ADVERBS IN CONCEPTUAL SEMANTICS

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The following packages have been used. They are available from the Comprehensive TEX Archive Network (`http://ctan.org/`).

`array`	`ean13isbn`	`ifmtarg`	`natbib`	`tabularx`
`babel`	`fancyhdr`	`inconsolata`	`nextpage`	`textcomp`
`bibentry`	`fixme`	`isodate`	`optional`	`tikz/pgf`
`bookmark`	`fnbreak`	`linguex`	`pifont`	`url`
`booktabs`	`fontenc`	`microtype`	`setspace`	`varioref`
`calc`	`geometry`	`minionpro`	`stmaryrd`	`verbatim`
`caption`	`hyperref`	`mnsymbol`	`subdepth`	`xmpincl`

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Typographic conventions

Italics
For expressions and sentences (when not displayed as examples); variables; emphasis.

"Double quotation marks"
For meanings; quotations from other authors; scare quotes.

Bold type
For meanings in formal representations.

Small capitals
For conceptual strucures (and parts thereof).

{Curly brackets}
For abbreviating multiple examples: *a* {*b* | *c*} stands for *a b* and *a c*; {*a*} *b* {*c*} stands for *a b* and *b c*.

Lambda: $\lambda x[\ldots x \ldots]$
For representing functions; sets; complex conceptual structures.

Inverse iota: $\imath x[\ldots x \ldots]$
For the definite description operator: "the *x* such that $\ldots x \ldots$"

Other authors' representations have been modified to achieve unified representations, but originals are given in footnotes. Event descriptions are given in a relational form $P(x, e)$ instead of $P(e) \wedge \theta(x, e)$ [or $\theta(e) = x$] for the meaning "*e* is a *P*-type event with *x* as a participant". Where there are entities like manners included in the ontology, these are represented explicity by variables: $\imath m[\textbf{manner-of}(m, s)]$ instead of **manner-of**(*s*) or $\imath m[\textbf{manner-of}(s) = m]$. Arguments to predicates are represented as a comma-separated list within parentheses behind the predicate symbol, and not in a form that shows order of combination: $P(x, y)$ instead of $P(x)(y)$ or $P(y)(x)$ [or Pyx or Pxy]. Possible world arguments are notated differently: $P_w(x)$, not $P(x, w)$.

1

Introduction

1.1 Motivation and outline

The title of this thesis is misleading in two ways. *Adverbs* is too general, since only a few subclasses of adverbs will be treated, and *Conceptual Semantics* is too specific, since a number of other semantic theories will figure in the discussion as well.

The background observation which has partly motivated this work is the recognition that adverbials in natural language are very diverse. (I use the term *adverbial* for clause constituents that do not have any of the core functions such as predicator or complement (subject, objects and predicative complements.)) They are diverse both in the sense that to properly describe e.g. the syntax of adverbials, one has to also involve semantic, communicative and phonological properties in the description (or that is my view at least), and they are diverse in the sense that all these properties can vary quite dramatically from one kind of adverbial to another. Adverbials thus constitute an important object of study for those who are interested in the interfaces between different levels of linguistic structure.

From a semantic viewpoint, adverbials are interesting since much of the machinery used in formal semantic analyses has roots in the description of formal languages, where the notion of adverbial does not play a prominent role. We do not find analogues of adverbials such as discourse markers (*you know*), utterance modifiers (*with all due respect*), hedges (*kind of*) and evaluatives (*luckily*) in mathematical formulas. Although this does not mean that the machinery of predicate logic is inadequate for representing the semantics of adverbials, it does mean that the descriptions of them are done with tools that are not custom-made for the job, which may have implications for the elegance of the result.

In my view, Conceptual Semantics is a promising framework for the

description of adverbials since it places great emphasis on accounting for the interactions and interrelations between different levels and sub-levels of linguistic structure, as well as on situating the theory of linguistic knowledge within a research program that also extends the object of study to other mental and social abilities.

Although the diversity of adverbials forms part of the motivation of this study, it is obviously too intractable to be handled in its full glory. As the title of the thesis suggests, attention will be restricted to adverbials with the form of adverbs. It is intended that it will be possible to extend the analyses fairly unproblematically to adverbials with other types of internal structure but with the same external function as those investigated here, but this issue will not be examined. The attention will be restricted to two general classes of adverbs.

The first is the class of manner adverbs (discussed in Chapter 2). The analyses discussed with respect to this class are generally meant to apply to predicate-oriented adverbs of other semantic categories as well, but the focus will be on examples that at least by some classifications are treated as involving manner modification.

The second class (discussed in Chapter 3) contains a set of adverbs (like *cleverly* and *rudely*) which have both a manner use (functioning at the representational level) and an evaluative use (at the interpersonal level), where they do not so much describe a state of affairs as supply a comment or evaluation of it.

These classes have both sub-classes and neighbouring classes with many semantic and syntactic similarities, but also interesting differences. With respect to predicate-oriented modification, we can mention such sub-groups as adverbs of degree (*completely*) and adverbs of degree of perfection (*perfectly*) (Eckardt 1998: 159), which in some respects are similar to manner adverbs like *loudly* or *softly*, but also different in important respects. With respect to the participant-oriented adverbs examined in Chapter 3, the phenomena where an adverb has two uses, one more towards the representational level and one more towards the interpersonal, applies more generally (in English, at least) to classes of adverbs of many semantic categories different from those in the restricted set studied here. Explicitly addressing the similarities and differences between all these categories would be very much in the spirit of the approach advocated here, but it is not what will be

done. Instead, we will keep a restricted focus on the classes of manner adverbs and participant-oriented evaluatives, and discuss the differences and similarities that can be found in theoretical representations and analyses of these. This gives the present study a rather strong meta-theoretical character. This choice is motivated by the ideal of a cumulative science, the desire to relate the present approach to others on the market, and to make the study of potential interest also to those who are completely uninterested in Conceptual Semantics and the specific analyses proposed here.

