper presents ideas whose aims converge quite strongly with those I that I am pursuing here. Ernst (1998) is a rare case of a paper that explicitly sets itself the goal of providing an explanation for the systematic alternation between agentive and manner readings of certain adverbs. Viewed in outline, it also belongs to the family of event-based analyses of agentive adverbs, for Ernst proposes that both variants are event predicates, differing only in that they take different comparison classes. The manner variant is said to take as

its comparison class a set of events of the same type, the agentive variant a set of different events. Let me briefly show the representation that Ernst (1998) proposes as a unitary lexical entry for both agentive and manner uses:

(48)   Rudely, she left.

　　e [**leave**(e) & Agent(e, she) &

　　e':[e' = [**leave**(e) & Agent(e, she)]] &[42] RUDE (she, e', ¶e''¶)]

(49)   She left rudely.

　　e [**leave**(e) & Agent(e, she) &

　　e':[e' = [**leave**(e) & Agent(e, she)]] &[43] RUDE (she, e', ¶e'': **leave**(e'') & Agent(e'', she)'¶)],

On Ernst's analysis, the two uses are distinguished only by the different fillers for the slot in "¶...¶", which marks comparison classes (the notation is adapted from Higginbotham 1989). Apart from the comparison class, the adverb is a two-place predicate, taking an individual and an e-variable. So I construe the intended meaning of the resulting lexical entry *rude (x, e, ¶C¶)* as something like "e is (judged) rude of x as compared to C" (although this is not equivalent to any of the various paraphrases Ernst 1998 actually offers[44]).

For (48), the agentive reading, e'' is to be determined contextually, while for the manner reading in (49) the comparison class consists of events of the same sort as described by the verb. The representation suffers from a few imprecisions; one that seems to be deliberate and in fact points in an interesting direction concerns the use of the event variables. The first occurrence, *e* in (48) and (49), is the normal Davidsonian event argument. However, *e'* in the following conjunct is equated with a proposition, and the same obviously holds for *e''* in (49).

So, on closer inspection, what Ernst aims for cannot really be regarded to be an event-based analysis. The point is that Ernst tries to reach a unified treatment by blurring the distinction between events and propositions; however this seems to be wrong for more than one reason. First, the semantic distinction between events and propositional entities, though not undisputed in the past, has proved to be clear-cut and

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[42] I have interpolated this "&" which is missing in Ernst's formula.

[43] dtto.

[44] Page 7 of the manuscript says: "Agent is judged rude on the basis of Event", and later: "Rude(Agt,e) = the degree of rudeness one would normally attribute to the Agent on the basis of x is higher than the norm for rudeness for events." These paraphrases do not match with the 3-place predicate given in the formula which I cite above.

simply too important (cf. e.g. Zucchi's 1993 comprehensive discussion of this matter). Second, the difference between manner and agentive interpretations can actually not be reduced completely to comparison classes. I now want to elaborate on these two claims, for the discussion of these points foreshadows the fundamental points of the analysis that I am going to develop in later sections.

I endorse the view that making comparisons plays a central role for the semantics of agentive adverbs and for distinguishing them from the manner reading. Still, it does not seem to be the case that what is at stake are comparison classes as they are known from the semantics of gradable adjectives. While *rudeness, stupidness,* etc can indeed come in different degrees, this by itself is a relatively minor issue and we would not say that literally every action comes with a certain "rudeness value", which, in the case of the socially acceptable actions, just happens to be below some threshold. The point is rather that agentive adjectives and adverbs have the curious property that they require us to determine what somebody's rudeness consists of. And to determine this, we have to consider the alternative actions that could have been taken. What comes in at this point are not comparison classes but alternatives in the sense of focus semantics. Note that agentive and evaluative adverbs are indeed focus-sensitive, a point that was already briefly touched at the beginning of section 4.3.1.c. Consider again the sentence (50) taken from Wyner (1994), and let us try the two different assignments of focus in (50a) and (50b):

(50)   Inappropriately, John kissed her on the lips
     a.   Inappropriately, John kissed her on the $[lips]_F$
     b.   Inappropriately, John $[kissed]_F$ her on the lips

The point is that in (50a), the inappropriateness of John's behaviour need not lie with the kissing as such, whereas in (50b) exactly this is asserted. The focus alternatives for (50a) are various other ways of kissing, such as kissing the hand, kissing on the cheek, kissing on the forehead, and so on. If we follow Ernst's account of the agentive/manner distinction, incidentally, it becomes very difficult to distinguish (50a) from a manner reading: It is evaluated with respect to other implementations of the same general event type that consists in "John's kissing her". However, the difference between agentive and manner adverbs is not as gradual and blurred as we would have to assume if the commonalities or differences between the sets of comparison were the only thing that

distinguishes between the two types of adverbs. The difference between the two adverbial variants is actually quite sharp. For instance, manner adverbs are not focus-sensitive at all; they do not take scope over an event description in the way agentive adverbs do. Moreover, according to Ernst's proposal, predicative uses of these adjectives should be ambiguous because comparison classes could be chosen freely from the context in such cases. This is not the case. Note in particular that the addition of an *of*-PP removes all potential ambiguities: With this PP, a manner interpretation of the adjective is impossible:

(51)   That was stupid of him

Given what we have found, there is now also a problem with representing the manner adverb in terms of predication of a propositional entity. Consider again (49) above, repeated here for convenience:

[49]   She left rudely

   e [**leave**(e) & Agent(e, she) &   e':[e' = [**leave**(e) & Agent(e, she)]] & RUDE (she, e', ¶e'': **leave**(e'') & Agent(e'', she)'¶)],

It is certainly not correct to describe the compositional semantics of manner modifiers in terms of propositions, or to predicate manner and agentive variants of entities of the same sort, as Ernst (1998) does. As will be seen later, however, I share the view that the semantics of manner in some sense evokes alternatives which have to receive a propositional description. The point is that this must be a matter of the lexical semantics, it does not have its place in the logical form of the sentence.

So in sum, very much the same that has been said about the event-based analyses in the previous subsection can also be said about Ernst's (1998) proposal: It contains some useful semantic intuitions that will eventually have to be accounted for, but the analysis as it stands is insufficient — in particular, with regard to the use that is made of the e-variable. In the logical forms that Ernst proposes, e would rather have to be taken as a propositional entity. The way in which e' is used in (49) (cf. above) is actually reminding of a later proposal of Wyner's (1997). Revising his 1994 theory (and expanding on a footnote in Parsons 1990), Wyner (1997) suggests that the adverbs in

question predicate of **facts.**[45] Here is a simplified version of how example (40) would be rewritten à la Wyner (1997). He introduces a new sort of variable for facts:

(51)   Rudely, she left

   e   f ([f = leave(e) & Ag(e, she)] & rude(f)]

It has already been pointed out in section 4.2. that agentive and evaluative adjectives imply the truth of their clausal argument and in this sense they can be said to be "factive". The question is, of course, what kind of entity f might be and how it is related to events; in other words, we have to ask what the interpretation of the equation sign is. We already know a little about the properties that f should possess: In section 4.3.1.c above, arguments have been given that agentive adverbs do not create intensional contexts (cf. examples 33 and 34). However, such considerations do not contribute very much to the issue of why facts should be considered to be independent entities or, more fundamentally, why it should be inevitable to introduce them. Moreover, the introduction of facts per se does not yet shed any light on the way in which the lexical meanings of agentive adverbs (or adjectives) crucially depend on reference to facts, instead of reference to events.

b. The Adjective + Gerund Construction

The need for a special type of propositional entity in the analysis of agentive adverbs can be demonstrated from a very characteristic property that shows up in their adjectival paraphrases. Besides *that*-clauses, the sentential argument that accompanies the adjectives can also be a transitive gerund:

(52)   Telling lies was stupid of John
      Interrupting him was rude of John

The existence of this paraphrase is interesting because it has been established in the literature on nominalisation that transitive gerunds have very special properties. On the

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[45] Wyner (1997) presents a number of tests to examine this factive behaviour and compare it to classical factive verbs such as *regret* and propositional operators such as *allegedly*. However, it seems to me that some of his results are inconclusive for

one hand, it has been shown that they do not denote events. On the other, they do not denote "normal" propositions either. I briefly list some points from the summary in Zucchi (1993). First, classic observations going back to Vendler (1967) show that transitive gerunds have different properties than nominalisations with *of*. The former do not go with predicates of events like *slow* and in this respect pattern with *that*-clauses:

(53) a.   John's performing of the song was slow / was sudden / took a minute

b.   ?? John's performing the song was slow / was sudden / took a minute

c.   ?? that John performed the song was slow / was sudden / took a minute

Therefore, *of-* gerunds can denote events, but transitive gerunds must rather denote a propositional entity. Furthermore, an *of-* nominalisation can evoke a manner-related interpretation in (54a):

(54) a.   Mary's performing of the song surprised us

b.   Mary's performing the song surprised us

This sentence can mean that we were surprised not so much by the fact that Mary performed the song but by the manner in which she did. In contrast, the transitive gerund only allows the fact-interpretation, not the manner-interpretation. This is again consistent with the idea that (54a) can denote events, but (54b) can only denote some propositional entity.

Frome these observations, we can derive an additional, though indirect, argument against treatments of agentive adverbs as predicates of events. But now note that the paraphrase with transitive gerunds, which provided the evidence for this point, does not appear with typical predicates of propositions either (Zucchi 1993, ch.6):

(55) ?? John knows / believes the soprano's performing the song

?? The soprano's performing the song is true / false

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lack of a closer understanding of the semantic factors that the meaning of agentive adverbs depends on. Therefore I don't review this work (i.e., handout) in depth.

In view of this, Zucchi (1993) proposes that transitive gerunds denote neither events nor propositions but a third kind of entity. This proposal is in line with the logic of using selection by different predicates as a diagnostic to distinguish events and propositional entities, as done above. There is again a group of predicates that specifically select this third type of entities and therefore go with transitive gerunds:

(56) a. The police are informed of John's having left the city
b. John is aware of the soprano's performing the song
c. We prevented his succumbing to the temptation by hiding all the cookies from him

Zucchi argues, however, that the denotation of gerunds should not be called "facts". Example (56c) speaks about something that did not happen in the real world. If the gerund denoted a fact, (56c) should be contradictory in the same way as sentence (57), but they clearly differ in status:

(57) ?? We prevented the fact that John succumbed to the temptation

Hence, Zucchi (1993) introduces a new sort of entity, which he calls "State of Affairs" (SOA).[46] However, we could still speak of facts in examples like (56c) if we admit that facts can be situated in possible worlds instead of the real world. This would probably capture the meaning of (56c). So in the following, I will sometimes use the term "fact" in this loose sense which includes "possibility".

The way Zucchi (1993) approaches SOAs consists in a procedure that maps propositions onto individuals. Zucchi (1993, p.213) proposes an operator i that is added in the interpretation of gerundive nominals, with the interpretation as in (58c) (V being the interpretation function and S the set of possible situations, which take the place of events in Zucchi's ontology):

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[46] Simple (i.e. Vendler's "perfect") nominalisations also can receive a SOA-reading besides the event-denoting reading, but I omit this complication here.

(58)   a.   the soprano's performing the song

       b. i (the soprano' (perform the song'))

       c.   V(i) is the function $D_{<1,0>}$[47]

            such that   a D_0,   (a) = f(a), if a   (S), otherwise   (a) =a

However, we do not get very many explanations as to what kind of entity it is that these propositions are mapped onto. This makes it hardly possible to employ the proposal to resolve questions of lexical semantics. For instance: Why should agentive adverbs select for precisely this kind of complement instead of one that denotes events or normal propositions? As I will show later, an explanation for this behaviour can indeed be found.

A more perspicuous treatment of facts and similar abstract objects seems to be provided by Asher (1993). On the basis of similar criteria as those used above, Asher arrives at even finer distinctions among abstract objects that populate a spectrum between event and proposition. He argues that, among others, we should admit for "facts", "possibilities", and "event types" as abstract objects, which can be distinguished by the different predicates that specifically select for them and by different ways in which they enter into anaphoric processes. Let me introduce Asher's proposal by developping a sample analysis for the sentence:

(59)   John informed Sue of Mary's departure

The verb *inform* selects a "fact" as its second object, and the nominal *Mary's departure* can be assigned a factive reading — although it can also serve as an event-denoting nominal (I have so far passed over the factive-eventive ambiguity with nominals of the type (54a); only transitive gerunds are unambiguous). In the factive reading, the nominal has an abstract object as its referential argument. To derive this, a rule of "abstract object transform" is applied to an event description. Let me sketch this briefly.

Asher's (1993) analysis is couched in Discourse Representation Theory (cf. Kamp & Reyle 1993). In Asher's treatment, abstract objects arise from pairing a whole part of discourse (a Discourse Representation Structure, DRS) with an abstract object referent. So the crucial point is the existence of a "characterization relation", written as ≈. It

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[47] In the notation employed by Zucchi (1993) (going back to M. Cresswell), this is to be read as a function from propositions (0) into individuals (1).

serves to characterise an abstract object k (in this case, a fact) in terms of an event description in a DRS. The whole operation creates a new DRS that embeds the old one with the event description. The construction process is shown in (60). For typographical convenience, I shall rewrite the box notation of DRT into a linear notation, i.e. as ordered pairs. So, in a structure <R,C>, R is the set of individuals that are declared as the discourse referents and C is the set of constraints on them:

(60) a. DRS specifying an e-predicate:[48]   e x <ø, {departure(e)(x)}>

      b. "Abstract Object Transform":

$$\lambda\mathbf{k} \quad e \quad x \quad \mathbf{<ø, \{[k\approx <ø, depart(e)(x)>]\}>}$$

The Abstract Object Transform serves to embed the nominal in a fact-characterising DRS (new material in boldface). With this result, we can go on to complete the representation of the fact-denoting nominal:

      c. Applying a silent determiner to the nominal:

$$e \quad x \quad \lambda\mathbf{Q} \ <\{\mathbf{k}\}, \{[k \quad <ø, depart(e)(x)>]; \mathbf{Q(k)}\}>$$

      d. Adding the genitive argument:

$$e \quad Q <\{\mathbf{u,} \ k\}, \{\mathbf{Mary(u)}; [k \quad <ø, depart(e)(u)>]; Q(k)\}>$$

      e. "Default binding"[49] of e:

$$Q <\{u, k\}, \{Mary(u); [k \quad <\mathbf{e}, depart(e)(u)>]; Q(k)\}>$$

Finally, this is combined with the verb *inform.* The verb introduces a requirement that the abstract object k must be typed as a fact. This eventually yields:

(60) f. <{v,w,u,e',k},

    {John(v); Sue(w); inform(e')(v,w,k); Mary(u); [k <**e**, depart(e)(u)>];

      fact(k)}>

Viewing this derivation as a whole, the role of events for the constitution of facts becomes an important topic. Facts can be built up from event descriptions. The result of

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[48] Note that we start out with what Asher calls a "predicative" DRS, i.e. a lambda abstract which does not have a specified discourse referent. A discourse referent is introduced only by conversion or by default binding (see below).
[49] Not Asher's term. See below for discussion of this step.

step (60e) was the introduction of an event as a discourse referent in a sub-DRS. Note that the event discourse referent can only be introduced in the minimal DRS that contains the event description, not in the matrix DRS (Asher has a general locality principle that takes care of the introduction of discouse referents, see Asher 1993, p. 144). The reason for this is that a fact could also be constituted by a negated event description. As Asher remarks in a later chapter on anaphora, fact anaphor and event anaphor look similar, but negative facts are a case where the event is unavailable for anaphora, so in such circumstances it is unambiguously fact anaphora. The following example is taken from Asher (1993, p.245):

(61)   John did not hit Bill, and Bill did not hit John. Those are the facts.

One would wish to see a general account of the visibility of an event, though. Where there is no negation, the very notion of fact would probably require that e is present as a presupposition. All these matters are, for the time being, hidden in notations like "fact(k)". To mention a second point that is in need of clarification, note that the creation of a fact is done not only prior to default binding of e (which must happen "deep inside" by virtue of Asher's locality principle) — it is also done before adding the individual argument to the event expression that characterises the fact. Proper names like *Mary* do not present any problems because they are externally anchored anyway; however, if we had an indefinite NP, we would see that it has to be specified in the embedded DRS. Consider:

(62)   a.   the possibility of the arrival of a Mafia boss from Sicily
This corresponds to:[50]
        b.   k   <{x, e}, {M-boss(x); arrive(e)(x)}> & possibility(k)

Here, it is clear that the individual argument has to be bound internally to the sub-DRS. So it seems we cannot as a rule introduce discourse referents for descriptions that characterise abstract objects outside their sub-DRS. Maybe clauses that characterise facts have to have all their arguments bound. It seems that this is prevented for theory-internal reasons in Asher's model, because he assumes a silent determiner that is lower in the structure than the genitive NP, the determiner already has to target the referential

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[50] I suggest that "of" in the use in (a.) can be translated as the characterisation relation.

argument of the NP, i.e. the fact. This point about the introduction of discourse referents with fact-characterising expressions will reappear in the next section where the meaning of agentive adjectives is analysed in detail, for it concerns the interplay with the sentential argument of agentive adjectives and the *of-* PP.

In closing, let me briefly summarise the properties facts have in relation to events and intensional propositions. Facts differ from events in that they depend on a description, i.e. they are still like propositions in this respect. Furthermore, the different sets of predicates applicable to events and facts show that facts do not have many of the event-related features like "manner" and spatio-temporal location. On the other hand, facts and similar abstract objects differ from (intensional) propositions in that they cannot be said to be true or false. Another interesting difference that Asher (1993) adduces concerns the causal efficacy of facts: Example (63a) below contains two direct assertions of facts having causal effects. In example (63b), which contains a proposition, it is only the fact of John's believing the proposition that can be used as an antecedent for the demonstrative *that,* so it is clear that propositions cannot be said to have causal effects; only facts can.

(63)   a.   The fact that John had a headache made him crabby. John's crabbiness resulted in the fact that everyone avoided him.

       b.   John believed that Mary was going out with another boy. That made him morose and prone to sulking

To sum up this section, we have seen that transitive gerunds have a denotation that represents a third type of entity besides events and intensional propositions. Constructions with a transitive gerund as the subject of an agentive adjective provide close paraphrases for constructions with agentive adverbs. So, taken together, the evidence militates in favour of the proposal advanced by Wyner (1997) on the basis of a different sort of evidence, namely that agentive adverbs predicate of this third sort of entity, called "facts" by Wyner (1997).[51] The problem we are left with is to answer the question as to how this special property of agentive adjectives is connected with their lexical meaning, and in which ways it bears on the lexical alternations exhibited by these

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[51] Incidentally, Asher (1993) does not explicitly mention this class of adjectives in his discussion of predicates that select fact-like objects. Instead, in his chapter six, the adjective *foolish* is treated as a predicate of yet another sort of abstract entitiy, "event types". It seems to be an agentive adjective, though.

adjectives. To this end, we have to examine in some more detail what the lexical properties of agentive adjectives are.