Conceptual Semantics, a framework which the reader's familiarity with is not taken for granted, will be presented in the next section. The description is quite general, and many points will not be of crucial importance to the phenomena studied here.

1.2 Introduction to Conceptual Semantics

Conceptual Semantics is a semantic framework developed mainly by Ray Jackendoff. The most important descriptions of the theory can be found in (Jackendoff 1983, 1990, 2002: chs. 9–12). The theory was introduced with the label *Conceptual Semantics* in (Jackendoff 1983), but earlier work (e.g. Jackendoff 1972, 1976) also fit within the general program. Some important features are introduced in (Jackendoff 1991, 1996b) (collected with other articles in (Jackendoff 2010)) and (Jackendoff 2009).[1]

Conceptual Semantics shares many features with other theories, both in the goals and basic assumptions and in the models used. Examples of some frameworks with many affinities are Cognitive Grammar/Semantics (see issue 7(1) (1996) of *Cognitive Linguistics*) and Construction Grammar (see (Nikanne 2005), as well as the papers collected in (Jackendoff 2010: chs. 7–12)). A much more extensive listing of related frameworks is given in (Jackendoff 1996c: 542f), and some are mentioned in the other references given above.

1 For some works by other authors putting Conceptual Semantics to use and proposing modifications, see e.g. (Pinker 1989, Nikanne 1990, Butt 1995).

1.2.1 General description; objectives and assumptions

Conceptual Semantics is a intensionalist theory: The primary task is not to relate linguistic expressions directly to things in the world, but to relate expressions to whatever it is in our cognitive makeup that makes these meaningful to us (meanings, intensions, or just mental structure). Then there is the partly separate issue of linking these structures to phenomena in the external world, a linking which is made possible and constrained by our general perceptual and cognitive abilities, eventually to be connected to the structure of our bodies and brains.

Paying attention to the boundaries between linguistic semantics and other aspects of cognition means that our model of linguistic meaning must be compatible with what we know of categorisation in general. This means that a set-theoretic model that relates expressions to sets of referents or to functions from possible worlds to such sets is unsatisfactory. It is necessary to account for the pervasive existence of different kinds of gradience, which Conceptual Semantics captures through the notions of centrality conditions (e.g. a focal value for color terms) and preference rule systems (e.g. for cluster concepts such as *game*, *climb*, etc.), see (Jackendoff 1983: ch. 8; 2002: 350–356).

Another aspect of the psychological boundary condition is that linguistic meanings have to be connected with the world through the senses. An analysis of the linguistic–spatial interface employing a physiological model of visual perception is given in (Jackendoff 1987: chs. 9–10; 1996a).

Related to the objective of a Conceptual Semantics that can be integrated coherently with neighbouring domains is a general principle of representation which says that things that are separate should be represented separately, and connected to each other where necessary. On the linguistic side this is represented through a model of the organisation of language called The Parallel Architecture (Jackendoff 1997, 2002, Culicover & Jackendoff 2005), where there is a primary distinction between the syntactic, semantic and phonological levels, and where each level can be further subdivided (a separate grammatical function tier, the tiers of Autosegmental Phonology, etc.). In the attempt to unify these different aspects of language in the formal model, the focus is directed to describing how the different representations of separate

phenomena should be linked together, rather than attempting to put all the information in a single representation consisting of a small set of primitive elements and modes of combination.

One feature that distinguishes Conceptual Semantics from many other theories with an architecture that consists of of parallel levels (e.g. Lexical-Functional Grammar and Role and Reference Grammar) is that in Conceptual Semantics the semantics "module" is also further subdivided into levels or tiers, going beyond the standard distinction between a propositional level and a level of information packaging or communicative organisation. (Meaning-Text Theory also has separate structures in the semantic representation for referential and rhetorical aspects of meaning (Meľčuk 2001), although I am not aware of any works that specifically describe these levels.)

One level of representation which is motivated by the interfaces to the perceptual modalities is the *Spatial Structure*, an abstract representation of spatial configuration that combines input from the different perceptual modalities (vision, tactile sensation, proprioception). This is an important level for categorisation, and maybe the proper level for distinguishing between e.g. different types of movement verbs (*crawl*, *wiggle*, *zigzag*), whose exact semantic content crucially makes reference to spatial configurations.

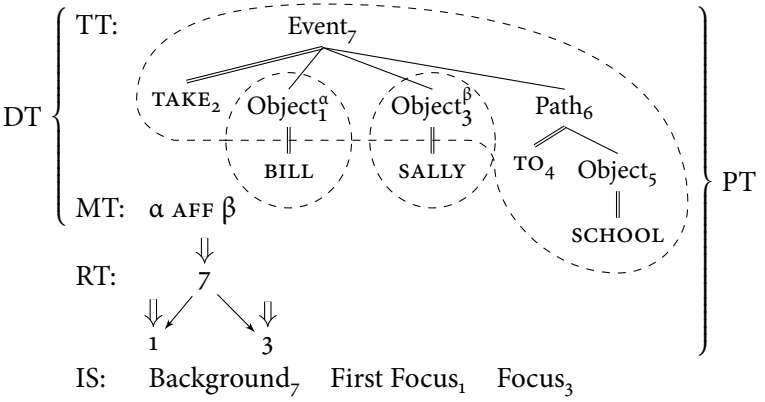
The proper "semantic" level, where we find most of the aspects of meaning that are grammatically relevant, and which is thought to be the level where inferences can be formally captured, is the level of Conceptual Structure.