4.4. The Lexical Analysis of Agentive Adjectives

If "facts" constitute a distinct kind of entity, which we know very little about besides the very fact that they are different from events and propositions, this presents us with a lexical problem, for under these circumstances we are lacking an idea of the ways in which the lexical semantics makes reference to these entities. This is clearer for events and propositions. In this section, I try to show that the meaning of agentive adjectives and adverbs can to a large extent be traced back to reference to an event. The point is that agentive adjectives and adverbs make reference to an event in an indirect fashion, and "facts" are crucially needed as pointers to a specific event in the context. This is, in outline, the view that is to be developed in the course of this section. It can be derived from a close analysis of the lexical content of the agentive adjective construction.

Since it has been argued in chapter 2 that adverb formation does not entail the creation of an independent lexical item, there is indeed no need to restrict the investigation exclusively to adverbial forms. The paraphrase relation between agentive adverbs and adjectival constructions is close enough so as to warrant the assumption that they are lexically identical. And, as has already been remarked, copula constructions with agentive adjectives provide more opportunities to test for the various lexical properties. So, for the time being, I shall take data from adjectival and adverbial constructions together to illustrate the main lexical points, actually placing emphasis on the adjective data. The ways in which adjectival and adverbial variants do differ will be addressed in a later section (4.5.). Assessing the commonalities and differences between adjectival and adverbial uses of the same predicate will ultimately allow us to tease apart semantic properties of agentive adverbs that are due to word meaning from those that are due to the adverbial construction. As a side issue, the analysis of the copula constructions will help to clarify the distinction between agentive and evaluative adjectives that has been mentioned at the beginning, and it can then be determined to which extent they belong to the same semantic class.

4.4.1. Properties of the Clausal Argument of Agentive and Evaluative Adjectives

In this section, I shall go on to an examination of the restrictions that agentive adjectives impose on the contents of their subject clauses. One important restriction that we have already seen consists in the requirement that the clausal argument must describe an agentive event, an action. In the following, more restrictions of a related kind will be brought to light, which cluster together to yield a clear distinction between the classes of agentive and evaluative adjectives.

a. Embedding of Modal Statements or Negation

Since it has been shown that only agentive event descriptions are possible in the argument clause of an agentive adjective, it may not come as a surprise that a number of modal constructions are excluded if the modal component is not something that is under the control of an agent:

(64) a. ? It is stupid of John that he must not leave

  b. ? It is stupid of John that he might give up

  c. ? It is stupid (of him) that he seems to have left

For evaluative adjectives, the effect does not obtain:

(65) a. It is unfortunate that John must leave.

  b. ? It is unfortunate for us that John seems to have left

If the exclusion of modal statements is explained by the agentivity requirement, it is somewhat unexpected, however, that negation is possible in the argument clause. Moreover, agentive and evaluative adjectives behave alike in this respect:

(66) a. It was stupid of John that he didn't apply for that job

  b. It was stupid / unfortunate that John didn't put out his cigarette.

I assume that the reason why negation can be embedded is different for agentive and evaluative adjectives. Evaluative adjectives can be assumed to be fairly unselective anyway; this is the general picture that is emerging from all the tests discussed here. However, it seems that there is a way how negation can also positively fulfil the agentivity requirement imposed by agentive adjectives, namely by a process of reinterpretation that is not required in the case of evaluative adjectives. We must reckon with the possibility that negation can describe agentive events, namely if we invoke the notion of an **omission** as a type of agentive event. It is only required that the omission is deliberate and willful (this interpretation does not seem to be required for negation that occurs under an evaluative adjective). I should like to point out in this connection that I am not invoking a dubious notion of "negative event", for we actually have to distinguish between "negative event" and a negative description of an event. While the former is dubious, the latter is less problematic. Note that in some particular cases, positive and negative descriptions can obviously be used to evoke the same situation:

(67)   For more than a minute, he didn't speak

                        …   / he remained silent

(68)   The policeman saw John not stop at the red traffic light

         …   / saw John pass the red traffic light

Note also that the claim that we have to make with regard to agentive adjectives is indeed weaker than the positing of negative events would be: In terms of semantic composition the adjective selects fact-like entities anyway. So obviously, agentive adjectives just require that these facts are of a special kind, and features of events are used to characterise this particular kind of facts. In other words, the lexical requirement brought along by agentive adjectives is that they must be combined with fact-like entities which can be mapped onto an agentive event in the world (or, in Asher's (1993) terms, facts which are "characterised" by some such event). This claim is weaker than saying that the negative expression itself must have the semantic type of a predicate of events.It leads to the view that agentive adjectives make covert reference to event.

b. Embedding of Complex Clauses: Conjunction, Disjunction, and Conditionals

Facts and related abstract objects can be characterised by expressions of various sorts, and besides negation we also find facts constituted by a conjunction, a disjunction or a conditional (examples are taken from Asher 1993, pp. 55-57):

(69)   a.   the fact that Mary came home late and that John didn't come at all.

          b.   The fact that the children were either asleep **or** playing quietly in their room allowed Mary to get some work done.

          c.   The fact that **if** Mary came home late, John would be in a bad mood forced her to leave work earlier than the others.

With respect to such constructions, evaluative and agentive adjectives present an interesting pattern of data. First, conjunctive facts are generally allowed in combination with agentive and evaluative adjectives alike. Incidentally, the adverbial uses present the same picture, too:

(70)   a.   It was stupid / unfortunate that he lit a cigarette **and** started filling the tank.

          b.   Stupidly / Unfortunately, he lit a cigarette **and** started filling the tank.

Example (70b) has to be understood in a way that it is only the combination of the two actions that is to be blamed. Now let us turn to the somewhat tricky case of disjunctive and conditional facts. Examples can be constructed in which they appear embedded under evaluative adjectives:

(71)   a.   What is unfortunate is that if I move the bishop, he will take it with his king.

          b.   [If they simply ignore the ultimatum, we will find ourselves forced to act.]$_i$ This$_i$ is actually very unfortunate.

Incidentally, the same holds for the adverbial variant; it also gives rise to some very clear examples involving disjunctive facts:

(72)   Unfortunately, his brother either got fired or quit his job.

The point is now that, in distinction to this, agentive adjectives exclude conditional and disjunctive facts:

(73)   a.   ? It is stupid of the allies to attack if the ultimatum is ignored.

       b.   ? It is stupid of John that he either got fired or quit his job.

Admittedly, the examples are difficult to judge because we invariably try to repair these sentences. It is tempting to construe (73a) as saying *If they ignored the ultimatum, it would be stupid to attack,* i.e. with *stupid* predicating of the nucleus of the modal statement only. This is not intended, for the copula is in the indicative form. So the point is that example (73a) is impossible in the reading that stupidness is ascribed to the condition that those events are connected, i.e. the same connection that is evaluated as unfortunate in (71b) above. Similarly, *stupid* in (73b) is not to be construed with respect to every single part of the disjunction. In sum, then, the contrast between (71) and (73) again shows that agentive adjectives allow only a more narrow set of contents in the *that*-clause as compared with evaluative adjectives.

So the result is that agentive adjectives can be combined with clauses containing conjunction but not with disjunctions or conditionals. What separates these two groups is again the possibility to map such descriptions onto events. Events can be summed up to yield larger events, and in one of its uses conjunction encodes such a summation process. This point is argued for by Eckardt (1998), who represents event summation using an operator   (if directly applied to events) or, equivalently, using an operator *, which is applied to two event types, call them P and Q:

(74)   a. $[e_1. P(e_1)] * [e_2. Q(e_2)]$

       b. $e* [e_1 (P(e_1) \& e_2 (Q(e_2) \& e* = e_1   e_2]$

This operation of creating sum events is used by Eckardt, among other things, to account for adverbials that have scope over a conjunction. These can now be interpreted as applying to the sum event e^* (Eckardt 1998, p.113, notation slightly adapted):

(75) a. From 2^{00} to 4^{00}, Bertha watered the tulips and had a nap

  b. e [from-2^{00}-to-4^{00} (e) & e_1 [watering(e_1)(Bertha, the tulips)]

   & e_2 [nap(e_2)(Bertha)] & e=e_1 e_2]

If the entity that is the result of such a summation process is again an event, we can ask whether it is specified with respect to the agentivity feature. From Eckardt's discussion, it seems that this is not necessarily so, since, in principle, her mechanism allows for any two events to be conjoined and summed up. However, an important restriction falls out from the construction with agentive adjectives: The identity of the agents is required throughout (as already mentioned in section 4.2.3.):

(76) a. From three to five, Tom washed the dishes and Frieda swept the kitchen

  b. ?? It was stupid (of Tom) that he washed the dishes **and** Frieda swept the kitchen.[52]

  c. ok It was stupid (of Tom) that he washed the dishes **and** swept the kitchen

We can make the following natural assumptions concerning agentivity with respect to event sums: It may be the case that an agent role is not generally defined for such sum events, since they may contain a heterogeneous collection of single events, and the whole entity is a very abstract object that is not on a par with lexicalised event descriptions ("sum" is a weaker notion than "complex event"[53]). But in special cases we may assume that the sum event can inherit the applicability of the agent relation from its constitutive parts, namely if all parts of the sum event have the same agent:

(77) Agent(e*,x) is defined for sum events e* iff x: [e: e $\sqsubseteq$ e* Agent(e,x)]

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[52] This sentence becomes acceptable if "and" is replaced by "while", and this may trigger the repair strategy to interpret it in this sense (i.e. with the second conjunct as strongly topical). But note that the intendend meaning is that of an evaluation of a combination of two coinciding actions, not an evaluation of John's action in the context of an action of Frieda's.
[53] As pointed out to me by C.Piñón (p.c.); this view seems not to be shared by Eckardt (1998), though.

In this way, the applicability of agentive adjectives to conjunctions can be reconciled with the view that they make covert reference to events, and in particular to agentive ones. Disjunctions and conditionals, however, can only be built from propositions. They cannot be interpreted as operations on events, and in line with this, agentive adjectives cannot embed them. (In contrast, it is the typical feature of evaluative adjectives that they are not so selective).

c. Focus Effects

As has already been observed, agentive and evaluative adjectives are focus-sensitive.[54] Thus, the (a) and (b) variants of the following sentences describe different mistakes:

(78) a. It was stupid that John used the [benzine]$_F$ to remove the stain.

  b. It was stupid that John used the benzine [to remove the stain]$_F$.

The events described by (78a-b) are the same regardless of focus assignment, so these observations support the view that agentive adjectives apply to an entity that is more abstract than an event. In this connection, note also the interesting interaction between *stupid* and *only* in (79).[55] Agentive adjectives and adverbs take scope over *only* (evaluative adjectives again behave in the same way), with the result that (79a) and (79b) describe different mistakes:

(79) a. Stupidly, John only talked to Jones.

  b. =// Stupidly, John talked to Jones.

While the sentence *John only talked to Jones* implies that *John talked to Jones,* there is no parallel entailment relation between (79a) and (79b). In comparison, the focus-sensitive particle *even* does not interact with the adverb in the same way:

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[54] For the special case of evaluative adverbs, this focus-sensitivity has been pointed out by Geilfuß (1995). See also Eckardt (1998) for the role of focus with "factive" adverbs in general (Eckardt does not distinguish between evaluative and agentive adverbs, she uses the term "evaluative" to cover both).

[55] The existence of such examples was pointed out to me by Graham Katz (p.c.).

(80)   a.   Stupidly, John even talked to Jones.

         b.   Stupidly, John talked to Jones.

The two variants in (80) are not truth-conditionally different. The effect of *even* in (80) is only very slight: An implication of an additional evaluation is added, say, that John's blunder is even more surprising, or worse, than other conceivable actions (that already might have deserved the epithet *stupid).* The difference has to do with the fact that *only* introduces an additional assertion (namely that none of the alternatives is also instantiated) while *even* only reflects a presupposition (namely that there is an ordering of the alternatives in terms of an element of surprise). It is the particular assertion of *only* that *stupid* takes scope over and, in essence, this effect can be reduced to the fact that agentive adjectives take scope over conjunction and negation. So we may say that *stupid* can have scope over *only* for the same reason that sentence (81) is possible, which is roughly equivalent to (80a):

(81)   Stupidly, [John talked to Jones and didn't talk to anybody else]

The failure of the entailments in (79) can then be reduced to the fact that a complex sentence like (81) describes a different state of affairs than the assertion of its first part would yield, and the agentive adjective is sensitive to this difference. (Compare the related findings of Wyner 1994 reported at the beginning of 4.3.1.c.).

d. Sequence of Tense Effects

The next point concerns a phenomenon that is observable only with agentive adjectives, not with the adverbial construction. With an agentive adjective in a copula construction, the tense of the copula assimilates to the time at which the action occurs. Evaluative adjectives, on the other hand, can convey a present-time evaluation of past actions.

(82)   a.   It **is** unfortunate that he **left** so early

         b.   It **was** stupid of John that he **left** so early

         c.   ? It **is** stupid of John that he **left** so early

The same effect can be observed with gerunds that contain a relative tense as marked by the auxiliary *have* (non-finite *have* does not denote a present perfect but rather simple anteriority):

(83) a.   John's **having** left the town **is** unfortunate

b.   ? John's **having** left the town **is** clever

c.   ? It **is** stupid of John to **have** left the town

The contrast is especially strong if agentive adjectives are compared to factive verbs which take *that-* clauses:

(84) a.   I still regret that I did this

b.   ?? It is still stupid of me that I did this

From this we can see that *stupid* is tied more closely to the event that is described, rather than to the proposition that provides the description. In a certain sense, it is true that agentive adjectives, too, convey an evaluation (of an action). However, if predicates like *regret* and *regrettable* are put into the past tense, the construction locates the **act of evaluation** in the past; when the agentive reading of *stupid* is anchored to a past tense, this rather means that the **object of evaluation** is in the past. In a way, then, the tense of the copula construction shows a kind of agreement with the embedded tense: It adapts to the time in which the thing is situated that it speaks about.[56]

These observations point to the same conclusion that we have already reached on other grounds. If the temporal anchoring of an agentive adjective is tied to the tense of its sentential argument, this entails a covert reference to events. It is only events, but not facts, that are located in space and time. Remember the data in section 4.3.2. which showed the impossibility to apply predicates like *take a minute* etc to gerunds. In (53), repeated below, we saw a clear distinction between event-denoting nominals and transitive gerunds:

[53] a.   John's performing of the song was sudden / took a minute

b.   ?? John's performing the song was sudden / took a minute

c.   ?? that John performed the song was sudden / took a minute

Similarly, it is impossible to say that a fact has "occurred", as pointed out by Asher (1993):

(85)   # the fact that Mary fell down occurred (/ obtained) in the park at noon

In the constitution of facts, events play a role, but the fact is distinct from the event. To put it in Vendler's (1967) words: "Facts are not in the world, they are about the world". This is basically what justifies the introduction of the new abstract entity (e.g. in the style of Asher's characterisation relation).

Note that the difference between agentive and evaluative adjectives resides in their lexical meanings: Both take complements of the same type, but it is a lexical property of agentive adjectives that, for example, the "stupidness" of an action cannot be located differently from the action itself, while an evaluation of an action as, say, "regrettable", is temporally independent of the action.

e. Conclusion

Agentive (and evaluative) adjectives do not enter semantic composition as predicates of events; this is clear from the fact that they combine with *that*-clauses and transitive gerunds, and also from their focus sensitivity. However, the differences between agentive and evaluative adjectives with respect to the possible contents of the clauses they combine with leads us to concluding that agentive adjectives do make covert reference to an event. This is a feature of their lexical meaning, which constitutes the lexical-semantic difference to the class of evaluative adjectives. Since both classes combine with the same kind of clausal argument, it follows that agentive adjectives somehow, by their lexical meaning, extract event reference from the factive subject clause, while evaluative adjectives don't. This observation paves the way for an analysis that abandons facts as entities "by themselves" and reduces them to other, better known entities.

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[56] This can be seen as analogous to the "lifetime" effect observed with individual-level predicates. Here, it is the "lifetime" of

4.4.2. Properties of the *of-* PP

We have already seen that the class of agentive adjectives is clearly demarcated by the selection of an *of*-PP along with an agentive event description. Before getting to an analysis of the meaning of agentive adjectives, it will be useful to inspect the pecularities in the behaviour of the *of*-PP in some more detail, for the lexical analysis must then be able to explain these observations.

One very intriguing property that can be observed with agentive adjectives is the fact that they cannot introduce a discourse referent in the PP:

(86)   a.   ? It was stupid of a defender to pass the ball back

       b.   ? It was stupid of a linguist to withdraw his article

A probably related phenomenon is the fact that quantified NPs are also infelicitous in this position:

(87)   ? It was stupid of everybody not to apply for more money.

One may suspect that the special status of the clausal argument, viz. its "factivity", extends to a familiarity condition on the arguments and hence to the PP argument in the matrix, too.

A second observation is that agentive adjectives allow generic and episodic uses. However, in the generic interpretation, the PP must be omitted; as soon as an *of*-PP is added, the generic use is blocked. This effect can be seen in (88b):

(88)   a.   It is (always) stupid to pass the ball back to the goalkeeper

       b.   It is (??always) stupid of John to pass back to the goalkeeper

The generic sentence (88a) says that, on all occasions (in a football match), any player that passes the ball back to his goalkeeper does something stupid. The fact that the agent is interpreted as arbitrary invites the conclusion that it is covered via unselective binding by a generic quantifier. However, since in (88a) quantification can take scope over *stupid* it is puzzling to see that the same is blocked by the presence of the NP *John*

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the event that dictates the tense that appears with the adjective.

in (88b). Since it is a proper name, which does not usually interact with quantifiers, it is nearly the only possibility that the thematic role of this PP contains semantic features of a kind that interfere with the expression of a regularity by the generic quantifier.

So both of the observations we have just made seem to converge on a similar point: The PP with agentive adjectives is not comparable to a normal argument position of an event-denoting predicate, so we can at least say that it does not encode a normal agent role. So, agentive adjectives do not themselves have the status of agentive predicates comparable to agentive verbs — which is of course to be expected since adjective meanings in general lack the dynamic quality of agentive verbs.[57] They can only be called agentive because of the selection restrictions they impose on their subject clause, not in the sense of being agentive predicates themselves. Therefore, we see that agentive adjectives implicitly speak about agentive events in a way that does not make them "predicates of events" in any standard sense.

4.4.3. The Lexical Content of the Agentive Adjective *Stupid*

In this section, I try to describe the core features of the lexical meanings of agentive adjectives in an informal way. The best way to elucidate their meanings is by comparing positive with negated uses (so we now consider negation of the adjective itself, not negation in its embedded clause). Let us first consider the paradigm example *stupid:*

(89) a. It was stupid of the defender that he passed back to the goalkeeper

b. It wasn't stupid of the defender that he passed back to the goalkeeper

(90) a. It was stupid of Otto that he kissed his wife in the street

b. It wassn't stupid of Otto that he kissed his wife in the street

When can we claim that something was stupid, and when would this be denied? It turns out that we can answer this question only if we take into account a large amount of contextual knowledge. Example (89a) could be continued by saying: "It was stupid because then the forward of the opposing team stepped into this pass and scored a goal". This shows that an action is stupid in virtue of the causal consequences it can have.

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[57] In this, the agentive copula construction *John is being stupid* is a very different case.

Obviously, what makes an action stupid is the fact that these consequences can be negative, so here we have an evaluative component. It is worth noting, however, that this evaluation is not dependent on the speaker's preferences and values. If I happen to know absolutely nothing about football, I cannot tell whether passing back is a stupid thing to do or not; when I am told: "But so the opponents got a chance to shoot, and they scored." - I ask: "And is this good or bad?" - "Come on, that's bad. That's how they lost the match." - "Ah, so that was stupid of him." What this shows is that the consequences of the action are evaluated solely with regard to the aims of the agent, and the person who utters a judgement like (89a) must be able to infer somehow what these aims are. Passing back was stupid of that player, in that, ultimately, it was bad **for him** (i.e. for his team). In this use, the adjective *stupid* asserts that some action is "a mistake".

However, this description still falls short of the word meaning: *stupid* does not just convey a negative evaluation, since there is still a considerable meaning difference between *bad* or *being a mistake* on the one hand, and being *stupid,* on the other. The difference to the former purely evaluative predicates is that *stupid* says something about how such a mistake could ever happen. It connects it to a mental condition of the agent. More precisely, it evokes the idea of either a principal lack in mental capacity, or a temporary failure to use it.

This becomes especially clear when we compare it to a number of related words, like *careless* or *reckless.* Broadly speaking, all of these adjectives characterise actions as "mistakes", but they differ in the agent-internal conditions that serve to explain them. With *stupid* as well as with these other adjectives, we can systematically distinguish between meaning features that pertain to the causal efficacy of an action, and features that connect this to a mental condition of the agent. I provisionally use the labels "causal" and "mental" for this in the following:

(91) *stupid*

      CAUSAL = causal effects of the action do not conform to the (possibly long-term) goals of the agent

      MENTAL = lack of intellectual capability to see this

(92) *careless*

  CAUSAL= effects of the action do not fully match the intended effects of the action or create unwelcome side effects

  MENTAL = lack of attention to (the outcomes of) the action

(93) *reckless*

  CAUSAL= effects of the action are potentially damaging or dangerous

  MENTAL = unwillingness to pay attention to this, unrestrainedness

Agentive adjectives always speak about actions that result from a choice taken by the agent. This is a deeper reason for calling them "agentive". This element of choice is pervasive in this whole lexical class. Consider the following examples. You may say:

  (94) It is stupid to give all one's money to a stranger

But you would not stick to this judgement when you learn that somebody did so because he was threatened with a gun. Likewise, when you have to pay somebody a fixed sum, you are never "generous", no matter what the amount is, and when you are forced to do something dangerous, this can never be called "reckless", etc. The point is, if the course of events in question resulted from some external force, this would not allow to connect the behaviour to internal dispositions of the agent. Therefore, a presupposition comes in with agentive adjectives saying that the action in question is the result from the agent's choosing between alternatives. This is the deeper reason for why agentive adjectives show association with focus. To see this in more detail, let us go back to our initial examples and add a focus feature:

  (95) a. It was stupid of the defender that he passed back to [the goalkeeper]$_F$

     b. It was stupid of Otto that he kissed his wife [in the street]$_F$

As we said, the context must involve a situation of choice between alternatives. The focus in the sentences (95a) and (95b) reacts to this presupposition. We can consider the choice between passing back to the goalkeeper or to another defender, then we get the focus assignment as in (95a); we can consider the alternatives of a return pass or a clearance, then the whole *that*-clause would be in the focus, etc. For example (95b), a

possible context would be, for instance, a country where it is against the law to kiss in public. If you do it, you must pay a fine. In such a context, we might say that it is stupid to risk this undesirable outcome if the kiss could easily postponed till some safer occasion. This is to say, a kiss in the street is characterised as stupid, precisely because one could have refrained from it in this particular situational context.

So far, we have detected the following components that play a role in determining the truth conditions:

(96) *stupid*
- Presupposed background (the concrete contents of 2)-4) must be inferred):
  1) an action by the agent
  2) the set of choices for the agent
  3) the effects that are to be expected for the action
  4) their value from the background of the goals of the agent
- Word meaning:
  1) negative evaluation of the action (from the relation between expected causal effects of the action and the goals of the agent)
  2) the choice of action is indicative of a mental condition ("stupidness")

Agentive adjectives provide an explanation for the occurrence of events of a particular kind on the basis of the agent's internal properties. Hence, "stupidness" embodies a theory to explain patterns in the behaviour of people (their making mistakes) as resulting from some abstract disposition internal to them (a lack of intellectual capability). The difficult point is that the notion of "mistake" is so heavily context-dependent, hence the patterning in the behaviour is not very obvious if we look at it in objective terms.

As shown in (96), the word meaning contains two components: a "causal" and a "mental" one. The causal part makes a statement about an event or fact, the mental part about an individual. This fits in with the fact that agentive adjectives take two arguments. In particular, we can now see what the semantic role of the *of*-PP might be. It is not to mark an agent role — rather, this PP introduces the individual whose behaviour is characterised by a mental condition. As such, this argument is necessarily coreferent with the agent of the event, but it plays a different role. It is a truly stative relation of characterisation. Comparable cases seem to be:

(97)   This is characteristic **for John**
       This is typical **of John**

So the existence of two meaning features in the agentive adjective seems to be mirrored by the existence of two arguments. To see this double nature of the word meaning more clearly, let us now focus on the interpretation that arises under negation, e.g. (89b), repeated here:

[89b] It wasn't stupid of the defender that he passed back to the goalkeeper

The action is still presupposed to take place; likewise the connection between a particular kind of behaviour and a mental state is not denied. Sentence (89b) first and foremost claims that what the agent did was actually not a mistake. In concrete terms, this can mean a variety of things: Usually the effect will be to deny the existence of undesired outcomes for the case at hand. The utterance of (89b) might be justified, for example, by pointing out that none of the opponents was near enough to catch the ball. The interpretation of a negated agentive adjective can also consist in a revision of our conception as to what the goals of the agent really are. As an example, consider the situation in (98a) (described in Goscinny & Uderzo 1965), and, from this background the statement in (98b):

(98)   a. [Asterix, while alone, was caught by surprise by the Romans. After having found out what had happened, Obelix was looking for an opportunity to get caught by the Romans, too, in order to get inside the prison and free Asterix]
       b.   So, it wasn't stupid of Obelix to get caught by the Romans.

The point of the statement in (98b) is that, due to this very particular context, it is known that a positive effect will ultimately result from getting caught, which is then more relevant for the evaluation of the situation than the stereotypical assumption according to which being in prison is an unpleasant state one wants to avoid. So while certain undesired outcomes of the situation may persist, the preferences of the agent are such that they do not count for the evaluation. This underlines the context-sensitivity of

agentive adverbs, and it also underlines the fact that the evaluation is made entirely on behalf of the agent, so to speak. The speaker and the speaker's values and preferences are not the source of the evaluation.

The consideration of agentive adjectives under negation also makes it definitively clear that the assertion made by the agentive adjective does not consist in the ascription of a mental state to an individual, because under negation it is always the negative evaluation of the action that is cancelled. To be sure, *stupid* does not just describe the property of events of yielding undesired outcomes, for we have already seen that this would be too weak to distinguish the meaning of *stupid* from other related adjectives such as *reckless, careless,* etc., which all imply that an action has potential undesired outcomes. The difference lies in different mental conditions of the agent, even if these are not the target of predication. In a nutshell, we can say that the meaning of agentive adjectives embodies theories that serve to explain traits in the behaviour of people. The word meaning describes a connection between a particular way of deciding on an action and an internal disposition, thereby explaining this pattern of behaviour.

The concept that agentive adjectives provide is the description and evaluation of the way in which an action bears on a particular situational context, and in this way, their meaning becomes highly context-dependent. They could still be expected to state properties of events, but the class of events that they refer to cannot be described independently of the context. For one thing, the adjectives need to single out one specific action in a specific larger setting (in fact, they presuppose the action). For another thing, in characterising actions that result from decisions, the interpretation of these adjectives must take into account a class of (focus-) alternatives, too, because the alternatives entered into the decision process. Hence, a propositional description is needed, which locates the event with respect to world and time, and generates alternative descriptions.

4.4.4. Towards a Formal Representation

a. The Role of Alternatives

To rephrase the informal results of the preceding section, we can say that the concept that underlies the meaning of *stupid* is a characteristic function over a set of alternative actions. Imagine a large situation (i.e., the context) made up of a sequence of events. We consider the branching of the agent's options at a particular point, call it b*:

(99)   <Figure: branching continuations>
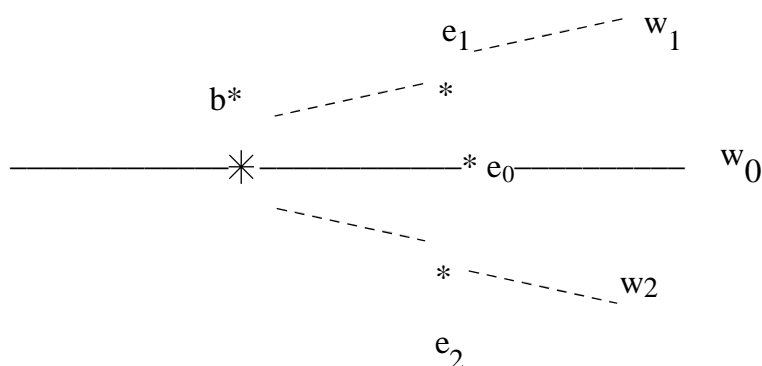
In the real world, after b* the action e_0 has occurred — this is the event described by the clausal subject of *stupid.* The alternatives are worlds in which other possible events e_n have happened (which are incompatible with the presence of e_0 in that world) — these are the events described by the set of focus alternatives of the same clause. What the adjective now says is that the occurrence of e_0 is characteristic for a world in which the agent has the mental property *stupidness* (a disposition). All alternative continuations w_n, in which the agent does not have this disposition, can be discriminated by the presence of some alternative event e_n instead of e_0. So, the dispositions of the agent can be read off from his actions. This can be formulated as (100) (let $W = \{w_0; w_1; ... w_n\}$):

(100)   w   W: e P(e)(w)   D(x)(w),

with "D" as the *stupid-* disposition of x, and P the corresponding event description in the sentential subject of the adjective.

This is not yet the word meaning of the adjective; rather, it is the correlation between e and D which underlies its application. We have to simply posit that people have the ability to recognise this connection — it is a consequence of the very ability to form a concept as complex as "D".

In short, since the adjective characterises the way in which people make decisions, its meaning depends on alternatives (because these are part of the decision situation). The semantic reflex of this is the association with focus that is found with these adjectives.

b. The World Parameter

It has been pointed out a number of times in the preceding discussion that agentive adjectives are not combined with an intensional proposition. That is, a logical form of the type as in (101b) is **not** what we want for the analysis of the example (101a):

(101) a.   Passing back to the goalkeeper was stupid of the defender

b.   stupid(x) [w P(e)(w)]

The main reasons to reject the intensional analysis were the absence of any opacity effects (as pointed out by Wyner 1994),[58] and also the obvious difference between propositions and the denotations of transitive gerunds pointed out by Zucchi (1993) (see section 4.3.2. above). It is to be noted that both Zucchi's (1993) and Asher's (1993) approaches do not use the apparatus of possible-world semantics to describe facts / states of affairs and the meaning of gerunds. Both Zucchi and Asher give an intransparent account of states of affairs by introducing new individuals which represent them. A number of observations can be made, however, that show that the world parameter cannot be completely ignored for the sentential complement. These observations revolve

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[58] In Wyner (1997), he actually changed his opinion and claimed that agentive adverbs were indeed intransparent. His example is the following:

(i)   Wisely, Mary wore her favourite dress to the party
(ii)   Mary's favourite dress is the same dress that the Queen wore.
(iii)   # Wisely, Mary wore the same dress that the Queen wore.

It is true that (iii) does not go through, but I deny that this is an effect of intensional opacity. In the light of the preceding discussion of the lexical meaning, it can be seen that the point is rather that the adverb *wisely* is heavily context-sensitive, and that (i) and (iii) create different contexts which suggest different evaluations. In (i), the hearer infers that wearing one's favourite dress is consonant with the purpose of enjoying oneself; however in the scenario suggested by (iii), one infers that wearing this particular dress will spoil the party. If we apply the background knowledge that has been inferred for (iii) to (i) as well, *wisely* could no longer be claimed to be true either. (So, Wyner's judgement is partly an artifact of the order in which he presented his sentences).

around issues of factivity, negation, and quantification, and ultimately lead to the necessity of deconstructing the seemingly monolithic notion of facts (something we were independently led to by the finding that there is covert event reference in these constructions).

The negation test shows that *stupid* presupposes that the action in the *that*-clause has taken place. This is the normal sense in which the clause is said to be "factive". A different picture appears as soon as we combine *stupid* with an infinitive — a construction not considered so far:

(102) It is stupid to give up in such a situation

Interestingly, (102) is intuitively not very different from the meaning of (103a). Only with the past tense copula the factive entailment arises again (103b):

(103) a.　　It would be stupid to give up in such a situation

　　　 b.　　It was stupid to give up in such a situation

So the "factive" meaning varies along with the tense and mood of the copula. The explanation for the similarity of (102) and (103a) seems to be that both are statements with a quantification over worlds: (102) is generic, (103a) is modal. I assume that (102) has a meaning along the following lines:

(104) GEN (w,x) ["such a situation"   w];[stupid(of x)(w) to give up]

If *stupid* is evaluated for the real world, it entails that the event at issue also has happened in the real world (this is in line with the data on sequence of tenses discussed above in 4.4.2.d.). So an option would be to consider the complement of agentive adjectives as a sentence with a world parameter that is not (yet) bound.[59] In this way, we would not have an intensional proposition but one that is fixed to one particular world. We have to see whether this might be a way of breaking down the notion of state of affairs. In a first step, we would get something of the following type:

(105) stupid(x) [P(e)(w)]

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[59] As proposed to me by Arnim v. Stechow (p.c.)

More precisely, the world variable could be bound along with the matrix clause:

(106)   w [stupid$_W$ (x) [P(e)(w)]]

This representation would entail that both the adjective and the embedded event are localised in the same world, a condition that would be reminiscent of the restriction on sequence of tense that we have encountered in section 4.4.2.d.   However, the world parameter behaves different from the time parameter in this respect. Consider:

(107) [Maybe nobody will ever read what I am writing here:]
           Under such circumstances, it would be stupid that I am doing this.

This example shows that we can construct cases of a hypothetical evaluation which contain the assumption that the situational context has properties different from the ones that it currently appears to have, i.e. an evaluation under the assumption that the causal consequences of my action are different from the ones that I first assumed to hold. As (107) shows, this is compatible with the evaluated action ocurring in the real world; therefore (106) does not deliver the correct result as it stands.

To further clarify this matter, let us compare the behaviour of different types of arguments with a copula construction in the conjunctive mood:

(108) a.   It would be stupid that I am doing this.
         b.   It would be stupid what I am doing here.
         c.   Doing this would be stupid.
         d.   It would be stupid to do this.
         e.   It would be stupid if I did this

Versions (108a) and (108b) entail the actual occurrence of the evaluated action. Example (108c) allows us to treat the action either as a matter of fact or as hypothetical, while (108d) seems at least to have a tendency to treat the action as hypothetical. The interpretation of (108e) is clearly only hypothetical (a parallel distribution of interpretations would also be observed if we inserted the adjective *good* instead of *stupid,* by the way). The obvious difference between the cases (108a-b) and those in

(108c-d) is the presence of a finite verb in the embedding (case (108e) is different because there is the overt marker *if).* So, while (105) would be correct for some uses of the non-finite cases, we also need a modification of the representation in (105), namely one that includes the possibility that the world parameter is fixed to the real world in this sentence:

(109)   w [stupid$_w$ (x) [P(e)(w$_0$)]]

This fixing of the world parameter is obviously an effect of the finiteness of the argument clause; the same fixing operation can optionally take place in non-finite clauses. In this way, the patterning of interpretations can be explained. It means that we need a separate world parameter in the sentential argument of *stupid,* and in this it again resembles a proposition. The second point that should be noted is the special role of the world parameter for the meaning of the adjective: If we put the adjective in a conjunctive mood, as in (107), it is the evaluation that is hypothetically asserted; however, the preferences of the agent, which form part of the base of the evaluation, are not shifted. The sentence *...then it would be stupid that I am doing this* evaluates my current action according to my current preferences, only under the hypothetical assumption of different outcomes. Thus the knowledge about preferences is truly contextual, it only seems to be the course of events in the situational context at hand that has to do with the modal shift.

So far I have shown that there is some prospect for a reconstruction of the notion of fact in terms of a proposition that is not intensional. Furthermore, the fact that the world parameter of the sentential argument can be fixed independently of the one in the matrix shows that it is inevitable to take this approach.

c. A Lexical Entry for Agentive Adjectives

Given the elucidations of the lexical meaning in section 4.4.3., we are led to a lexical entry with three components: The expected causal consequences of the action described by the sentential argument, the negative evaluation with respect to the goals of the agent, and the connection to the dispositional component in the agent. When describing this lexical content, it was entirely sufficient to talk about events, propositions, and

individuals. No reference was made to a special third type of entity besides events and propositions, and given the abstract and elusive character which facts had as individuals, it is not even visible how one could make them bear on the elucidation of the lexical meaning. I therefore propose that the basic function of the "fact" that an agentive adjective is combined with is to make an event accessible that is known from the context. This means that there is a certain mismatch between the type of the complement and what the lexical-conceptual meaning is about, since the lexical-conceptual meaning is indeed about an event. But this mismatch is motivated by the need to identify a single particular event, an event that is situated in the particular causal chain provided by the context. I propose that the mismatch is resolved in the lexical meaning of agentive adjectives like *stupid,* where the "fact" that we have identified is unpacked, as it were, in order to access the event that is characterised by it.