1.2.2 *The structure of Conceptual Structure*

Tiers

The Conceptual Structure (CS) consists of a *propositional tier*, where the main content is represented, and an *information structure tier*, which specifies the communicative function of this content in terms of values such as Topic, Background and Focus (Jackendoff 2002: ch. 11). The propositional structure can be further subdivided into the *descriptive tier*, where lexical meanings are found, and a *referential tier* (Jackendoff 2002: ch. 11), where referential commitments are represented as well their dependencies (e.g. irrealis contexts) and scope (of quantificational

(1) S/P: $[_S$ BILL$_1$ $[_{VP}$ took$_2$ SALLY$_3$ $[$to$_4$ school$_5$ $]_6$ $]$ $]_7$



elements). The descriptive tier is divided into the *thematic tier*, which specifies situations in terms of the participants and properties involved and their relations (function–argument structure and modification) and a *macrorole tier* (Jackendoff 2009: ch. 6) (called the *action tier* in (Jackendoff 1990)), which represents cruder and more abstract distinctions such as the actor–undergoer distinction ("who acts" and "who is affected"), and the distinction between dynamic acting and passive experiencing (*looking* vs. *seeing*).
These distinctions are represented in (1), adapted from Jackendoff's analysis of the first clause in (2).

(2) BILL took SALLY to school, and FRANK took PHIL there.
(Jackendoff 2002: 415)

The first line in (1) is a simplified representation of the syntactic and phonological structure, and the interrelations between the levels are indicated with numeric subscripts. The structure of the thematic tier will be discussed further below, but it can be noted that the Greek letters represent the CS binding relation, which in this example shows that the CSs BILL and SALLY appear both on the thematic tier and the macrorole tier. The AFF function shows the actor–undergoer relation that Bill is "acting upon" Sally. The double arrows on the indices on the referential tier indicate the referential commitments associated with

the assertion (for the event) and the definite character of the proper names (Jackendoff 2002: 399f), and the single arrows show dependency relations between the event and its participants (the participants have existence independent of the event but not vice versa). The dashed lines around parts of the tree indicate information packaging, and the information structure values are indicated on the line labelled *IS* (the First Focus is what some call a *contrastive topic*). The Background (called *Common Ground* by Jackendoff (2002: 413)) is the content in the largest dashed area, but with the content of the two Focus-constituents "carved out" and replaced by variables ("someone took someone to school").

Ontological categories

CSs belong to different *ontological categories*, which are quite different from the standard types we find in formal semantics analyses, both with respect to their metaphysical status and their motivation. The metaphysical impact of the ontological categories of CSs is not that these correspond to types of entities in the external world, but to entities in speakers' conceptualisations of the world. If there is evidence that speakers carve their conceptual space up in a particular way, then this is evidence for postulating categories that match this organisation. These categories are noncommittal as to the "real" structure of the world, which could consist of a totally unstructured collection of mass/energy or whatever.

Among the important conceptual categories are Material, Situation, Property, Space, Time and Amount. The "objects" of sense impressions like sounds, smell and tactile sensations could also be grouped in their own categories. Some of these categories are used in extensional model-theoretic treatments as well, but lacking from the Conceptual Semantics inventory are the types of truth-values and possible worlds. The set-theoretic formalisation of the categories is also completely absent. The mentioned categories are not meant to be exhaustive or final; they are a working hypothesis, and there is no fundamental problem in proposing new categories or removing/restructuring the existing ones if the evidence supports it.

The dot-object types of Pustejovsky (1995) are incorporated in Conceptual Semantics, and are useful for multifaceted concepts like

BOOK (type Object·Information), since a book is both a physical object (*This book has a leather cover*) and a container of information (*and is about Napoleon*).

In the tree notation seen in (1), the ontological category labels the top node of a CS constituent. Otherwise they are notated as subscripts on square brackets that enclose the constituent as in (4) and (5) (in (Jackendoff 1983) the category is represented as a value in the matrix format).

Features

Aspectual features The ontological categories are not completely unstructured entities. An important property is that they can be further divided into subclasses, separated by the values of a set of *aspectual features*. These are quite general conceptual features, and they can cut across the basic ontological categories. Short discussions of these aspectual features are found in (Jackendoff 1983: 246f, n. 9; 1990: 27–32), and they are developed in detail in (Jackendoff 1991, 1996b). Features of dimensionality, ±*internal structure* and ±*bounded* account for the notions of extension, plurality and boundedness, which are involved in the categories Material, Space and Situation. These can be thought of as super-categories consisting of sub-categories that differ in their values of aspectual features. Material (or Archi-Object) encompasses categories for individuals and mass concepts, Situation encompasses the aspectual classes of states, processes, etc., and Space encompasses categories for location, and bound and unbound paths.

The ontological categories can also be subdivided by other types of features. One example of a subcategory that is not aspectually defined is the category of Action, which is related to the functions on the macrorole tier. Actions are those events that are suitable in the frame *what* X *did was* … (Jackendoff 1983: 179ff). An important class of actions are those that can be performed intentionally, but not all Actions need to include volition (*what the rock did was roll down the hill* (Jackendoff 1995).

Referential features Jackendoff (1983) marks the conceptual constituents as to whether they represent a type or a token. This can be thought of as a referential feature, or with the introduction of the

referential tier, as a linking to a referential index there. Definiteness is another aspect of meaning that can be represented as a referential feature.