I shall introduce the analysis using the by now familiar example of a return pass by a football player. Let us omit, for simplicity, all issues of tense and concentrate on the type of the sentential argument of *stupid.* We know it has to be a propositional entity that makes an event available. More specifically, it is already presupposed that the event occurs, while the lexical meaning of the adjective only evaluates it on the basis of its effects for the agent. Remember (from section 4.3.2.b.) that Asher (1993) described facts as abstract entities that stand in the characterisation relation to a piece of discourse (a DRS). Indeed, establishing the event as a prior discourse referent seems to be the right way of accounting for both the factivity and the phenomenon of the accessibility of the event inside a "proposition". Hence, I shall adopt Asher's mechanism of "abstract object transform" as an intermediary step in building up the semantic representation. Since Asher's treatment uses Discourse Representation Theory, which does not explicitly incorporate possible worlds, I have to resort to a mixed representation, which is clearly provisional. In my representation, the introduction of the abstract object looks as if Quantifier Raising had applied to the sentential argument (cf. 110c below), for the characterising clause does not have the right type to occupy the argument position.

(110) a.   It was stupid of the defender that he passed back to the goalkeeper

To analyse this sentence, let us first adopt the following abridged representation for the sentential argument, which then undergoes the abstract argument transformation. Note

that the world parameter is already fixed to the real world, due to the finiteness of the sentence:

(110) b.   (i)   [returnpass-to-goalie$_{w0}$ (e)(x)]

            (ii)   k $<$ {e,x}, {returnpass-to-goalie$_{w0}$ (e)(x) & defender(x)}$>$

In (110b-ii) I adopt the technique of declaring discourse referents instead of introducing existential binding. This is a mere shorthand that could be spelled out either as full DRS's or in standard logical forms by using existential quantifiers that can be reopened. Note that I assume that the agent of the event has also become a known discourse referent at this point. Given all this, we can now apply the agentive adjective:

(110) c.   **$<${k},{k** $<${e,x}, {returnpass-to-goalie$_{w0}$ (e)(x) & defender(x)}$>$

             & stupid$_{C, w??}$ (x)(k) }

The adjective updates the discourse with an evaluative statement (this part is printed in boldface); so accordingly, the only new discourse referent is the abstract object k, which is the target of this predication. There is in fact another, previous step of discourse contained in this representation, namely the assertion that the event "returnpass" has happened; however, this is not part of the current update, it is rather a presupposition, i.e. an earlier discourse step from which discourse referents e and x (the agent) are inherited. It is of great importance to see that the agentive adjective construction does not introduce the event into the discourse, for this will turn out to be the crucial difference to the adverbial construction. We have already seen that the agentive adjective construction is not able to introduce a new discourse referent for the agent in the position of the *of*-PP either. This supports the view that we have to embed a previous piece of discourse in the construction, which then introduces the e and x variables.

      Finally, we need the lexical meaning proper (C is to represent the knowledge about the context in which the action is embedded):

(110) d. $\text{stupid}_{C,\,w^*}(x)(k) = 1$ iff $k\ <\{e,x,...\},\{P_{w0}(e,\,x...)\}>$ and:

    (i) $C \models\ e^*$: e CAUSE e*, &

    (ii)   x does not intend to bring about e*, the occurrence of e* is incompatible with the preferences of x in w_0,   &

    (iii)   w' W: e $[P_{w'}(e)(x)]$ $D_{w'}(x)$,

In part (iii), W is the set of possible continuations of the world that would have been the alternatives to adding the action at issue, as depicted in figure (99). D is the disposition of the agent typical of *stupidness;* roughly: the intellectual inability to notice relevant factors for the agent's decisions, which results in the failure to avoid the undesired course of events. Part (110d-i) states that the action that is described has particular consequences,[60] which are negatively evaluated in part (ii). It can be seen that the lexical meaning only needs events and individuals, and propositions that provide the alternatives which underlie (iii). In (i), causation is taken as a relation between events; the event that enters into the first slot of CAUSE has to be the action described previously in the piece of discourse characterising k. Hence, the adjective imposes conditions on the structuring of the discourse it appears in. The abstract object k plays a role for the anchoring of the adjective in a suitable discourse, but not for the conceptual content of the adjective. In a way, the fact individual is "unpacked" in the lexical meaning in order to access the event whose occurrence characterised the fact.

d. Conclusions

In this way, some of the effects listed in earlier sections are accommodated by the approach. Among the most intriguing properties of agentive adjectives were the effects of "covert event reference" and the role of the *of* -PP. Both find an explanation in terms of the specific kind of statement that agentive adjectives make about events — they do not provide event concepts or introduce events into the discourse in the same sense as verbs do, they merely add an evaluation to a discourse that already contains an event

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[60] It seems to me that the semantics of *stupid* requires that these consequences "really" occur in the context at issue (which might be a modalised context). If there were no bad consequences, then how could one argue that something was a mistake? Furthermore, this assumption would give us a handle on the awkward status of agentive adjectives with a future tense:
    (i) ? It will be stupid of John that he will leave the town

(possibly via accomodation of this presupposition), and since the event is presupposed, the agent is already fixed, too.

I should also like to point out that agentive adverbs, even though they speak about events, function in a way that is very different from verbs because the event cannot be understood as a referential argument of the adjective. The event at issue is recovered from the description in the subject position of the adjective, and it is clear that referential arguments cannot be projected in the position of the grammatical subject, for the predicate itself is the syntactic exponent of the referential argument. Syntactically, referential arguments must always be implicit. This is again in line with the fact that the individual argument of agentive adjectives, though referring to an agent, does not itself have an agent role — so the adjective is not a predicate **of** agentive events, it is a predicate **about** agentive events. Although a number of topics connected to agentive adjectives (e.g. focus) have not been addressed in detail, I hope to have explained the mixed impression that they gave with respect to their reference to events.

e. Appendix on Negation

The covert event reference by agentive adjectives emerged, among other considerations, from the finding that they can embed negation and conjunction, but not disjunction or conditionals. While section 4.4.1.b already gave an outline of how the embedding of conjunctions fits in with event reference, an account for negation is lacking so far. The problem of negative events is clearly a far-reaching question that deserves a detailed investigation, and I can offer only some preliminary considerations on this topic here.

We can distinguish two possible approaches to negated event descriptions in the present context. The first one can be called the brute force method: We might assume that negation in this cases is indeed a property of events that creates an "omission" from the property of events it combines with, for example:

(111) P e NEG(e) (P) = 1

   iff e conists in the (deliberate) failure to perform an action of type P (P
   being the property of events denoted by the VP)

Under this assumption, negation would be ambiguous between two quite different lexical entries — not a very attractive solution. In the case at hand, another solution is available, which proceeds in a more indirect way. Note that with negated sentences, there is no previously established discourse referent of the type that is required in (110). Given the architecture of the whole approach presented above, the accomodation of a suitable discourse referent, i.e., inferring the existence of an omission, would be the most natural solution. Therefore, I want to propose for this purpose (112) below as a variant of (110d). The abstract entity k that the adjective predicates of continues to be the same, but in the lexical interpretation we infer the existence of a negative event, an omission, from our contextual knowledge and the contents of the prior discourse. In part (i), that is, I use a "negative" event property OMISSION of exactly the kind as given above in (111) — the difference is only that it is not claimed that this event property is the lexical meaning of the negation.

(112) $\text{stupid}_{C,\,w*}(x)(k) = 1$

with $k \;\; < \{x,...\}, \{\neg\, P_{w0}(e, x...)\}>$ and:

(i) $C \models\;\; e^*, f\!: f \text{ CAUSE } e^*$, with f such that:
$\text{OMISSION}(f)(x, P_{w0}(e, x...)),\;\; \&$

(ii) x does not intend to bring about e^*, the occurrence of e^* is incompatible with the preferences of x in w_0, $\;\;\&$

(iii) $w'\;\; W\!:\; f\,[\text{OMISSION}_{w'}(f)(x, P_{w0}(e, x...))]\;\;\; D_{w'}(x),$

Parts (ii) and (iii) are as in (110), with the adjustments that become necessary by the changes in (i). Note that I am assuming that omissions can have causal effects in the same way as positive actions. Since omissions describe deliberate decisions, this should be acceptable: The course of events clearly depended on the behaviour of the agent. The difference to the first variant is only that (112) employs the omission as an event property that is not lexicalised by any of the constituent parts of the adjective's sentential argument.

4.5. The Agentive Adverb Construction

After this examination of the agentive adjective construction, the discussion of the agentive adverb construction can be kept fairly brief as far as lexical matters are concerned. My claim is that the lexical meaning is exactly the same, and that the semantic differences between the adverbial construction and its adjectival paraphrase can be derived from properties of the different constructions.

The implicit parameters that we have discovered in the word meaning of the adjective construction are also present with the adverb. The sentence *John stupidly passed back to the goalkeeper* evaluates John's action of passing back by comparing its causal implications to the agent's inferred aims, and explains this course of events by connecting it to a disposition in the agent. Likewise, agentive adverbs can combine with conjunction and negation in a way that is completely parallel to the data on possible embeddings in the adjectival construction:

(113) a.   John stupidly didn't stop at the red traffic light

       b.   John stupidly filled the tank **and** lit a cigarette

After all, the two constructions are really paraphrases of each other. However, they do not show exactly the same behaviour in all respects, and, specifically, the agentive adverb construction obeys to some characteristic restrictions.

For one thing, the adverb does not allow an *of*-phrase. At present, I have no answer for why this is so. The main question is whether this has to do with the category adverb as such or with adverbial morphology, or whether it has a semantic reason. While I know of no explanation for the lack of *of*-PPs with adverbs, it should be noted that evaluative adverbs can appear with a PP (as pointed out by Déchaine 1993, in a different terminology). This is true at least when they occur in the left periphery or in parenthetical intonation:

(114)   Unfortunately for Ray, this sentence is grammatical.

From this, we can conclude that adverbs per se do not block the addition of complements that are selected by the underlying adjective (counter to Jackendoff 1977). Since *of*-PPs can never appear with agentive adverbs in constructions analoguous to

(114) above, there must be a semantic reason which blocks them, and which specifically concerns the semantics of the *of*-PP. So it is at least clear that no argument for the lexical independence of agentive adverbs can be construed from the lack of *of*-PPs.

Another difference that will turn out to be very important for the analysis of agentive adverbs is that they behave in a completely different way if they occur under the scope of negation. While examples with a negated adjective were easy to construct, it is nearly impossible to negate an agentive adverb (disregarding lexical means like the prefix *un-,* or other affixes, e.g. as in *unwise, impolite, careless).* The point is, if a sentence with an agentive adverb is negated, as in (115b), it cannot have the same interpretation as the negated adjectival construction (115a):

(115) a.   It was not stupid of John to return
      b.   # John didn't stupidly return

In the same way, the adverb itself cannot be questioned:

(116) a.   Was it stupid to return?
      b.   # Did John stupidly return?

These facts were already pointed out by Bellert (1977). Interestingly, as she shows, they hold for other sentence adverbs as well:

(117) ? Did he probably return?   (cf. Is is probable that he returned?)
       ? Did he unfortunately return?(etc)
       ? Did he frankly return?

Since this is a general pattern, one can conclude that there is something about sentential adverbs that precludes such constructions; the reason for the effect in (115b) and (116b) cannot lie with the lexical meaning of agentive adverbs. As precondition for negating or questioning them, the adverbs would have to be able to receive stress, and we can observe that this is generally impossible for sentence adverbs.

It can furthermore be observed that a negated sentence with an agentive adverb, such as (115b), is not very felicitous even if we try to construe it as the negation of the

VP instead of the adverb. And it is interesting to see what happens when we try to force such a negation:

(118) It is not the case that John stupidly returned

To the extent that it is acceptable, this sentence denies the return. The comparison with (119) shows that in (118) negation sidesteps the adverb, as it were, and only operates on the sentence in the supposed scope of the adverb.

(119) # It is not the case that it was stupid that John returned

So the adverb does not produce a factivity effect in the same way as the adjective. The facts point to the conclusion that the construction in which the adverb occurs is very different from the adjectival construction with its embedding of a sentence. Given its behaviour, we would not expect that the adverb is an operator that embeds the (rest of the) sentence. In terms of the distinction assertion vs. presupposition, the difference that appears between (118) and (119) is that with the adjective, the characterisation of an action constitutes the main assertion, whereas with the adverb, the action itself is the main assertion. It looks as if the adverb were a kind of parenthetical element, then.

In the section on the syntax of adverbs (chapter 2), we already saw that agentive adverbs are very happy with parenthetical intonation, but this does not mean that all occurrences are parentheses in a phonological and syntactic sense. However, there must be a reason for why they are so well suited for this use — it is a pronounced difference to manner adverbs. I hypothesize that the reason lies with their predicative character. Note that agentive adjectives take a propositional entity as their subject argument. If they were to be used as an operator, a different construction would be necessary. Under the assumption of a minimal difference between the adjectival and adverbial variants, the simplest solution would indeed be to construe them with an empty subject that is filled by an anaphoric process. In this, agentive adverbs would parallel a number of other parenthetical constructions, which all involve a gap in an argument position:

(120) a.   John, [− stupidly] returned.
      b.   This, [I believe -], is pure nonsense

A persuasive argument for this kind of approach can be found if we consider agentive adverbs in German. German mostly does not have adverbial morphology, so an uninflected adjectival form is used for manner adverbs (as well as for predicative adjectives and also for depictives; on the latter cf. ch. 5):

(121) a.   Otto ist dumm
            Otto is stupid

      b.   Er hat die Frage dumm beantwortet
            He has the question stupid answered
            "He answered the question stupidly"

Surprisingly, however, agentive adverbs do carry a morphological marking. In this use, the adjective gets the affix *-erweise:*

      c.   Dumm-erweise hat er die Frage beantwortet
            Stupid-affix has he the question answered
            "Stupidly, he answered the question"

Historically, this is obviously a noun phrase in the genitive case:

(122) dumm-er Weise (hat er die Frage beantwortet)
      stupid-GEN.FEM.SG   way   (...)

The genitive is an adverbial case here, it also occurs in temporal adverbials, like in: *Abend* "evening" - *(des) Abend-s* (the-GEN.MASC.SG evening-GEN) "in the evening". Furthermore, it appears as a marker for absolute constructions like *guten Gewissens* (good-GEN.SG   conscience-GEN) "with a good conscience". Both uses are not productive. The noun "Weise" that appears in (122) is also very interesting: In one sense it means "tune"; in its other sense, which is relevant here, it can be translated as "way", because of its occurence in collocations as:

(123) er hat in dieser Weise geantwortet
      he has in this way answered
      "He answered like this / in this way"

The meaning of (123) is practically the same as if a manner adverb were used. Ironically, *Weise* is indeed the usual German translation for "manner", as in the term "manner adverb" (though usually, the term "manner" is rendered by the fixed collocation *Art und Weise*, literally: "kind and manner"). Its appearance to mark agentive adverbs seems very surprising, but I am going to suggest that it is in fact well motivated. A common denominator that unites the senses "manner", "way" and even "tune" is the concept of a process that proceeds in time. I take it that the meaning that originally motivated the collocation *dummer Weise* is something like "(in / by) a stupid course of events". As has been stressed several times, agentive adverbs consider a set of branching alternatives, and the word *Weise* naturally refers to this particular course of events that is described by the action at hand. This is why we may suspect that an anaphoric process is going on: The noun, and hence the affix *-weise,* would be a predicate ranging over situated events. It could not be thought of as introducing an operator. As can be expected, in agentive adjective constructions there is no such affix, because the overt event description directly occupies an argument position of the adjective. This also supports the view that agentive adverbs do not constitute a lexical entry of their own (hence, German *-weise* is not a derivational affix).

Here is a sketch of how the meanings are computed in the adverbial construction: First, we interpret the main clause without the adjunct. For example, in a very simplified form:

(124) a.　　John passed back to the goalkeeper

　　　b.　　returnpass(e)(John)(w_0)

The next step, I propose, is fact anaphora in the style of Asher (1993). In Asher's framework, this means that we have a predicate which selects a particular type of abstract object. So the adverb looks as follows (again, the morphology is assumed to play no role for the semantics):

(124) c.　　stupid(ly) (x) (k)

I will leave aside the issue of identifying the x-argument. The p-argument must now be resolved, and this can be done via a characterisation relation. We select the suitable

proposition from the context and add this specification to the discourse. This step is, however, implicit. So, (124c) actually contains the following information:

(124) c.   stupid(ly) (x) (k); k   returnpass(e)(John)(w_0)

From then onwards, we proceed as we did in (110) with the adjectival construction. In fact, the adverb is lexically identical to the adjective. The only thing that is different is that the link to the previous discourse structure (characterising k) is established via anaphora, and that the two steps of processing the event description and the evaluative statement are realised within the same sentence — this is precisely what I called the parenthetical nature of the adverb: It represents a separate piece of discourse. So, the lexical interpretation looks precisely as the one for the agentive adjective above:

(124) d. $\text{stupid}_{C,\,w*}$ (x)(k) = 1

with k $<$ {e,x,...}, {P_{w0}(e, x...)}$>$ and:

(i)   C $|=$ e*: e CAUSE e*, &

(ii)   x does not intend to bring about e*, the occurrence of e* is incompatible with the preferences of x in w_0,   &

(iii)   w'   W: e [$P_{w'}$(e)(x)] $D_{w'}$(x),

With respect to (iii), I should iterate the point that it is unproblematic for the lexical interpretation to access the focus alternatives of the proposition in the subject position of *stupid.* The focus feature reacts to the presence of a presupposition, and the adverb's interpretation draws on the same presupposed set of alternative actions as the focus marking itself does.

To provide additional support for this proposal, let me come back to the case of (118):

[118] It is not the case that John stupidly returned

This sentence is not very felicitous, but never mind. We do have clear intuitions as to what it would mean if it were accepted. In this best possible case, the meaning could be paraphrased as:

(125) It is not the case that John returned — which would have been a stupid thing to do.