"Perceptual" features Jackendoff (1987: ch. 15; 1997: ch. 8) proposes a set of features that are relevant for the psychological study of percepts, concepts and consciousness (see also 2002: 310–314; 2009: 87–98). He proposes classes of *descriptive features*, which are the actual content of percepts, *modality features*, which differentiate the sense modalities, and *valuation features*, which describe the "feel" or "affect" associated with experiences, e.g. ±*external* separating visual imagery from experience, and ±*committed* separating e.g. belief/disbelief from the entertaining of a proposition.

Function–argument structure

The core part of a conceptual constituent is a *function* and its *arguments*. Functions can be of arity 0, which is the case for non-relational Objects like ROCK or APPLE. The function determines the type of the CS, and its arguments are themselves typed constituents. Some functions operate across semantic fields, which are represented by *field features*. An example is the State-function BE, which is involved in the semantic fields of spatial location, possession, property ascription and temporal location, as seen in (3). The function BE is not the meaning of the English word *be*; it is a conceptual primitive that is not expressible as a lexical unit, analogous to distinctive features in phonology.

(3) a. The cat is on the mat.
b. The hat is John's.
c. The hat is blue.
d. The party is on Friday.

In addition to the function and its arguments, a CS can contain other constituents as modifiers. Modifiers contribute characterisations that do not express necessary participants specific to the concept denoted by the head function.

In the tree notation, the semantic function is linked with a double solid line, arguments with a single solid line, and modifiers and features are linked with dashed lines. An alternative notation is the

matrix format in (4), where the arguments figure in a parenthesised list behind the function, and modifiers and features appear on separate lines. Macrorole information is not distinguished graphically from modifiers in this format. In the simpler linear format in (5), modifiers and features are separated by semicolons.

(4)
$$\left[\begin{array}{ll} & \textsc{function}(\textsc{argument}, \ldots) \\ & \textit{[macrorole tier]} \\ & [_{\text{Category}}\ \textsc{modifier}] \\ \text{Category} & \ldots \end{array}\right]$$

(5) $[_{\text{Category}}\ \textsc{function}\ (\textsc{arg}, \ldots);\ \textsc{mod}, \ldots;\ \textsc{feature}, \ldots]$

Complex CSs can be represented using the lambda notation seen in (6), which denotes the property of being an x in a situation of the type F.

(6) $[_{\text{Property}}\ \lambda x\ [_{\text{Situation}}\ F(y, x)]]$

2

Modification and manner

2.1 Background: predicate-oriented modification

2.1.1 Introduction

There is no established standard for how to represent modification in formal semantic descriptions. Most such models are based on the primary opposition inherited from predicate logic between semantic *predicates* and *arguments*, but for many modifiers it is not evident how they fit into this opposition.

The problem is not that modification cannot be represented with predicate–argument relations, but that there are many different relations that make sense. For example, take the adverb *softly* in the phrase *hit the donkey softly*. In one conception, *softly* has a predicate function with respect to *hit*. The adverb modifies the meaning of its argument, and forms a complex meaning "hit softly". But in another conception, *hit* and *softly* have parallel functions, since both say something about a particular state of affairs. *Hit* expresses that there was hitting involved, and *softly* expresses that some contact was involved which was without force or violence. Here, both the verb and the adverb are predicates that take a situation as an argument, which they describe. But *softly* could also be seen to have a function which parallels that of *the donkey*. *Hit* expresses the concept of hitting, and this concept contains different aspects which can be further specified. *The donkey* describes the participant receiving the hitting blow, and *softly* describes the force of the blow. This interpretation suggests a representation where both *the donkey* and *softly* are arguments to the predicate *hit*. All of these interpretations make sense from some perspective, and we will see that all these types of predicate–argument relations have been proposed in formal representations in the literature.

The notion of "manner" figures prominently in descriptions of

predicate-oriented adverbial modification, but as is often remarked, it is difficult to define in detail (the possibilities of paraphrase with *manner/way* and questioning with *how* often figure in delineations of the category). In the next section, we will look in more detail on some of the proposals that have been put forward, and against this background we will discuss some issues related to manner modification from a Conceptual Semantics perspective (§ 2.2 on page 29).

We will specifically focus on manner modification, but in some accounts there is no formal distinction between this and other types of modification, so the representations given are not necessarily meant to be restricted exclusively to the semantic category of manner. The proposals will be discussed in chronological order, and the major features that will focused on are what the ontology consists of, and what the proposed predicate–argument relations are.

Much of the discussion of adverbial modification in the literature has been made from a logical perspective. Some issues that have been important in this respect are the facts that many adverbs have the subset property (the denotation of *run slowly* is a subset of that of *run*) and that many adverbs are extensional (co-referring expressions within their scope can be substituted while conserving truth). These and other logical issues will not be in focus in the discussion here.

Many of the approaches described are also summarily (but insightfully) presented by Piñón (2008), and the reader is referred to the cited works for more critical discussion of specific proposals (e.g. (Ernst 1984)).

2.1.2 *Some approaches to manner modification*

Reichenbach (1947)

Reichenbach (1947: § 53, 301–310) discusses two alternative forms of representing adverbs that function as predicate-oriented modifiers. One is used in the formula in (2), where **slow** is a second-order property of properties. A paraphrase of *x moves slowly* in line with this analysis is "*x* has a specific property which is included in the class of motion-properties and in the class of slow properties". (It should be noted that speed is a scalar concept, and an ascription of slowness to something is not an absolute ascription but one that is relative to a certain scale

or standard of comparison. The determination of this standard will be left aside here, and standards will not be represented in what follows where scalar concepts are involved.)