As already said, we would have no explanation for why the negation can target the sentence projected by the verb *return* if we assumed that, first, *stupid* applied as an operator to the sentence, and second the negation applied on top of this. The interpretation that really arises is exactly the same that would arise with abstract object anaphora when the clause under the negation is chosen as the antecedent. The evaluation is not negated, it rather becomes hypothetical. This is the same as would have to happen in a sentence like *John didn't stupidly return,* though this one is even harder to get.[61] Note, finally, that the infelicitous status of *John didn't stupidly return* is in itself in need of explanation. To judge from the pure order of semantic composition, nothing would be wrong with it under the assumptions given with the operator analysis. I guess that there is more prospect of explaining its status by finding restrictions as to possible positions of parenthetical elements in the clause.

4.6. Explaining the Alternations

We have now come to the point where we can resume the basic question of the relationship between the agentive and the manner variant of adjectives like *stupid.* The type of word meaning that has been given for agentive adjectives was quite intricate, and it is notable that it relied heavily on events. So I have to show now how the analysis is able to circumvent the problem common to all extant event-based analyses that agentive and manner variants could be represented in the specific way in which they are distinct but connected.

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[61] So we would not have a full explanation if we said that the construction *it is not the case that S* is not just a negation but really a modal construction that shifts the world parameter of the adverb along with the sentence. This does happen in cases like *It seems that John stupidly left*

4.6.1. The Connection between Agentive and Manner Meanings

The basic idea I want to put forth for the lexical analysis of manner adverbs is that the manner reading is lexically derived from the agentive reading. The conceptual content in these two types of adverbs is not principally different, the crucial difference lies in the context to which they are applied.

We have to look inside verb meanings first in order to understand what the modifiers do. The point at issue is not the usual kind of lexical decomposition, which was mainly tailored to the analysis of aktionsart and argument projection. There are more components to be detected in verb meanings than these. In particular, we have to consider agentive, dynamic events. We can see that they can comprise a whole array of parts that follow in succession as the event unfolds. The notion of "manner" can be made more precise in this context: In one sense, the different manners of an event are the alternative ways in which an event can unfold while still falling under the same event type (but the notion "manner" is used in slightly other senses as well). Here is a simple concrete example. There are different ways of cooking rice: By cooking it in an open pan, continuously stirring and adding water, or by putting the rice in cold water and heating it in a covered pot. And maybe more. This type of description of our knowledge about the ways events unfold is known in cognitive psychology as a **script** of an event (Schank & Abelson 1978).

The point is that the event type *cooking rice* does not say what exactly is going on. The script allows for variants. However, modifiers can make reference to exactly these component parts; and the problem is that many modifiers can be fully understood only if details about the event type are known or can be inferred. For example, *cooking the rice slowly* can be easily interpreted from the background of the assumption that we proceed by recipe number one: In this case, we can infer slow stirring of the rice, adding little amounts of water at a time, etc. (*slowly* does not just say that the event takes a short time). From the background of the second recipe, some other story has to be told, and this time it is maybe somewhat more difficult to come up with an explanation for why and how the modifier is applied. This is to illustrate that the mechanism of abductive inference has to play a major role in the fine-grained analysis of manner modification.

Now let us consider agentive events. These are marked by the fact that the way in which the event unfolds is dependent on the decisions of the agent. Thus, manner

modification may consist in characterising the kind of decisions the agent takes. At this point, we can see the connection to the background that had to be assumed for the lexical interpretation of agentive adjectives. Let us consider the scenario of two people in negotiation. As a simple approximation, the concept of *negotiating* can be broken down into a succession of small events: One of the participants demands something, the other either accepts or rejects, maybe making a modified offer in return. The process goes back and forth until an agreement is reached. In a concrete case, the development of the event could be described in the following ways:

(126) a.   John immediately accepted all of Jim's demands
      b.   John rejected every offer and never modified his demands.

Scenario (a) can be called stupid of John if we assume: He would rather have saved some money, and he could in fact have tried to beat down the price, he was just ignorant of a strategy to achieve this. If we assume this background, we can conclude:

(127) John stupidly accepted all of Jim's demands
                    John negotiated stupidly

Likewise, if John's behaviour described in (126b) was stupid in the sense that he inadvertently precluded an agreement, in spite of the fact that this would have been in his interest, then we can conclude:

(128) John stupidly rejected every offer   John negotiated stupidly

In general: An agentive adverb A with a verb V1 entails a sentence with the manner use of A with a verb V2, provided V1 describes a "manner" of V2 — i.e. V1 can be inferred to be a significant part of the script that represents V2.

The reason for why these entailments hold between certain occurrences of agentive and manner variants is the following: With the agentive variant, a state of affairs is evaluated in a larger context which contains at least its effects and a representation of the agent's preferences. The state of affairs under evaluation is explicitly given, the properties of the context must be inferred. With the manner variant, it is the other way round: The big whole causal chain (the "context") is given,

for it is now represented by the concept denoted by the verb, and the general purposes of such actions are associated with our knowledge of the verb meaning. Here, only an evaluation and dispositional characterisation are given by the adverb — and then, the concrete step in the event chain has to be inferred that can be so characterised. This is the "manner" ultimately singled out by the adverb.

Let's take the representation of the meaning of agentive *stupid* from the previous section, in order to see how it can be applied to the case of *negotiate stupidly:*

[110] d. $stupid_{C, w*}(x)(k) = 1$ iff k $<$ {e,x,...}, {P_{w0}(e, x...)}$>$ and:

    (i)   C |= e*: e CAUSE e*, &

        (ii)   x does not intend to bring about e*, the occurrence of e* is incompatible with the preferences of x in w_0, &

        (iii)   w' W: e [$P_{w'}$(e)(x)] $D_{w'}$(x),

For explaining the manner use, we have to start out from $stupid_{C\ w}$ *(x)(k),* and solve for k, i.e., we have to find a suitable property P. Surely, we also have to say something about the difference between the notions of discourse structure, on which the treatment of agentive adjectives was based, on the one hand, and the notion of an event concept on the other hand. But let us first address the question as to the content of P. The following is the information we can gather: By abduction from our knowledge about the event script *negotiate,* it can be inferred what kinds of causal chains it can contain, and what possible undesirable outcomes of *negotiating* there can be. Part (iii) finally contains the information that we use to select a specific variant of these alternatives from the script. The focus alternatives have to be replaced by the alternatives generated by abduction from the script. Finally, and intriguingly, the roles of possible worlds and of the discourse is taken over by the script, i.e. the event concept. In a way, the concept behaves like a "generic world". It is now the script (or our knowledge of it) that provides for alternative courses of events, and allows us to localise part in them. The course of events finally selected by the manner modifier then constitutes an event description that can be anchored to possible worlds in the compositional semantics.

The account of manner modification that emerges here is again an instance of predicate transfer on the basis of an agentive variant. This is to say, the manner variant is true of a whole event (described by a script) by virtue of the existence of a state of affairs in the script that the agentive variant is true of (mutatis mutandis). As a result,

we see that for the lexical interpretation, the manner adverb must be relativised to event types (however, this does not seem to play any role for the compositional semantics).

This account is also supported by a consideration of cases where combinations of agentive-based manner adverbs with a verb yield unacceptable results. Consider the following example:

(129) ? John left the room recklessly

Such cases can now be explained: The modification relation fails if the information in the verb meaning (the script) does not give rise to the kind of inferences that the adverb would need. In order to interpret the adverb in (129), for example, we need to find possible component events in *leave the room* that can be evaluated as *reckless.* To put it briefly, the meaning of *reckless* can be charaterised as the assertion that an action causes danger for the agent or others, and that the coming about of such a situation is characteristic for the agent's lack of willingness to pay attention to this course of events. The problem with (129) is that *leaving the room* in and by itself does not give us any clue as to what dangers could intrinsically be connected to this event type. Therefore, the manner modification is hardly interpretable. *Driving recklessly* is different in that the standard dangers of driving a car are known to be road accidents.

Another telling example is (130):

(130) ? He forgot his passport absentmindedly

The verb *forget* is very special in that it names an omission. This kind of event can be described in terms of its causes and effects, but not in terms of alternative ways in which it can be carried out. *Forget* does not seem to have any parts, since nothing happens. So the adverb *absentmindedly* finds nothing to put its teeth into. The nice thing about this example is that in the usual neo-Davidsonian representation, it remains mysterious why the modifier is not applicable:

(131)   e [forget(e) & absentminded(e)]

For if we grant that events can be "absentminded", one might intuitively think that the event of *forgetting* should be one of the best candidates for this. Still, this combination is completely unacceptable.

4.6.2. The IL-Variant

We are now coming back full circle to the initial question of this work, namely the question of the relationship between e-predicates and x-predicates. The variant of adjectives like *stupid* that behaves as a pure predicate of individuals is what is known as an "individual-level" (IL-) predicate from the literature.

The investigation of agentive adjectives and adverbs has helped to clarify the notion of e-predicate by showing that the manner use is built on another lexical meaning, namely the agentive variant. This has the consequence that the x-predicating variant does not alternate directly with the manner variant, rather, there will only be a regular lexical connection between the IL- and the agentive variant. It is to be noted that the correspondence between IL-adjectives and the class of agentive adjectives is very clear-cut: Exactly those fact-predicating adjectives that select an *of-* PP also have an IL-variant; for the others (which can take *for)* an IL-use is doubtful at best:

(132) That was clever / rude / generous of Otto.
      Otto is clever / rude / generous

(133) That is regrettable / tragical / surprising   (?? of Otto)
      Otto is ?/# regrettable / tragical / surprising

The regularity of the alternation in (132) shows that it is due to a factor that is systematically inherent in the word meanings of agentive adjectives as a lexical class. At the point we have reached by now, it is not difficult any more to identify the source of this systematicity: It lies in the concept of a disposition. Agentive adjectives were analysed as predicates that characterise a course of actions by making reference to an inner factor in the agent that informs his decisions. Dispositions are thus theories that connect patterns of behaviour to internal psychological properties. We have seen that agentive adjectives make an assertion which concerns the causal efficacy and the

evaluation of the state of affairs at issue, while the internal factor appears backgrounded in their meaning (for instance, it is not targetted by negation). IL-adjectives represent the other side of the coin: They assert the corresponding internal condition of an individual, while it remains in the background how this disposition manifests itself. Thus, I propose that this type of alternation is to be subsumed under the notion of complementary polysemy as described in chapter 2. It is a true case of systematic sense variation: There is an underlying complex concept that is made up of two components that complement each other, and thus the concept surfaces in two different lexical forms.

4.7. Conclusion: The Lexical Alternations of Agentive Predicates

In this chapter, I have shown that manner adverbs of the type *stupidly* must be analysed on the basis of the lexical meaning of the agentive variant. Consequently, manner adverbs of the type *stupidly* do not entertain direct lexical relations to x-predicates. The e-/x-alternation is mediated by the agentive variant, and it is the meaning of the agentive adjective which predicts the existence of the corresponding IL-adjectives.

So, the manner reading is the derived one. Therefore, it has turned out once again that the lexical meanings of neo-Davidsonian predicates are in need of reconstruction in terms of predicates about ontological sorts other than events. However, the case of agentive adverbs is more tricky than the resultative adverbs of the preceding chapter were, since agentive adjectives predicate of something that is close to being a description of an event. Still, the manner reading specifies properties of the subevent makeup of an event, and thus targets events that are not identical to the main event that enters into the logical form of the sentence.

Chapter 5

Psychological Adverbs and Depictives

Overview:

One major purpose of this chapter is to examine the status of the class of "transparent adverbs" that has been delineated in chapter 2. This adverbial class is connected to the (x-predicating) lexical class of adjectives that describe psychological, often emotional, states. Hence, I shall also refer to the transparent reading of those adverbs as a "psychological adverb". The same class of x-predicates is also notable for allowing depictive constructions, in marked contrast e.g. to the class of IL-adjectives that were examined in the previous chapter.

    (1)   a.   John left Mary sad

            b.   ?? John read the book careful

            c.   John read the book carefully

Being defined as x-predicating adjectives in a VP-adjoined position, depictives are also "transparent" adjuncts. Thus, minimal pairs as in (2) deserve special attention:

(2) a.   John left Mary sad
     b.   John left Mary sadly

Contrasts such as those in (2) raise the question as to the explanation of the minimal contrast between adverbs and depictives: What is the semantic correlate of this distinction, and, to begin with, what is the precise adverbial function of "transparent" adverbs? After clarifying the issues related to transparent adverbs and depictives, I shall compare the formation of transparent psychological adverbs with the process that derives manner adverbs from the same adjectives.

5.1. Depictives vs. Adverbs

5.1.1. Morphological Matters

Depictives have long been in the focus of syntactic research concerning control and predication (e.g. Williams 1980, 1994; Rothstein 1985; Roberts 1987, 1988; Déchaine 1993; Winkler 1997). From the perspective of those works, it would appear that the distinction between depictives and adverbs can be drawn quite straightforwardly in terms of the kind of entity predicated over:

(3) a.   leave(e) (x, Mary) & sad(x)   [depictive]
     b.   leave(e) (x, Mary) & sad(e)   [adverb]

However, a persistent problem has been that this distinction cannot always be drawn on the basis of intuitions. Usually, the presence or absence of adverbial morphology is a safe criterion. And additionally, one might think that a manner adverb can be recognised by its characteristic meaning. There are cases, however, in which both these criteria fail: As a matter of fact, English does have adverbs that do not carry the *-ly*-affix, and, moreover, as soon as the morphology casts doubt on the distinction adjective-adverb, the semantic criteria suddenly turn out to be not as strong as expected

— either because there are other adverb types besides "manner" that could still subsume an affixless adjunct, or because there is in fact a gradation between manner modifiers and depictives.

To take an example, Roberts (1987) encounters the following problem: Noting the generalisation that depictives cannot predicate of implicit arguments, as evidenced by (4), he is confronted with apparent counterexamples like (5) (Roberts 1987:173, footnote 2):

(4)   a.   He$_i$ left the room sad$_i$

       b.   ?? The room was left sad

(5)   The game was played barefoot

To explain the acceptability of (5), Roberts speculates that *barefoot* is actually an adverb, not a depictive. Since adverbs do not invariably have a *-ly-* affix, this would not be out of the question. However, the astonishing thing is the absence of any criteria that could decide the question. Maybe *barefoot* does somehow characterise the event of playing, in addition to what it says about the players, or rather, in virtue of this. Considering *barefoot* as an adverb entails that adverbs can contain a predication of individuals, so, in our terminology, we would be dealing with a transparent adverb in (5). In the absence of special morphology, however, it is unclear on which basis the distinction between adverbs and depictives can be maintained.

The situation is even worse in a language like German. As already mentioned, German does not have morphology for VP-adverbs at all (with the exception of some cases of frozen affixes in e.g. temporal modifiers). Therefore, in German, the difference between depictive and adverb is blurred in principle:

(6)   Hans ging traurig hinaus
       John   went   sad/sadly   out   "John left sad / sadly"

Upon closer inspection, however, there does seem to be a correlate to the distinction drawn in English: The translations of English depictives and of English adverbs seem to be characterised by different word order properties. Consider the following patterns:[62]

(7)   a.   John left the room sad

                daß Hans den Raum traurig verließ[63]

                that John the room sad left

        b.   John left the room sadly

                daß Hans traurig den Raum verließ

                that John sad the room left

The fact that the morphological distinction in English resurfaces as a syntactic difference in German may be taken as indicative of a semantic difference between the two variants, since German word order is known to closely reflect differences in information structure. By the same token, we know that we have to expect a semantic difference of a fairly subtle sort.

It seems hardly possible to characterise this semantic difference immediately on the basis of intuitions. The problem mainly lies with the notion of "event adverbs". The concept of depictives that predicate of an individual appears to be fairly clear (though appearances can be misleading). The notion of "manner adverb" is somewhat less clear: Sometimes we lack the criteria to decide whether an adverb should be subsumed under this notion or not. Complete confusion seems to arise at the point where we encounter what has been termed transparent adverbs. Given that they seem to express a predication of an individual, too, this would undermine a simple characterisation of the adverb / depictive distinction in terms of the entity predicated over. A detailed account seems impossible, however, as long as we are in the dark about both the relation of event adverbs to the verb's individual arguments and the relation of depictives to the verb's event argument. This is what I will turn to first.

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[62] I use embedded clauses for they show the underlying word order of the German clause more clearly. The main clause order is derived by first moving the verb in front and then topicalising any other constituent before it.

[63] It seems that this order still allows the meaning of "left sadly" if the adjective is destressed and the verb alone is stressed. Normally, however, depictives receive stress, and in this intonation, a depictive interpretation is triggered in (7a).

5.1.2. The Interpretation of Depictives

a. Reference Time vs. Event Time

The kind of representation for depictive constructions as in (8a) is what can usually be found when depictives are mentioned in general-purpose semantic treatments (e.g. Stechow 1992, Larson & Segal 1995). One thing which is conspicuously left open by this kind of formula is the issue of a state argument for the adjective, and thus the relation between the two situations.

(8) a. e: leave(e) (x, Mary) & sad(x) [depictive]

   b. e: leave(e) (x, Mary) & sad(e) [adverb]

With this representation, we are also left without an explanation why "individual level" (IL) predicates are usually bad in this construction:

(9) a. John wrote the letter angry / ?? crazy

   b. Jan fixed the toaster   ?? clever

   c. John entered the room   ?? tall

In a very influential theory put forward by Kratzer (1995 [1988]), IL-predicates are described as predicates which lack an event argument straight away. As such, they would perfectly fit in with the structure (8a). However, since it is precisely the IL-adjectives that are excluded while other adjectives that are assumed by Kratzer to have a state argument are the ones that are allowed, one would conclude that the crucial property of depictive constructions is actually not the fact that they predicate of an individual, but rather that they involve the neo-Davidsonian arguments of verb and adjective — for instance in virtue of their temporal properties. To be sure, this argument does not require that we believe in Kratzer's analysis in a strong sense: It would already suffice to assume that IL-adjectives refer to a particular subclass of states with distinctive temporal properties. It is fair to say that IL-adjectives are less "episodic", and this could be the crucial factor that makes them unsuitable as depictives.

 Indeed, it can be noticed, and has often been noticed, that depictive constructions convey meanings similar to *when*-clauses, which are usually considered to have a

temporal meaning. So, to learn something about the temporal interpretation of depictives, it will be useful to compare their meanings to *when*-clauses. It will then be seen that depictives are similar, but behave differently in some important respects. The differences can, for the most part, be traced back to the fact that adjectives in *when*-constructions occur with the copula and that, therefore, the linking of the two situations is mediated by tense. Depictives, on the other hand, are not linked to tense.