(1) **moves**(x) $\equiv \exists P[P(x) \wedge \textbf{motion}(P)]$[1]

(2) **moves-slowly**(x) $\equiv \exists P[P(x) \wedge \textbf{motion}(P) \wedge \textbf{slow}(P)]$[2]

The other form of representation that Reichenbach (1947) proposes is given in (4), where the so-called "fact-function" is used. The two forms of representation are related to two possible (and logically equivalent) ways of describing a situation: through *thing-splitting*, where properties are ascribed to things, and *event-splitting*, where properties are ascribed to events (or facts – Reichenbach uses *fact* and *event* as synonyms). The fact-function relates events to their thing-splitting formulas, such that v in **event-of**(v, ϕ) denotes an occurrence of the situation described by the proposition ϕ.[3] In the event-splitting interpretation, (3) can be represented by the formula in (4).

(3) Anette dances beautifully. (Reichenbach 1947: 306)

(4) $\exists P[P(\textbf{anette}) \wedge \textbf{dancing}(P)$
$\wedge \textbf{beautiful}(\iota v[\textbf{event-of}(v, P(\textbf{anette}))])]$[4]

Reichenbach is not completely satisfied with the formula in (4) as a representation of manner modification, however, since it does not relate the predication of beauty to the specific dancing-property P. This form of logical translation could also be used if the predicate **beautiful** was replaced with a predicate meaning "led to a war", which does not specify a property that is specific to the manner of dancing. When a sentence with an adverb is interpreted as in (4) it must also be understood to be supplemented with a statement that there exists a

1 $m(x_1) =_{Df} (\exists f) f(x_1).\mu(f)$ (Reichenbach 1947: 302)

2 $msl(x_1) =_{Df} (\exists f) f(x_1).\mu(f).\sigma(f)$ (Reichenbach 1947: 303)

3 Reichenbach uses the notation $[\phi]^*$ to represent the fact-function applied to the formula ϕ. In his notation, $[\phi]^*(v)$ corresponds to **event-of**(v, ϕ) in the notation used here.

4 $(\exists f) f(x_1).\delta(f).bt\{(\iota v)[f(x_1)]^*(v)\}$ (Reichenbach 1947: 307)

connection between the dancing-property and the predication of the dancing-event as beautiful.

Reichenbach (1947) does not give an interpretation of the adjective *slow* predicated of nouns such as *speed*, but he does give a formula for *slow* predicated of a thing x, which says that those specific properties that apply to x and are of the relevant sort (e.g. "properties involving a change in time") are slow-properties (properties contained in **slow**).

Davidson (1967)

Davidson argues that the logical form of action sentences should include a variable for the event that is described. Whereas Reichenbach proposes two different but equivalent ways of describing a situation, Davidson proposes a single logical form with predicates that relate things and events directly.

Modifiers of various kinds can then be seen simply as predicates that take event variables as arguments. A Davidsonian analysis of Reichenbach's example (3) could have the form given in (5) – or (6) using the so-called neo-Davidsonian format – where the participants are introduced by separate predicates that indicate their thematic roles.

(5) $\exists e[\textbf{dance}(\textbf{anette}, e) \wedge \textbf{beautiful}(e)]$[5]

(6) $\exists e[\textbf{dance}(e) \wedge \textbf{agent}(\textbf{anette}, e) \wedge \textbf{beautiful}(e)]$

A form of representation using predicates of event variables is perhaps the most widely used format in the semantic descriptions of adverbials. Among the authors using variants of this representation we find Bartsch (1976), Wyner (1994), Eckardt (1998), Ernst (2002), Geuder (2002) and Schäfer (2005).

5 Davidson does not discuss this specific example, but one sentence he does propose a logical form for is *I flew my spaceship to the Morning Star*:

(i) $(\exists x)(\text{Flew}(\text{I}, \text{my spaceship}, x)\ \&\ \text{To}(\text{the Morning Star}, x))$
(Davidson 1967: 93)

Parsons (1970)

Parsons (1970) advocates the predicate operator analysis of (adverbial) modifiers, a proposal which is also developed by Clark (1970), Montague (1970), Thomason & Stalnaker (1973) and Kamp (1975). Parsons gives two objections to the analysis of Reichenbach (1947) (which also apply to that of Davidson (1967)).

One is that the format used to represent the meaning of predicate modifiers like *slowly* cannot be used for adverbs like *supposedly*, which do not have the subset property. The force of this objection depends on how much one would want all kinds of adverbials to be represented with the same kind of structure in the semantics, and it does not apply if one restricts one's view to just adverbials of a semantic type similar to that of *slowly*.

The other objection applies to the representation of predicate modifying adverbs specifically, and basically amounts to the objection that the representation is not detailed enough to represent the meaning properly. Parsons says the problem shows up with "phrases which contain more than one modifier" (Parsons 1970: 324), but it is more specific than that, since multiple modifiers can easily be represented with a conjunction of event-predications. The difficulty arises when there is an interaction between the modifiers, such that one somehow interacts with the meaning of the other. Specifically, by taking *painstakingly* and *illegibly* as one-place predicates that apply to properties (Reichenbach 1947) or events (Davidson 1967), we can easily give an analysis of the meaning of (7a), but (7b) – which "[requires] that the illegibility of the writing was at least one of the things John was taking pains to do" (Parsons 1970: 324) – is not as easy to represent.

(7) a. John wrote painstakingly and illegibly.
b. John painstakingly wrote illegibly. (Parsons 1970: 324)

Parsons (1970: 326) instead suggests the formula in (8), "where 'painstakingly' modifies the phrase 'wrote illegibly' ". Thomason & Stalnaker (1973), who work out the operator approach in more detail, use the formula in (9), where it comes out clearly that the adverbials are operators that form predicates out of predicates. (Sentence adverbs, like *supposedly*, apply to propositions and return propositions.)