For the purposes of the present discussion, I consider only *when*-clauses containing a state. If both parts of the construction denote dynamic events, they can be understood as occuring in a sequence:

(10)   When the judges came in, everybody stood up

For these cases involving dynamic events, the analysis of *when*-clauses cannot simply be stated in terms of temporal overlap; a more complicated model is needed. Johnston (1994) therefore defines a "time frame" consisting of the time of the situation in the *when*-part plus its "aftermath", and formulates temporal overlap with respect to this time frame. Interestingly, the same possibility exists for state predicates, too. This is to say, a state predicate in the main clause can obviously be reinterpreted as the "becoming of that state":

(11)   Mary was glad when John came in.

This change-of-state interpretation is an interesting phenomenon that will ultimately bear on our analysis of psychological adverbs. I shall come back to it in section 5.2.3. For the present context, however, let us confine the investigation to the interpretation of temporal conicindence. If depictives are paraphrased by *when*-clauses, we invariably get *when*-clauses with this latter interpretation. The adjectival adjunct then regularly appears as the predicate of the main clause. This particular correspondence can be explained by the fact that depictives in final position attract focal stress and that it is the main clause which contains the new information in a *when*-construction (while the *when*-part usually presupposes the described event to be "known" in some sense):

(12)   a.   John left the party sad
       b.   John was sad when he left the party

To give a semantic representation, I have to introduce a number of assumptions, which will inevitably be quite simplistic, but sufficient for our purposes. Tense is taken as a relation between utterance time and reference time (i.e., the time a claim is made about). I represent the reference time of a sentence by a temporal variable that is detached from the verb.[64] It is the function of aspect to anchor the event to the reference time; so aspect is represented as a relation between an event and a time. In this way, an implausible subtyping of temporal variables can be avoided (i.e., we don't need extra variables for the "time of the event" as opposed to reference time). The most unmarked case of an aspect is provided by the temporal trace function, indicating that the reference time equals the runtime of the event. In other cases, reference time and event time differ, e.g. in the perfect. In the perfect, the reference time is an interval that lies after the event time (the interval that has just been called the "aftermath"). Finally, in line with Johnston (1994), I assume that states are linked to an interval by inclusion of this interval into the runtime of the state (i.e., it is always possible for the state to hold before and after the reference time, too). Still focussing on the interpretation that the sentence denotes the temporal intersection of the state in the main clause and the event in the *when*-clause, we get something like the following (adapted from Johnston 1994):

(13) a. When he left the room, he was sad

  b. $\{ \ t \ [\ \exists e \ [\textbf{leave-the-room}(e)(he) \ \& \ t = \tau(e)] \ \& \ t < t_0 \ ]\};$

   $\{ \ t \ [\ \exists s \ [\textbf{sad}(s)(he) \ \& \ \tau(s) \supseteq t] \ \& \ t < t_0]\}$

The temporal intersection need not consist in cotemporality of two eventualities. If a perfect occurs in one of the clauses, the sentence experesses an overlap with the reference time of the perfect, which is after the time of the event:

(14) a. When John arrived, Mary had already left

  b. When we had eaten, we were tired

---

[64] It is implausible that verbs should have both an event and a time argument, for the verb does not seem to express a relation between events and times: Once the event is identified, the time of the event is fixed.

I render the perfect here simply as a relation "AFTER" that is inserted instead of $\tau(e)$. It yields an interval that stretches for an indefinite time after some event. So we get the following representations for (14a) and (14b), respectively:

(15) a. $\{ \ t \ [\ \ e_1 \ [\textbf{arrive}(e_1)(\text{John}) \ \& \ t = \tau(e_1)] \ \& \ t < t_0 \ ]\}$

$\{ \ t \ [\ \ e_2 \ [\textbf{leave}(e_2)(\text{Mary}) \ \& \ t = \textbf{AFTER}(e_2)] \ \& \ t < t_0]\};$

b. $\{ \ t \ [\ \ e \ [\textbf{eat}(e)(\text{we}) \ \& \ t = \textbf{AFTER}(e)] \ \ \& \ t < t_0]\};$

$\{ \ t \ [\ \ s \ [\textbf{tired}(s)(\text{we}) \ \& \ \tau(s) \ \ \ t] \ \& \ t < t_0 \ ]\}$

The point is now to observe that this kind of reading is never available for depictive constructions. Let us try the following examples:

(16) a.   (?) We had eaten tired

b.   (?) Tired, we had eaten

Example (16b) cannot be interpreted like (15b), i.e., as stating that "we were tired at the time in question, which is after the eating". The different word order in (16b) doesn't facilitate this interpretation either. The only way to make sense of (16a) is to construe it as saying "we were tired during the eating". Even as such, it is not very felicitous (which seems due to the fact that the depictive interferes with the resultative reading of the perfect[65]). Be this as it may, it is obvious that the depictive is always anchored to the event, not to tense (in contrast to what seems to be assumed in Rothstein 1985, Winkler 1997).

The idea suggests itself that adjectives in *when*-clauses behave differently because these clauses involve a tensed copula with the adjective: It is the tensed copula which establishes the link between the adjective and the reference time. Klein (1997) conjectures that bare adjectives, nouns and PPs by themselves cannot be linked to tense; for this, the copula is needed. If this is so, this goes some way towards explaining the narrow range of interpretations available for depictives. However, this claim is in need of a qualification with respect to some occurrences of bare adjectival phrases in other adjunction sites:

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[65] The same effect can appear when certain adverbs are added in a resultative perfect: They sound unacceptable if they do not contribute information on the resultant state. Consider e.g. ? *I have opened the door silently*

(17) a.   Dead, they have taught the living.   (from Stump 1985)

     b.   Bill, angry at John, didn't come.

What these examples seem to indicate is that adjective phrases can be linked to a reference time even in the absence of the copula if they are forced into a clausal status. This holds for free adjuncts in (17a) and parentheses in (17b) (note the difference between (17b) and (16b) above). Free adjuncts and absolutes clearly involve a combination of two sentential constituents, and as soon as the adjectival phrase assumes this status, it also appears to have access to reference time. Depictives, on the other hand, are integrated into the clause as adjuncts, and therefore can receive a temporal interpretation only via the event variable that is around in the clause. Also, the causal or conditional semantic links that typically serve to integrate free adjuncts and absolutes, discussed in depth in Stump 1985, cannot appear with depictives.

     For the semantic representation, I employ an overlap relation "o" between eventualities; the exact interpretation will be refined below in connection with the delineation of depictives from adverbs. The point is that, although there is of course still some kind of a temporal assertion, this assertion can only be made via the event variable, because we have to pick up the time of the event. The introduction of the overlap relation takes the form of an augmentation of the AP. For the acceptable interpretation of sentence (16a), we get a formula like the following (the issue of control, i.e., identification of the x-variables, comes in as an additional complication):

(18) We had eaten tired

    t { $t < t_0$ &

    $\lambda \mathbf{x}$ [e (**eat**$(e)(x)$ & s [$e \circ s$ & **tired**$(s)(x)$]) & $t = $ **AFTER**(e)] (**we**) }

Interpolating an overlap relation means that we posit a "constructional meaning". The interpretation of depictives must follow a default mechanism which arises from the grammatical structure in which they occur. Therefore, we have to turn to grammatical conditions on this interpretation.

b. On the Syntax of Depictives

If depictives are interpreted via a link between the event and the state variables, it would be a natural expectation that depictives should be quite close to the verb. In English, depictives always occur in final position, a position that at first creates a structural ambiguity. When we consider the ordering of depictives relative to other postverbal elements, however, we find that depictives have to follow resultative adjectives and that subject depictives follow object-depictives (examples from Winkler 1997):

(19)　John kicked the door open tired　　　(resultative < subj. dep.)

(20)　Murphy hammered the coin flat hot　(resultative < obj. dep.)

(21)　John ate the meat raw tired　　　　　(obj. dep < subj. dep.)

This ordering indicates that both subject- and object-depictives in English have to be right-adjoined. Resultatives then occupy the immediate complement position next to the position of the English verb before it undergoes short movement.[66]

　　　This leaves us with the task to determine the phrasal level of adjunction. Several authors have proposed that at least subject depictives should be adjoined at the IP-level (e.g. Rothstein 1985, Nakajima 1990, Déchaine 1993), mostly for theory-internal reasons that have to do with their programme of formulating structural conditions on predication relations. However, Roberts (1988) presents strong evidence to the effect that even subject-predicating depictives must be attached at the VP-level. Roberts adduces a number of standard "VP tests" like VP fronting, *though*-movement, and pseudoclefts to show that depictives cannot be stranded by these processes that affect VP. The following example illustrates the point for pseudoclefts:

(22)　What John did was leave the room happy.

　　　 ?? What John did happy was leave the room.

Moreover, Roberts (1988) observes that negation invariably has scope over depictives:

(23)　Bill didn't leave angry at John

This sentence cannot mean that Bill, angry at John, didn't leave. If adjunction at the IP-level were possible, or even obligatory, this would not be expected. In this respect, depictives differ from certain other right-adjoined elements (Roberts' examples):

(24) a.   John didn't kiss his wife [because he loves her]

      b.   John didn't kiss his wife(,) deliberately

The above examples are ambiguous in that the adjuncts can be interpreted inside or outside the scope of negation. Disambiguation is provided by intonation: In a structure with right adjunction, in which the modifier is outside the scope of negation, the VP *kiss his wife* receives the unmarked sentence accent, and the adjunct receives an accent of its own. When the sentence accent is distributed over the postverbal elements, this is standardly taken to indicate that they are contained in VP. Interestingly, depictives have always to be integrated into the VP intonationally. A stressing as in example (25b) below can only be understood as involving contrastive focus on the verb, otherwise it is rather awkward:

(25) a.   John didn't leave h**á**ppy

      b. ?? John didn't l**éa**ve happy

There is an interesting parallel in the behaviour of temporal adverbials. Many temporal adverbials can be ambiguous between an anchoring with the reference time, i.e. tense, and an anchoring with the time of the event.[67] For sentence-initial adverbials, only tense is accessible, while sentence-final adverbs show both readings. In the latter case, the attachment level is again differentiated by intonation:

(26) a.   At ten, John had l**é**ft

      b.   John had l**é**ft at ten

      c.   John had left at t**é**n

---

[66] This picture is confirmed by the fact that German (with its verb-final structure) exhibits exactly the mirror image of this ordering. (German permits right-adjunction only for very heavy elements, but never for depictives)

[67] The ambiguity of temporal adverbs is investigated in detail by Hitzeman (1993). She terms the distinction at issue the "temporally definite" vs. "temporally indefinite" reading. Hitzeman is mostly concerned with adverbials that measure intervals. The examples in (26) are discussed in Klein (1994).

Examples (26a) and (26b) are synonymous (on a non-contrastive reading for (26b)): Both state that ten o'clock is the time after the leaving. In contrast to this, the only reading that is available for (26c) is one that locates the event of leaving at ten o' clock, i.e., earlier than the reference time of the sentence. Even if we are dealing with a temporal adverbial here, the crucial point is that it must be connected to the event if it occurs as part of VP.[68]

So far, a coherent picture emerges: Depictives are anchored to the event, and correspondingly they are attached at the VP-level and receive part of the sentence accent. In this respect, they appear somewhat similar to VP-adverbs. Note that the augmented denotation of the AP in (18) actually exhibits the type of a Neo-Davidsonian adverb in that it contains a free e-variable. The question still remains, however, why depictives **cannot** appear higher in the structure. In fact, there is a further restriction in the syntax of depictives besides attachment to VP: They can only occur in clause-final position. Recall from chapter 2 that VP-adverbs also have the option of left-adjunction to VP, an option that seems to be correlated with a backgrounding, or at least downtoning, effect. I repeat the structure from chapter 2 here (as indicated there, PrP is an extended lexical projection of V, and as such counts under "VP" in the broad sense used above):

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[68] In line with the model adopted here, many temporal modifiers must be ambiguous in that they can be predicates of events or of times. Thus, for (26c), but not for (26b), I assume a translation in the style of Parsons (1990) (26c): leave(e) & at(e, ten). This seems to be a natural kind of variability (or indifference), which is also observable for adverbial quantifiers.

(27)

```
                    PrP
              /            \
           NP               Pr' - - - - - - - - - - - - - - - - - - - - - - - \
         Subject         /       \                                            \
                      (Adv)       Pr'                              (Adv/Depictive)
                               /       \
                             Vᵢ         VP
                                     /       \
                                    P          V' - - - - - - - - - - - - \
                                Direct Obj   /     \                       \
                                          (Adv)     V'        (Adv/Depictive)
                                                  /     \
                                                 tᵢ    Oblique Complement
```
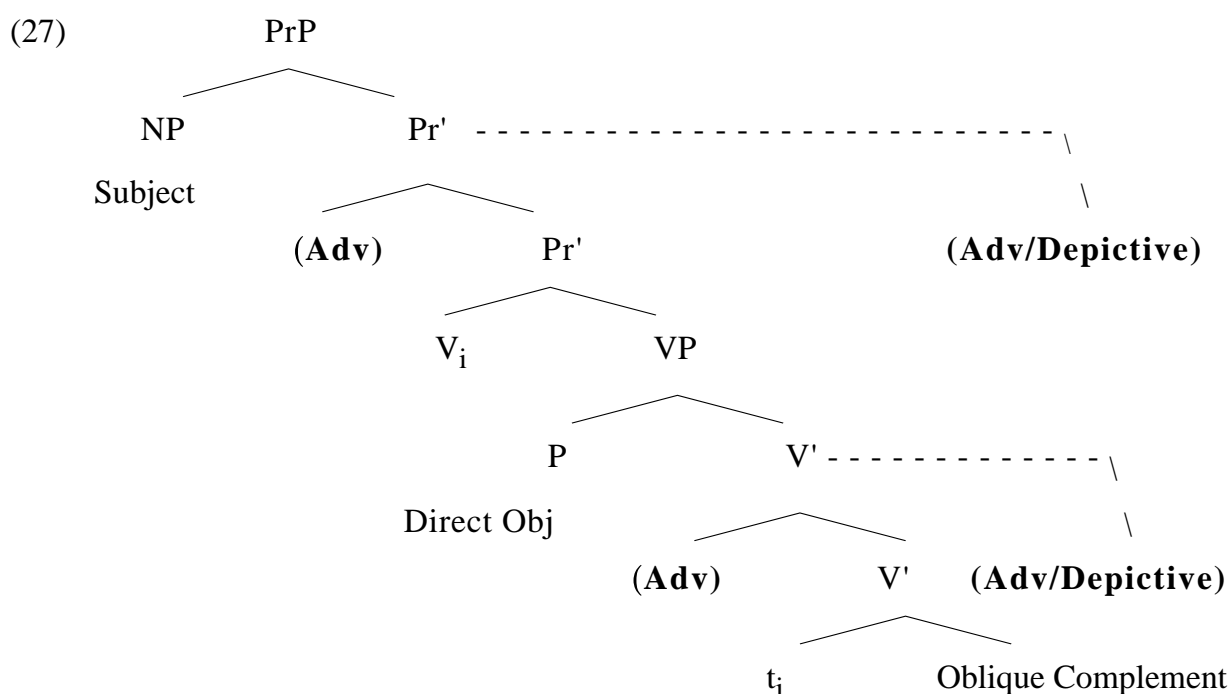
So we can conclude that depictives must be accentuated (unless this condition is overriden by contrastive focus on the verb). Although I don't have an explanation to offer that strictly derives this observation, it is consonant with the constructional meaning that we have begun to identify: Depictives express the coincidence of a state with an event, and they present this as a whole complex situation (i.e., as two overlapping eventualities). The coincidence of the event with a state then becomes something like a property of this event. This also must be the reason for why individual-level adjectives are excluded from the depictive construction: If an individual has such a long-term property at all, it cannot but coincide with an event that this individual performs. This assertion is thus never informative. While depictives in a way add information about the event, they do not modify the lexical content of the verb, i.e. do not add to the event concept that is expressed. I suspect that this is what underlies the requirement that they must be rhematic elements.

c. Conclusion

In this section, it has been shown that depictives differ in a number of respects from *when*-clauses, although the latter often provide fair paraphrases:

When- clauses
> 1. state temporal intersection wrt reference time
> 2. allow for an inchoative interpretation of some states
> 3. allow "manner"-like relations

Depictives express an overlap between situations, but do not exhibit these three properties. Furthermore, they are different from adjectival adjuncts in the left periphery in that:

Free adjuncts
> 1. allow independent temporal anchoring
> 2. allow the interpolation of a causal relation

These two properties have been assumed to derive from a sentential nature of absolute adjuncts. Depictives seem to be characterizable by an overlap relation that crucially targets the event argument. They express a state that holds independently of the event, yet as such coincides with the event.

5.2. Transparent Psychological Adverbs

5.2.1. Minimal Contrasts between Depictives and Adverbs

Chapter 2 already gave an outline of the special properties of transparent adverbs that set them apart from manner adverbs. To recapitulate the important points briefly:
> • The paraphrase "in a ... manner" cannot be applied
> • Transparent adverbs can show a preference for preverbal position while it is the opposite with manner adverbs. (Both types can in principle occur in either position, though)
> • Most importantly, transparent adverbs assert the existence of a state of an individual; this state can even hold on after the event is over.

If it is true that these adverbs refer to a state of an individual, the difference to depictives is unclear at first. However, there are clear intuitions that adverbs and depictives cannot be used interchangeably. This can be shown from an examination of

minimal pairs that involve the same underlying adjective in the same sentence. In these particular contexts, then, depictives may turn out to be unacceptable while adverbs are good. Given the analysis of depictives that was developed in the previous section, it is not obvious what kind of factor could ever prevent the use of a state predicate as a depictive. However, consider the examples with the minimal contrasts in the (b) parts.

(28)   a.   He returned angry

         b.   He read the review of his book {?angry / ok: angrily}

(29)   a.   He left sad

         b.   He discovered {?sad/ ok: sadly} that the solution was incorrect

(30)   a.   She returned from the meeting very proud

         b.   She showed us the pictures very {?proud / ok: proudly}

The choice between adjectival and adverbial forms is obviously not determined once and for all by the lexical meaning of the adjective. Rather, the choice is driven by the context, and verbs like *leave, arrive, return* seem to yield contexts that are particularly well suited for depictives. So while it can be shown that individual-level adjectives like *intelligent* are disallowed in depictive use by virtue of the lexical-semantic class they belong to, one must assume that psychological adjectives are allowed or excluded depending on contextual or pragmatic factors, but not as a matter of their lexical meanings. It seems that the verb meanings in the (b)-examples create a context which prompts the use of adverbs.

A close inspection of the above examples leads to the following intuitive generalisation: Where the depictive is used, the psychological state is understood as holding independently of the event which is denoted by the verb. For the (a)-examples above, we tend to infer that the emotional state has held before the leaving, etc. Where adverbs are used, however, they convey the meaning that there is some kind of a "dependency" relation between the state and the event.

5.2.2. The Interpretation of Psychological Adverbs

What, then, is the nature of this "dependency" relation between the event and the state that underlies the psychological adverb? It isn't an attitude what is expressed here. Very clearly at least, there are no attitudes towards the propositions that can be formed from the rest of the sentence:

(31) a. John angrily read the review
          # John was angry about reading the review
      b. John angrily shouted at the people
          # John was angry about shouting at all these people

What is more, there are some adjectives that exclude a description in terms of attitudes because they denote states that are in fact physiological rather than psychological, though they are otherwise sufficiently similar to be included in this class. We might use the cover term "emotional/motivational state". For example, at least some speakers allow for an adverbial (non-manner) use of the adjective *hungry:*

(32) The boy hungrily returned to his parents
      I hungrily opened the fridge

Given that we have just described the lexical class of adjectives at issue as "emotional / motivational", the idea suggests itself that the adverbial constructions describe ways in which people are "moved". In other words, in (32) as well as in (31b) we are dealing with an event that is the consequence of some emotional state, or is "motivated" by such a state. In (31a) it rather seems to be the other way round: We conceive of the state *angry* as somehow arising in the course of the action of reading. This is an interpretation that also arises with many other examples (never mind that there may be other readings available for the adverb besides the one just described):

(33) John left sadly
      She proudly showed me the pictures
      He read the apology contentedly

The "motivational" meaning, on the other hand, can be found in the following examples:

(34)   John angrily wrote a letter to the editor

John nervously fidgeted with the pencil

He hungrily opened the fridge

So both types of interpretations yield recurring patterns, and it seems in fact that these two interpretations exhaust the possibilities for transparent adverbs. In the following, I examine the type in (33) in more detail, the type in which the psychological state is caused. In a later section, I then turn to the motivational type.

5.2.3. "Psychological Causation"

a. Three Constructions Involving Psychological Causation

For a better understanding of the first type of interpretation available for psychological adverbs, it is illuminating to compare them to the behaviour of psychological state predicates in *when-* clauses:[69]

(35)   a.   Mary was glad when John returned.

b.   Mary was hungry when John returned.

These two sentences give rise to different inferences. The most natural interpretation for (35a) is that Mary was glad as a reaction to John's return. In (35b), this effect does not show up: *hungry* is interpreted as strictly cotemporal with the *when*-clause: Perhaps John was late for lunch, and in the meantime Mary had become hungry, while she was waiting. The following correspondence can now be observed between depictives and paraphrases with *when*-clauses: Adverbial morphology on psychological adjectives is parallelled by *when*-clauses in which the interpretation arises that the psychological state is a reaction to the event, and the use of depictives is parallelled by a purely cotemporal interpretation of a *when-* clause:

(36)   a.   John returned hungry

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[69] I am grateful to Veronika Ehrich for pointing out this parallelism to me.

b.　John was hungry when he returned　[and possibly before that]

(37)　a.　John gladly returned home

b.　John was glad when he returned　　[probably not before that]

This again illustrates the fact that in the interpretation of psychological adverbs a dependency relation between two eventualities plays a role. It is clear that this dependency is not part of the lexical meaning of the psychological adjectives in question. In the case of *when*-clauses, we are rather dealing with a case of inference that serves to create contextual coherence.[70] However, the interpretation finally arrived at has quite peculiar properties. We might say that the psychological state is brought about by the event, i.e. caused by it, but we can as well say that the two clauses in (37a) are linked by the inference that John was glad **about** his return. It is true that the gladness is an emotional state that comes into being at the reference time, but nevertheless it has to be viewed as essentially cotemporal with the event. This can be felt even clearer with the adverbial examples themselves; for instance, *reading the review angrily* speaks about an emotion that comes about in reaction to the reading, but is concomitant to it.

If we conceive of this bringing about of a psychological state as what it appears to be, an instance of causation, then we shall have to introduce a variant of causation with special properties, call it "psychological causation"[71] (– CAUSATION). It requires that simultaneity holds between cause and effect, for example in the following form:

(38)　 – CAUSE (s,e)　　e o s

However, we shall have to add a refinement to this. The special status of psychological causation can also be detected in the behaviour of verbs that express this relation as a whole — the class of causative psych-verbs such as *to anger, to worry,* or *to upset.* These can also be used to give paraphrases for adverbial constructions of the causal type:

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[70] Note that the same is true for the free adjuncts and parentheses mentioned in connection with (17). Interestingly, the psychological predicates occur as bare AP but allow the same kind of interpretation as situationally dependent that otherwise occurs with the adverbial forms. The crucial difference is that parentheses and absolutes have clausal status. Adverbial morphology only appears when the situational dependency obtains between predicates that belong to the same VP.

[71] A. von Stechow (p.c.) pointed out to me that temporal succession is not contained as a requirement in the standard conceptions of causation either. It would be an interesting question to see whether there is really no commitment as to succession in, say, the event structure of accomplishment verbs, which since Dowty (1979) standardly uses a CAUSE relation. Be this as it may, if the concept of causation is neutral with respect to temporal succession, psychological causation is still special in that it positively requires cotemporality.

(39)   He read the review angrily

      Reading the review angered him

To elucidate the semantics of   -adverbs, therefore, it will be helpful to enter into a brief digression on causative psych-verbs. Causative psych-verbs have two properties that have always vexed researchers: 1. The concomitance of cause and effect. 2. The loose semantic association of subject and verb.

b. Causative Psych-verbs

It has been a long-standing problem in the analysis of psych-verbs such as *anger, worry,* etc that they do not seem to fit into the standard aktionsart classification. It is not even clear how they have to be grouped with respect to the fundamental distinction of "stative" vs. "dynamic". On the one hand, they can be combined with adverbials of duration, are not made up of elementary subparts that recur in a cyclic fashion (as is the case for many activities), and they do not seem to imply a development leading up to a point of culmination. Hence, they give the impression of being stative predicates. On the other hand, they intuitively do mark the coming about of a new state, and can be combined with adverbs such as *suddenly*. And most importantly, they have a "causative" meaning: The verb *to anger,* for instance, seems to be paraphrasable by the collocation *to make angry.*

I want to propose that the class of psych-verbs at issue really has a causal semantics, but that psychological causation has the specific, irreducible property that has been sketched in the previous subsection: The psychological state is a contingent state whose cause does not precede the state but is conceived of as being concomitant with the state itself. This is due to the fact that predicates like *angry, sad, worried* etc denote emotional episodes that are inevitably accompanied by, and caused by, the mental representation of a cognitive object of some sort. Instead of tinkering with aktionsart classifications, it will be better to grant that causation in this psychological setting has these inherent special properties. Moreover, we can posit that the emotional episode contains a conscious representation of the ongoing event e that overlaps with it. This unites the stative-causative ambivalence of causative psych-verbs with the intuition that

psychological adverbs do not just denote a state that overlaps the event but that the state actually holds *in* the event.

This behaviour is probably related to a second peculiarity about these verbs, which lies in the nature of the causer — the way in which causative psych-verbs select their subjects is another point that has always created puzzlement. These verbs are characteristically indifferent as to the sort of individual they take as a subject. The subject can be a thing or a sentential constituent. The reader may already have noticed that in examples (31) and (39), transitive gerunds have silently reentered the stage, which again lead us to a "factive" interpretation:

(40)   Reading the article angered John

One might wonder what it is that requires a fact or state of affairs as the subject of such verbs instead of an intensional proposition. I hypothesize that the kind of causation that is expressed by psych-verbs indeed requires both an event and a description, i.e. an event under a description. The ultimate cause of the emotion must be something in the world, i.e. an event, but the way in which it takes effect is only by some sort of perception and cognitive processing (which need not be conscious). Thus, causation in this setting is mediated by a mental representation. It can be seen that this condition carries over to uses of psych-verbs with an NP subject. The causative psych-reading is to be distinguished from readings involving physical causation. For example, the verb *anger* does not lend itself to an interpretation in terms of physical causation:

(41)   a.   The article in the Times angered John
      b.   (?) The drugs angered John // cf. The drugs made John angry

So it can be seen that these verbs, in all their uses, are psych-causatives not merely in the sense that a psychological state is brought about: They moreover require that the causation is effected by cognitive contact, not by a physical one.

It can moreover be noticed that with NP subjects, an inferential process is often needed to interpret the sentence. This is to say, there are various senses in which the article can anger John. We could say: What was said in the article angered John; or: the fact that an article by some particular author was published in the Times angered John; etc. Likewise, example (41b) above could be made more or less acceptable by

construing it as saying: The fact that he found drugs in somebody's drawer caused anger in him. So what these paraphrases amount to is that some fact about the subject referent caused anger. (The flexibility of the interpretation of subjects with psych-verbs is also discussed in Zucchi 1993 with respect to the example *John's teeth surprised us).*

c. The Semantic Form of Causal Psych-Adverbs

Since there is a fairly close paraphrase relationship between causative psych-verbs and certain constructions with psychological adverbs, we can conclude that the conditions for the interpretation of those verbs also hold for the adverbial construction, which only expresses the resultant state while leaving the remainder of this psychological causation chain up to inference:

(42)   John read the article angrily.

Since the causation relation is tied to perception of a fact, the requirement that cause and effect must be cotemporal is explained. This overlap condition, which makes it so difficult to assign psych-verbs to any particular aktionsart category, is also one of the things that makes psychological adverbs so similar to depictives — over and above the fact that they make reference to an individual.

For the interpretation of the relevant cases of psychological adverbs, I implement these findings as a lexical extension of the adjectival meaning that is driven by context. This interpolated material is given as the underlined part in the representation (43):

(43)   a.   leave sadly
       b.   e (leave(e)(x) &   s [sad(s)(x) <u>& f   CAUSE s & f   leave(e)(x)]</u>)

As can be seen, the link between the adverb and the rest of the sentence consists in the formation of a factive entity from the content of the linguistic context. This seems to be necessary in view of the properties that the concept of psychological causation exhibits: The causal effects do not lie with the event per se, but with the subject's representation of this fact.

In sum, the comparison with causative psych-verbs has shown that psychological states are per default associated with a characteristic way in which they are brought about: This is the special relation that I have termed -causation, and this appears in psychological adverbs (of the causative type) and in verbal derivations from psychological states alike.

5.2.4. Adverbs of Motivation

Turning now to the second type of interpretation found with psychological adverbs, we can start out with the question of whether they can be treated exactly parallel to the causative ones. Let us introduce a relation that describes the connection between a psychological state and the action that is triggered by it, and call it "R_{motive}".

(44)   He angrily wrote a letter

   e   y letter(y) & [write(e)(x,y) &   s (angry(s)(x) & R_{motive}(s,e))]

Of course, the question is what kinds of entities this relation should take. For the causative adverb type, it was the appearance of transitive gerunds in paraphrases which indicated that the analysis had to look beyond events. For the present case, there is only one type of paraphrase available: Sentences with certain PPs seem to convey the same kinds of meanings as the adverbs:

(45)   a.   He angrily shouted at them
   b.   He shouted at them out of anger

If we compare these two fairly equivalent expressions, a curious difference can be found: Psychological adverbs with the "motivational" interpretation cannot occur in final position, and correspondingly, cannot be stressed:

(46)   a.   ? The boy returned to his parents hungrily // cf.: hungrily returned
   b.   # He shouted at them angrily   (only manner reading)

Given that the PP *out of anger* in (45b) seems to convey a very similar meaning, one would conclude that the semantics of motivational adverbs cannot provide an explanation for their positional restrictions. Moreover, the PP clearly behaves like an event modifier in terms of position and intonation, and therefore we have no good reason to assume that motivational adverbs are sentential adverbs. Another fact that adds to this puzzle is that motivational and causal psych-adverbs share the property of requiring cotemporality of the psychological state with the main event. Thus, (47a) cannot be used to describe a state of affairs like (47b) except if we assume that the anger persisted:

> (47) a.   I angrily wrote a letter to the editor
>
>   b.   Yesterday, an article in the Times angered me, so today I wrote a
>   letter to the editor

While the emotional episode that gives rise to an action may hold before the action, it seems to be required that part of the emotion overlaps with the action. Otherwise, the emotion could not be identified as the source of this behaviour. So all transparent psychological adverbs have been found to consist of a lexical core that describes a state, plus some sort of causal relation linking the state to an event. Crucially, the psychological state holds in the event.

In view of these commonalities, I think that the explanation for the different word order properties of motivational adverbs can only lie in the way in which the connecting relation is interpolated. One might hypothesize that there is an iconicity principle at play: The emotional episode that motivated an action, even if it has to overlap with the event, must have begun independently before the action. In other words, the motivational interpretation requires an initial overlap while the causative interpretation requires a final overlap (from the point of view of the event). Maybe the interpolation of the motivational relation is favoured if the predicates occur in the same order that is also the temporal order. However, it seems that the causative reading is less restricted in that there is no comparable ban on preverbal adverbs with the causal reading:

> (48)   He sadly discovered the solution to be incorrect

This question has to be left open for future research.

5.2.5. Summary: Transparent Psychological Adverbs

Let us turn to the positive results that we have gained concerning psychological adverbs. It has been argued that at least some uses of adverbs from psychological state adjectives can be explained by a mechanism of semantic interpolation that provides augmentations of the lexical meanings, according to contextual and world knowledge. This type of adverb, then, does not constitute an independent lexical variant. It is in fact a prediate of individuals, both in terms of its lexical-conceptual meaning and in the semantic composition. What is more, if the account is correct we have detected a class of event-related adverbs that denote a situation of their own. A feature that is shared by both types of these state-denoting adverbs is that the state is required to overlap with the event they modify. This is in line with, and partly explains, the intuition that adverbs denote some property that is present **in** the event. Since we have said that -causation implies cotemporality of the psychological state with the event that is its ultimate causer, it follows that the representations (43) and (44) have much in common with the interpretation of depictives. In fact, depictives have been found to carry an almost "adverbial" reading: Their interpretation is linked to the event variable of the verb. The difference between depictives and transparent adverbs lies merely in the fact that depictives assert the independence of an concurrent state while the adverbial forms assert the existence of a closer connection to the event.

The choice of CAUSE or MOTIVE as the semantic link obviously depends both on context and on stereotypical properties of the emotional states in question. For instance, anger is a state that is typically brought about by the experience of some event, and is in turn associated with a typical pattern of behaviour as a reaction to this. This information is certainly available as a background from which speakers make inferences. Correspondingly, the adverb *angrily* can be understood either way, depending on the sentential context. Maybe *sadness* typically results in resignation rather than in some action, and so the motivational reading is by far less common than the reading in which the state of sadness is the one that is caused. Nervousness is not typically conditioned by some concrete experience (the reason rather lies in some sort of anticipation); it is, however, associated with a very typical pattern of actions that

expresses it. Hence the adverb *nervously* only occurs with a motivational reading. These examples should suffice to illustrate how the contents of these adverbial constructions can be predicted on the basis of our world knowledge.

5.3. Manner Readings of Psychological Adjectives

In the discussion so far, the treatment of the manner variant has been left aside. It is now time to integrate the semantics of manner uses of emotional state adjectives into the picture.

The hallmark of the manner use has been considered in chapter 2 to be its intransparency with respect to the real occurrence of the inner emotional state. I suggest that this has to be captured by a "deep" lexical alternation that is more of the type of complementary polysemy. However, the literature does not contain any proposals that we could build on, as far as I can see. There are a few passages in Pustejovsky (1995) that mention problems that appear to be somehow related to this issue, though again it is only attributive modification with nouns that is at issue. Pustejovsky mentions an instance of lexical shift with *sad* that leads to uses like *sad story* etc. His explanation of its meaning as "a story which makes one sad" may be a bit simplistic, but a more important point is that this shift cannot be the one that underlies the manner use:

(49) a.   John walked sadly off the stage
      b.   walk-off(e) & sad(e)

If we used this reconstruction to describe the meaning of the adverb in (49b), we would end up saying: It is an event that makes one (the observer) sad. This is not what (49a) says. Curiously, this variant of *sad* could at best lead to an evaluative reading. I rather want to propose that the following two uses of *sad* constitute the core of the lexical variation that leads to manner uses:

(50) a sad man
      a sad face

In this example, we detect a systematic metonymical relation between an emotional state and its bodily expression. There is a certain degree of opacity in the relation because the expression is not identical to the emotional state, it is just systematically related to it. Hence, the meaning relation is one of metonymy. It is very systematic in this case, because we human beings are generally able to use particular indicators to learn about the mental state of others. Our capacity to read in the faces of the others is obviously innate, and it is not astonishing that this very deep connection is reflected in a polysemy pattern.

It is now easy to construct the manner reading of emotional predicates on the basis of this variant that refers to an indicator for a psychological state. What we need is an additional step of predicate transfer: *sad* in this sense can be applied to an event if we can infer that the event contains some externally visible indicator for the state of sadness. This is again a matter of inductive inferences. One example is the following:

(51) a. John walked sadly off the stage

  b. 1. "walk"   bodily movement

    2. bodily movement   posture

    3. posture is an indicator of emotions

Note also what happens when we try to interpret the following example:

(52) a. John left sadly

The manner reading is dependent on specific assumptions on what the leaving consists in. The first variant is:

(52) b. 1. "leave" can consist in walking

    2. "walking"   bodily movement, etc.pp as above

However, if our background assumption is that John is sitting in a plane and in this way leaves the country, we cannot construct a manner reading for *sadly*. I contend that under those circumstances, (52a) can only be understood as a transparent adverb with a causal semantics.

If this is on the right track, we see once more that manner modification is not an independent lexical meaning of its own: Note that the conceptual meaning on which the manner modifier is built is not a predicate of events. It is a predicate of an abstract thing that is a possible constitutive part of an event, or let us rather say, a possible part in an event script.

Chapter 6

Conclusion:
On Deriving Adverbial Readings of Adjectives

_____

At the outset of this work, I identified three sets of questions as the core questions for a lexical semantic analysis of neo-Davidsonian adverbs. In brief:

> (a) What is the regularity behind the alternation between x- and e-predication that is exhibited by so many adjectives?
>
> (b) Are there several different kinds of e-related adjectives ?
>
> (c) Is e-predication a notion that is precise enough to characterise manner adverbs, or is there some independent content to the notion of manner?

In concluding this work, I want to provide a synopsis of the results attained concerning these questions. Let me begin with questions (b) and (c), and close with (a).