(8) **painstakingly**(**illegibly**(**write**(x)))[6]

(9) **painstakingly**(**illegibly**(**write**))(x)[7]

Fodor (1970)

Fodor does not propose a form of representation that he specifically endorses, but he gives a critique of Davidson's (1967) proposal, and gives some other possible variants of the analysis which he also criticises.

Fodor is not satisfied with the Davidsonian representation (10) of *John spoke clearly* interpreted as asserting clarity of John's speech, since (10) does not properly express the "constituent modification" involved – the close relationship between the meanings of *clear* and *spoke* – it just states that there is a "speaking event" which is also a "clear(ly) event", without requiring that it is aspects of the speech that make the event "clear".

(10) $\exists e$[**speak**(**john**, e) $\wedge$ **clear**(e)][8]

Fodor then gives (11) as a potential alternative representation which overcomes this "defect", where **manner-of**(m, e) is true if and only if e is an action and m is the manner in which the agent performed it:

(11) $\exists e, m$[**speak**(**john**, e) $\wedge$ **manner-of**(m, e) $\wedge$ **clear**(m)][9]

But Fodor does not take this to be a satisfactory analysis. It is "ontologically unparsimonious" since it quantifies over manners, which have unclear identity conditions and therefore could be argued even to be "ontologically disreputable" (Fodor 1970: 313). The representation in (11) also assumes that a sentence like *John speaks clearly* expresses a primitive relation between an event and a manner, something which Fodor finds "simultaneously implausible and unilluminating" (Fodor 1970: 314).

6 $P(I(Wx))$ (Parsons 1970: 326)

7 $(\zeta\xi P)a$ (Thomason & Stalnaker 1973: 208)

8 $(\exists x)$(spoke (John, x)) & (clearly (x)) (Fodor 1970: 308)

9 $(\exists x, y)$(spoke (John, x)) & ($R(y, x)$) & (y is clear) (Fodor 1970: 314)

Fodor also does not think that (11) really accomplishes the expression of constituent modification in a meta-language without constituent modifiers, which is part of what makes the first-order event-based approach attractive. The reason is that if we specify what type of relation **manner-of** is, we would have to resort to some type of meaning like **in-a-certain-way**(**perform**)(**a-certain-action**) in the description of the meta-language, where we have "constituent modification all over again" (Fodor 1970: 314).

Bartsch (1976 [1972])

Bartsch presents an analysis of manner modification in which (12) is a possible representation of the sentence *Peter is running fast*.

(12) $p_1 = \imath p[\textbf{be-in}(\textbf{peter}, p) \wedge \textbf{running-process}(p)] \wedge \textbf{fast}(p_1)$[10]

This has the general Davidsonian form, where the meaning of the adverb is a predicate that takes an event/process as an argument. But Bartsch takes it that this form should be further decomposed if one were to analyse the exact meaning structures, and not just give an analysis of the logical form:

> [manner adverbials] apply to something that verbs contain in addition to the functions of their finite forms. […] They can only be applied to verbs which, when used in sentences, exhibit – in addition to the quite general functions of the finite forms of 'to be' and other verbs – further components, coordinates, as it were, which can be further specified by manner adverbials. (Bartsch 1976: 150)

> [predications of process or state-individuals r] are in the first place specifications of the coordinates with respect to which the state or process r is to be determined. (Bartsch 1976: 171)

The fact that predications apply to specific coordinates that are available in the meaning structure can be represented by *functors* that pick out the right coordinates of their arguments. For the predication of fastness to a process as in (12), she proposes a mapping to coordinates as in (13). The notions behind the terms *meaning structures* and *coordinates* are not discussed much further in (Bartsch 1976), but there is a reference to (Bartsch 1969), which I have not consulted.

10 $A[F](x_1) \leftrightarrow r_1 = (ir)(P(x_1, r) \,.\, F\text{-}Proc(r)) \,.\, A(r_1)$ (Bartsch 1976: 166)

(13) **fast**(ιi[**intensity-of**(i, ιs[**speed-of**(s, p)])]) → **fast**(p)[11]

Dik (1975)

Dik is not satisfied with the event predicating treatments of manner adverbs of Reichenbach (1947) and Davidson (1967), since the representations do not express properly that it is the *manner* of the event which is characterised. Even Reichenbach's (1947) "statement of connection" between the property ascribed to the event and the description of the event will not suffice, since it does not "distinguish between adverbials like *beautifully* and *quickly*, although the latter clearly does not modify the manner, but the speed of the activity involved" (Dik 1975: 117).[12]

Dik proposes that situations that are controllable or dynamic (Activities, Processes and Positions) have manners implicitly related to them – that the description of a situation establishes the manner as a discourse referent. This is formally captured by the redundancy rule in (14), which says that all situations of the right type have a manner associated with them, which can be "extracted" by the function **manner-of**. The representation of *Anette dances beautifully* would then have the form in (15).

(14) $\forall s$[**controlled-situation**(s) ∨ **change-situation**(s) → $\exists m$[**manner-of**(m, s)]][13]

(15) **dance**(**anette**, s) ∧ **beautiful**(ιm[**manner-of**(m, s)])[14]

With respect to adverbs like *quickly*, Dik proposes that there is an implicit speed for all situations that involve a change, which could be extracted by a function **speed-of**. In that case, the fact that *quickly* and *beautifully* describe different aspects of a situation could be formally represented.

Ernst's (1984) proposal is similar to Dik's in that Ernst has manner

11 fast(f^{int}(f^{speed}(r))) → fast(r), e.g. 'fast running' (Bartsch 1976: 171)

12 Dik says that Bartsch's (1970) analysis faces the same problem, but he only cites (Bartsch 1970). Bartsch (1976: 171) would have these adverbs apply to different coordinates of the process, using the predicates **intensity-of** and **speed-of** for *quickly* and **aesthetic-value-of** for *beautifully*.

13 (s) (Co(s) ∨ Ch(s) ⟶ ($\exists m$) (m = M_s)) (Dik 1975: 118)

14 s_1(dance(Annette))$_{s_1}$ & beautiful(M_{s_1}) (Dik 1975: 118)

modifiers apply to variables that represent something more specific than the whole event, but he proposes that the notion of "manner" should not play a role in the formal description. All that is necessary in his view is to specify that the manner modifiers apply to some attribute of the referent of the verb, which is achieved by the general relation **attribute-of**. What exactly this attribute consists of is not captured in the semantic representation, and is an issue which is determined by the lexical semantics of the modifier. So in (16), we know that *w* has to be an attribute which is "internal" to **dance** (through the meaning of **attribute-of**), and that it has to be something that can be beautiful.

(16) **dance**(**anette**) ∧ ∃*w*[**attribute-of**(*w*, **dance**) ∧ **beautiful**(*w*)][15]

McConnell-Ginet (1982)

The focus of McConnell-Ginet's article is not the semantics of manner modification in particular, but the relation between syntactic form and logical form of adverbs more generally. Her proposal is that certain adverbs that are modifiers of the verb (Ad-Verbs in her terminology), like manner adverbs, should be represented as arguments of augmented predicates. Verbs like *behave* that subcategorise for a manner adverbial have an argument position for manner specified in the lexical entry, but for other verbs it is possible to form a new predicate by rule, whose argument frame is extended with another position in accordance with the type of the Ad-Verb involved. Thus, *Anette dances* could be represented as **dance**(**anette**), and when a predicate modifier like *beautifully* is added we would get an augmented predicate **dance**$^{+}$, and end up with something like **dance**$^{+}$(**anette**, **beautifully**).

McConnell-Ginet is not committed to any proposals for what semantic type manner adverbs belong to, since the rule that forms augmented predicates only refers to "Type Y" where the Ad-Verb is in category Y. In one place she seems to imply that all adverbs (or Ad-Verbs?) are of the same type, when she says of the second argument of *behave*,

15 The following is a representation of *Heinz writes very artistically*:

(i) WRITE(H) & (∃w) ATTRIB (w,WRITE) & ARTISTIC*(w)
(Ernst 1984: 93)

that it "is whatever kind of entity adverbs designate" (McConnell-Ginet 1982: 164).

Another interesting clue to the question of manner adverbs' type comes when McConnell-Ginet relates Ad-Verbs to their morphologically related adjectives. She does this using meaning postulates like (17), which makes inferences like (18) necessarily true.

(17) If α^+(**quickly**) is defined, then $\exists$b such that α^+(b) is defined and **rate**(b), and α^+(**quickly**) is synonymous with [α^+(b) & **quick**(b)].
(McConnell-Ginet 1982: 170)

(18) Joan runs quickly if and only if Joan runs at a quick rate.
(McConnell-Ginet 1982: 170)

Unfortunately, McConnell-Ginet does not specify any further what the interpretation and semantic types of **quick**/**quickly**, **rate** and *b* are. It seems that *b* represents a particular rate, and that it can have the same function as **quickly** as an argument to an augmented predicate α^+, which might imply that **quickly** also could be seen as a rate.

Another conception, where the Ad-Verbs themselves are not seen to denote specific "coordinates" such as rates, is suggested elsewhere in the text, when McConnell-Ginet argues that when an Ad-Verb augments a predicate, it "[adds] a variable from a particular domain" which it "binds", or alternatively that it adds "an indexical coordinate" associated with the verb which it " '[generalises] over' in a way specific to the Ad-Verb" (McConnell-Ginet 1982: 179).

Jackendoff (1983)

Jackendoff proposes a separate mode of combination for conceptual structures for modelling restrictive modification. With respect to manner modification, he proposes that the modifying CS has the ontological category Manner, and the examples he gives contain adverbs such as *quickly*, *quietly*, *meticulously* and *violently*.

One argument that Jackendoff gives for analyzing the semantic contribution of these lexical items as separate conceptual constituents is that they can be used referentially. Jackendoff points out that Manner can be referred to exophorically ("pragmatic anaphora") (19a), serve as an answer to a constituent question (19b), be compared as same/

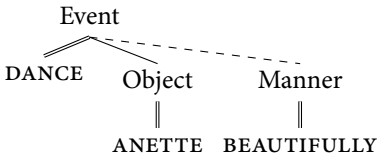
different (19c), and function as a variable for quantification (19d). The parallel with Objects is quite clear both syntactically and semantically in all these constructions.

(19) a. You shuffle cards {thus / so / this way} [*demonstrating*]
b. How did you cook the eggs?
c. Bill shuffles cards the same way (as) he cooks eggs (– meticulously)
d. Bill can shuffle cards (in) {some way(s) | every way} that Jack can. (Jackendoff 1983: 49–55)

With CS modification by a Manner constituent, (20) would be the representation for manner modification, or (21) in the tree notation.

(20) $\left[\begin{array}{l} \text{DANCE}\,([_{\text{Object}}\ \text{ANETTE}]) \\ _{\text{Event}}\,[_{\text{Manner}}\ \text{BEAUTIFULLY}] \end{array}\right]$ [16]

(21)



2.2 Modification and manner in Conceptual Semantics

2.2.1 *Modifiers and arguments*

An issue which is quite central for the description of manner expressions is the distinction between arguments and modifiers.