6.1. Types of Event-related Adverbs

In view of the findings in the preceding chapters, a main distinction that we have arrived at is the one between "factive" and "purely eventive" adverbs. Factive adverbs exhibit some properties that make them appear as related to event adverbs, because, as argued in chapter 4, they make implicit reference to events. Another case in point were the causative psych-adverbs from chapter 5. Still, we are left with several groups of

purely eventive adverbs. In chapter 3, we saw contrasts between manner readings and resultative readings of the same lexical item. It is true that resultative adverbs could also be construed as modifiers of resultant states in many cases — some verbs, that is, specify a resultant individual along with a resultant state. However, there are other verbs that have a resultative meaning only because they indicate the creation of an object; with these, the state modifier analysis is doubtful. Therefore, it seems that we have to distinguish two types of adverbs which, by way of their types of lexical meanings, bear different relations to the event variable. Besides these latter two, chapter 5 also raised the question of whether we should distinguish a third type of event-related adverb, which could be called "circumstantial" ones: Depictive constructions are obviously interpreted with reference to the event argument of the verb, and the only thing that prohibits their grouping under adverbs is the morphological distinction between adverbs and depictives, a point that is especially clear for the psychological adjectives we have considered. It has also been mentioned, however, that there are other examples (such as *play the game barefoot)* that do not allow us to draw the same distinction so easily. Also, it may well be a matter of degrees whether a state that is concomitant to an event can be said to be independent of the event or to be connected to it by a characterising function.

6.2. Manner Modification

The investigation of the different classes of adjectives has shown that manner uses of oriented adverbs are often based on lexical meanings that do not specifically target events. Rather, in many cases manner modifiers have underlying lexical meanings by which they single out a particular constituent part of an event (which is not itself eventive). Notice how the difference between a resultative and a manner reading of the same adverb was explained in the example:

> (1)   She dressed elegantly
> > a.   ... elegant clothing
> > b.   ... elegant movements

Both adverbial readings derive their event reference from targetting a meaning component of the verb: the kinds of movements in the action of getting dressed, or the resultant collective object that consists in the outfit that the person wears afterwards. Although the latter variant does not fall under "manner" in a strict sense, it must be pointed out that the way it is derived is completely parallel to manner modification. Next, we have seen the case of agentive adjectives that target decisions of the agent in the course of an event; in this way, manner adverbs like *stupidly* or *carelessly* indirectly specify properties of subevents. Psychological manner adverbs like *sadly* were interpreted as being built on the predication of an "expression" in the face or the posture of a person, hence predication of a relatively abstract individual. (Finally, there is still an open question with respect to the circumstantial type of adverbial mentioned before: It might be possible to interpret the circumstantial state as another constituent part of a complex event; e.g. the state of the players that is expressed by *barefoot* could be viewed as integral part of the scenery of the whole play).

These considerations show that the conjunctive representation of intersective modification is a strong simplification: It glosses over the fact that modification is a relation that subordinates the lexical meaning of the modifier under the meaning of the verb. Remember the following example from chapter 4:

(2)   ? He forgot his passport absentmindedly

It is the subordinative character of modification that explains why no lexical interpretation of the adverb *absentmindedly* can be found (or at least, why it is so difficult to come up with one) that makes the sentence an acceptable instance of manner modification. Also remember from chapter 3 that the lexical status of manner modifiers must be taken into account even for getting the entailments right that result from sentences with adverbs — it is precisely the lexical status of modifiers which explains why the following entailment does not go through although it might be expected to do so on formal grounds:

(3)   wide(s) & open(s) & Theme(s)=the door
       —//   wide(s) & Theme(s)=the door

The reason why (3) fails is that there is a hidden parameter in the meaning of *wide,* which has the effect that *wide as of states* is not the same thing as *wide as of doors.*

In view of all these effects, it is advisable to draw a distinction between **concepts** and **properties** (as recently pointed out by Gärdenfors (2000)): Concepts — denoted by nouns and verbs — consist in bundles of properties that form their various "semantic dimensions" while properties — denoted by adjectives — are "one-dimensional" and single out a particular region of one such dimension. Something similar in spirit can be found in the use of the connecting relations that were employed in Blutner's (1998) lexical pragmatics model (sketched in chapter 2). The representations for adjectives from different lexical classes would have to differ in terms of the kind of intervening relation:

(4) a. The apple is red

$APPLE(d)$ & $PART(d,x)$ & $COLOUR(x,u)$ & $u=red$

b. The apple is sweet

$APPLE(d)$ & $PART(d,x)$ & $TASTE(x,u)$ & $u=sweet$

(The relation *PART* would then have to be specified to *PEEL* in the first, and *PULP* in the second case). Here, *COLOUR, TASTE* and many others serve to distinguish the different conceptual dimensions. On Gärdenfors' (2000) account, a concept is defined by the coocurrence of certain properties that are allowed to assume a certain range of values. Such models are usually introduced for the semantics of nouns (e.g. in Blutner's and Gärdenfors' works), and a satisfying model of the relevant meaning dimensions of verbs is still a desideratum. The problem that reappears here is nothing else but the question of the verbal "qualia"; this is the point where Pustejovsky's (1995) model of verb meanings was found inadequate in the discussion of chapter 2.

In any case, I hope that these considerations have provided a sketch of an answer to the question what the place of the notion "manner" is. It embodies the fact that modification is not just conjunction of two predicates but that the meaning of the modifier has to be integrated into the head's meaning as pertaining to one of its conceptual dimensions. It is now open for definition, which ones of the relevant meaning dimensions should be covered by "manner" and which ones should be excluded. We can safely assume that all events that imply a change of some sort specify a dimension of *SPEED,* and this is certainly a typical notion of a manner. Maybe

something like the succession of decisions in an agentive event can be taken as a further such dimension, this would then allow to integrate agentive adjectives into the picture; and so forth.

6.3. Types of x-/e-Alternations

After this outline of the general perspective that has emerged from this work, I turn to a brief summary concerning the concrete types of alternations, which constituted the major empirical starting point of this work. In chapter 1, I proceeded from a basic, threefold distinction with respect to directions of alternations:

> (a) Indifferent adjectives, which can apply to individuals (x) and events (e) without any lexical variation (e.g. *beautiful)*

> (b) Adjectives with an underlying meaning that qualifies events, which can be shifted to an x-predicating use (e.g. *fast)*

> (c) Adjectives with an underlying meaning that qualifies individuals, which can be shifted to an e-predicating use. These modifiers were called (individual-) **oriented** and they are the ones that played the central role in this work.

In a number of cases, the shift from x-predication to e-predication can be seen as an instance of lexical **predicate transfer** (Nunberg 1995). This means that the underlying lexical meaning targets one sort of entities, often individuals in a narrow sense, and allows a metonymic shift to predication of some other, larger, entity that contains the first, provided that the part obeys a pragmatic condition of being characteristic enough for the whole. This class of lexical processes was argued to underlie the alternations between:

> • Adjectives of external properties of things (like *heavy)* vs. resultative adverbs

> • Agentive adverbs / adjectives vs. their manner uses

> • Adjectives of "expressions" of psychic states vs. psychological manner adverbs.

In distinction to this, I arrived at the conclusion that the relationship between agentive adjectives and x-predicates of the IL-type, such as *stupid(ly),* constitutes a case of **complementary polysemy** (as introduced in chapter 2). The same relation obviously holds between the variant of psychological adjectives that predicates of persons and the one that predicates of "expressions". In both cases, we are dealing with a complex concept that unites different aspects under which it manifests itself. The two cases are

even similar in that in both of them, an inner condition of a sentient being is coupled with an outward expression by which it is accompanied or can be detected. This is the (strongly context-dependent) class of decisions that are characteristic for dispositions, on the one hand, and the (fixed) class of bodily expressions that signal emotions, on the other.

Finally, we have discovered a class of adverbs that denote a state of its own and predicate of individuals: the so-called transparent adverbs. The semantics of transparent adverbs differs from their adjectival base only by an additional clause that states a connection between the state and the event, in particular some sort of causal connection. Although this can be written as a lexical extension, too, it is clear that this is a much more superficial process of lexical shift.

References

Abney, Steven (1987): *The English Noun Phrase in its Sentential Aspect.* Ph.D. dissertation, MIT

Alexiadou, Artemis (1997): *Adverb Placement. A Case Study in Antisymmetric Syntax.* Amsterdam: Benjamins

Asher, Nicholas (1993): *Reference to Abstract Objects in Discourse.* Dordrecht: Kluwer

Bach, Emmon (1986): The Algebra of Events. *Linguistics & Philosophy ,* **9**, 5-16

Bayer, Samuel (1998): *Confessions of a Lapsed Neo-Davidsonian.* New York: Garland

Bellert, Irena (1977): On Semantic and Distributional Properties of Sentential Adverbs. *Linguistic Inquiry,* **8**, 337-351

Bierwisch, Manfred (1983): Semantische und konzeptuelle Repräsentation lexikalischer Einheiten. In: W.Motsch & R.Ruzicka (eds): *Untersuchungen zur Semantik.* Berlin: Akademie Verlag. pp. 61-99

Blutner, Reinhard (1998): Lexical Pragmatics. *Journal of Semantics,* **15**, 115-162

Bowers, John (1993): The Syntax of Predication. *Linguistic Inquiry,* **24**, 591-656

Carlson, Gregory & Jeffry Pelletier (eds) (1995): *The Generic Book.* Chicago: The University of Chicago Press.

Chierchia, Gennaro (1995): Individual-level predicates as inherent generics. In: Carlson & Pelletier (eds). pp.176-223

Chomsky, Noam (1986): *Knowledge of Language. Its Nature, Origin and Use.* New York: Praeger

Cinque, Guglielmo (1994): A Null Theory of Phrase and Compound Stress. *Linguistic Inquiry,* **24**, 239-298

Cinque, Guglielmo (1999): *Adverbs and Functional Heads. A Cross-Linguistic Perspective.* Oxford University Press

Costa, João (1996): Adverb positioning and V-movement in English: Some more evidence. *Studia Linguistica,* **50**, 22-34

Déchaine, Rose-Marie (1993): *Predicates Across Categories.* Ph.D. dissertation, Univ. of Massachusetts, Amherst

Dowty, David (1979): *Word Meaning and Montague Grammar.* Dordrecht: Reidel

Dowty, David (1991): Thematic Proto-Roles and Argument Selection *Language* **67**, 547-619

Eckardt, Regine (1997): *Adverbien, Ereignisse und anderes.* Talk, presented at the workshop "Adverbs and Aspect", Wuppertal 5.7.97

Eckardt, Regine (1998): *Events, Adverbs, and Other Things.* Tübingen: Niemeyer

Ernst, Thomas (1998): *Manners and Events.* Ms., Rutgers Univ.

Gärdenfors, Peter (2000): *Conceptual Spaces. The Geometry of Thought.* Cambridge MA: MIT Press.

Geilfuß-Wolfgang, Jochen (1995): Gewisse Satzadverben und Assoziation mit Fokus. In: Inga Kohlhof, Susanne Winkler & Hans Bernhard Drubig (eds): *Proceedings of the Goettingen Focus Workshop.* Arbeitspapiere des Sonderforschungsbereichs 340, Univ. Tübingen/Stuttgart. Report Nr. 69 - 1995. pp.35-47

Goscinny, René & Albert Uderzo (1965): *Le tour de Gaule d'Astérix.* Paris: Dargaud Éditeur

Grimshaw, Jane (1990): *Argument Structure.* Cambridge MA: MIT Press

Haider, Hubert (1992): Branching and Discharge. *Arbeitspapiere des SFB 340,* Nr. 23. Univ. Stuttgart

Haider, Hubert (1993): *Deutsche Syntax — generativ.* Tübingen: Narr

Haider, Hubert (1997): Precedence Among Predicates. *The Journal of Comparative Germanic Linguistics,* **1**, 3-41

Hamann, Cornelia (1991): Adjectives. In: Arnim v. Stechow & Dieter Wunderlich (eds): *Semantik. Ein internationales Handbuch der zeitgenössischen Forschung.* Berlin: de Gruyter. pp.657-673

Higginbotham, James (1983): The Logic of Perceptual Reports: An Extensional Alternative to Situation Semantics. *Journal of Philosophy,* **80**, 100-127

Higginbotham, James (1989): Elucidations of Meaning. *Linguistics and Philosophy* **12**, 465-517

Hitzeman, Janet (1993): *Temporal Adverbials and the Syntax-Semantics Interface.* Ph.D. dissertation, Univ. of Rochester

Jackendoff, Ray (1972): *Semantic Interpretation in Generative Grammar.* Cambridge MA: MIT Press

Jackendoff, Ray (1977): *X'- Syntax.* Cambridge MA: MIT Press

Johnson, Kyle (1991): Object Positions. *Natural Language and Linguistic Theory,* **9**, 577-636

Johnston, Michael (1994): *The Syntax and Semantics of Adverbial Adjuncts.* Ph.D. dissertation, Univ. of California, Santa Cruz

Kamp, J.A.W. [= Hans] (1975): Two Theories about Adjectives. In: Edward Keenan (ed): *Formal Semantics for Natural Language.* Cambridge: Cambridge University Press. pp.123-155

Kamp, Hans & Uwe Reyle (1993): *From Discourse to Logic.* Dordrecht: Kluwer

Klein, Ewan (1980): A Semantics for Positive and Comparative Adjectives. *Linguistics & Philosophy,* **4**, 1-45

Klein, Wolfgang (1994): *Time in Language.* London: Routledge

Klein, Wolfgang (1997): *An Analysis of the German Perfekt.* Ms., Max-Planck-Institut für Psycholinguistik, Nijmegen

Kratzer, Angelika (1994): *The Event Argument and the Semantics of Voice.* Ms., Univ. of Massachusetts, Amherst

Kratzer, Angelika (1995): Stage-level and Individual-level Predicates. in: Carlson & Pelletier (eds). pp. 125-175 (publication of the 1988 Manuscript)

Kratzer, Angelika (1996): *The Semantics of Inflectional Heads.* Course Materials, 1996 Girona International Summer School in Linguistics.

Krifka, Manfred (1989): *Nominalreferenz und Zeitkonstitution. Zur Semantik von Massentermen, Pluraltermen und Aspektklassen.* München: Fink

Larson, Richard (1988): The Structure of the Double Object Construction. *Linguistic Inquiry,* **19**, 335-391

Larson, Richard (1998): Events and Modification in Nominals. In: Devon Strolovitch & Aaron Lawson (eds.): *Proceedings from SALT VIII.* Ithaca NY: Cornell University. pp.145-168

Larson, Richard & Gabriel Segal (1995): *Knowledge of Meaning: An Introduction to Semantic Theory.* Cambridge MA: MIT Press

Legendre, Géraldine (1997): Secondary Predication and Functional Projections in French. *Natural Language and Linguistic Theory,* **15**, 43-87

Levin, Beth (1993): *English Verb Classes and Alternations. A Preliminary Investigation.* Chicago: The University of Chicago Press

Levin, Beth & Malka Rappaport Hovav (1995): *Unaccusativity.* Cambridge MA: MIT Press

Link, Godehard (1998): *Algebraic Semantics in Language and Philosophy.* Stanford: CSLI Publications

McConnell-Ginet, Sally (1982): Adverbs and Logical Form: A Linguistically Realistic Theory. *Language,* **58**, 144-184

Nunberg, Geoffrey (1995): Transfers of Meaning. *Journal of Semantics,* **12**, 109-132

Parsons, Terence (1990): *Events in the Semantics of English.* Cambridge MA: MIT Press

Pesetsky, David (1995): *Zero Syntax. Experiencers and Cascades.* Cambridge MA: MIT Press

Pustejovsky, James (1991): The Syntax of Event Structure. *Cognition,* **41**, 47-81

Pustejovsky, James (1995): *The Generative Lexicon.* Cambridge MA: MIT Press

Quirk, Randolf et al. (1985): *A Comprehensive Grammar of the English Language.* London: Longman

Radford, Andrew (1988): *Transformational Grammar.* Cambridge: Cambridge University Press

Ramat, Paolo & Davide Ricca (1998): Sentence Adverbs in the Languages of Europe. In: Johann van der Auwera (ed): *Adverbial Constructions in the Languages of Europe.* Berlin: Mouton de Gruyter. pp. 187-275

Roberts, Ian (1987): *The Representation of Implicit and Dethematized Subjects.* Dordrecht: Foris

Roberts, Ian (1988): Predicative APs. *Linguistic Inquiry,* **19**, 703-710

Rooth, Mats (1992): A Theory of Focus Interpretation. *Natural Language Semantics,* **1**, 75-116

Scalise, Sergio (1984): *Generative Morphology.* Dordrecht: Foris

Stechow, Arnim v. (1993): Die Aufgaben der Syntax. In: Joachim Jacobs et al. (eds): *Syntax. Ein internationales Handbuch zeitgenössischer Forschung* Berlin: deGruyter. Vol. 1, pp.1-88

Stechow, Arnim v. (1996): The Different Readings of *Wieder* 'Again': A Structural Account. *Journal of Semantics,* **13**, 87-138

Stump, Gregory (1985): *The Semantic Variability of Absolute Constructions.* Dordrecht: Reidel

Thomason, Richmond & Robert Stalnaker (1973): A Semantic Theory of Adverbs *Linguistic Inquiry,* **4**, 195-220

van Voorst, Jan (1992): The aspectual semantics of psychological verbs. *Linguistics & Philosophy,* **15**, 65-91

Vendler, Zeno (1967): *Linguistics In Philosophy.* Ithaca NY: Cornell University Press

Vendler, Zeno (1984): Adverbs of Action. In: David Testen et al (eds): *Chicago Linguistic Society 20. Papers from the Parasession on Lexical Semantics.*

Wierzbicka, Anna (1992): Defining Emotion Concepts. *Cognitive Science,* **16**, 539-581

Winkler, Susanne (1997): *Focus and Secondary Predication.* Berlin: Mouton de Gruyter

Wunderlich, Dieter (1997): Argument Extension by Lexical Adjunction. *Journal of Semantics,* **14**, 95-142

Wyner, Adam (1994): *Boolean Event Lattices and Thematic Roles in the Syntax and Semantics of Adverbial Modification.* Ph.D. dissertation, Cornell University

Wyner, Adam (1997): *On Factive Adverbials* Talk presented at "Sinn & Bedeutung 1997", Berlin, 7 Dec 1997

Wyner, Adam (1998): Subject-oriented Adverbs are Thematically Dependent. In: Susan Rothstein (ed): *Events in Grammar.* Dordrecht: Kluwer. pp. 333-348

Zagona, Karen (1990): *Mente* Adverbs, Compound Interpretation, and the Projection Principle. *Probus,* **2**, 1-30

Zucchi, Alessandro (1993): *The Language of Propositions and Events.* Dordrecht: Kluwer