All the proposals discussed in the previous section treat manner expressions differently from expressions of core participants. Manner

16 One example Jackendoff gives a representation for is *Jack dropped the diamonds quickly*:

(i) $\left[\begin{array}{l} \text{EVENT} \\ \text{DROP([JACK],[DIAMONDS])} \\ \left[\begin{array}{l}\text{MANNER}\\ \text{QUICKLY}\end{array}\right] \end{array}\right]$ (Jackendoff 1983: 72)

expressions either correspond to optional predicates that do not affect the valency of the verbal predicate (Reichenbach 1947, Davidson 1967, Parsons 1970), or to coordinates or individuals related to the situation, but which are represented by some other means than that which is used for the core participants (Bartsch 1976, Dik 1975, McConnell-Ginet 1982). A potential symmetrical analysis of manner and core participants could be given formulated in the neo-Davidsonian style as in (22), where the manner and the agent have identical status with respect to the valency of **dance**, but I have not seen anyone proposing exactly this analysis.

(22) $\exists e, x, m[\mathbf{dance}(e) \wedge \mathbf{agent}(x, e) \quad \wedge \mathbf{girl}(x)$
$\wedge \mathbf{manner}(m, e) \wedge \mathbf{beautiful}(m)]$

An important criterion for the argument–modifier distinction is the question of optionality or obligatoriness. For the opposition in syntax, it concerns optional/obligatory expression, and in semantics one talks about optional/obligatory conceptual involvement. Croft (1991) defines the valency of concepts as "inherent relationality" – when a concept requires the existence or presence of another entity. *Hit* has a valency of two since it requires both a hitter and something hit, whereas: "*man* is not relational: the existence of a man does not imply the existence of another entity, in the way that the existence of an instance of hitting or of redness does" (Croft 1991: 62f). But that qualification ("in the way …") is important, since in some sense the existence of a man does imply the existence of a range of other entities. If there is a man, there has to be parents involved – in fact an indefinitely long line of ancestors. And just as parts can be seen as inherently relational to a whole, there is a sense in which the whole (the man) is relational to its parts (body parts, the soul, etc.). With a wide interpretation of *entity*, we could also say that a man implies the existence of a range of essential properties, both physical (a particular height, weight, etc.) and abstract. On the most primitive conceptual level, it seems that everything can be considered relational in some sense. Just looking at the entities or properties whose existence is necessarily implied by a particular concept does not give the right delineation of valency for linguistic purposes, since a certain spatio-temporal location is just

as conceptually necessary for an event of hitting as the participants involved, but many would hesitate to include the dimensions of time and space as arguments alongside the participants.

When it comes to distinguishing "elaborators" from "free modifiers", Allerton (2006) says that a test which is more useful than testing whether an element can be omitted or not, is to test if elements can be inserted freely with other verbs. Elaborators can only be added to certain verbs, and therefore should be taken to participate in the verb's valency, whereas "free modifiers" like temporal adverbials "can be added to any sentence" (Allerton 2006: 304).

But requiring that an element can be added to *any* sentence is not restrictive enough for delineating all kinds of perceived modifiers. Manner adverbs are e.g. generally unacceptable with stative verbs, which McConnell-Ginet (1982) illustrates with her example (23).

(23) *Annie weighs 120 pounds {heavily | beautifully | quickly | elegantly}. (McConnell-Ginet 1982: 166)

Jackendoff (2002) says that "verbs do not differ in whether they allow expression of manner, time and place" and that they are "*always* available as optional additions to semantically appropriate sentences" (Jackendoff 2002: 134). That verbs do not differ with respect to the modifiers they can take is too strict, as we have seen. The right description is that modifiers are always available when they are semantically appropriate. With actions that are capable of being performed in a manner, a manner can be specified. But this characterisation holds equally well with respect to core participants, which we want to be arguments. For all actions that involve something eaten, the thing eaten can be specified.

It seems to me that the right distinction does not involve optionality or obligatoriness in absolute terms, but more something like *distinctive obligatoriness*. The key difference between the person that is hit and the manner in which the hitting is performed is that the person hit is obligatory because of features that are specific to the concept of hitting, and which distinctively separates it from other concepts. The involvement of a certain manner of acting on the other hand, is obligatory because of features that are characteristic of the general ontological category

of the concept (e.g. Action vs. State), and not because of features that characterise the concept in question distinctively. The person that is hit is what distinguishes (real) hitting from just lashing out in the air, but there are no event types that are distinguished by the presence or absence of a manner.

What is special about the verbs that obligatorily subcategorise for a manner expression in the syntax, like *behave*, *word* and *treat*, is not the conceptual status of the manner component, but a syntactic or information structural feature which gives these verbs the special function of being used particularly to describe the manner of the situation. "Behaving" is not a special concept where the notion of manner is in any sense more conceptually necessary than it is in the concept "dancing". The distinction lies in the fact that the verb *behave* is used to characterise the behaviour of someone, and it is a purely linguistic issue that this characterisation is syntactically obligatory.

The distinction we have pointed out, between those participants or elements in a concept that are clearly concept-specific (e.g. core participants, obligatory place-expressions to *put*) and those that are general properties of larger categories of concepts (time, place, manner) seems important to capture in a linguistic model, and we have seen that it is generally the case that the distinction is represented in some way. Exactly how the difference is reflected in the model is perhaps of less importance from a conceptual viewpoint. In McConnell-Ginet's (1982) analysis, the categories end up with the same relation to the predicate in the representation, the difference lying in how they ended up there (either the argument position is lexically specified, or established by rule when necessary). In Conceptual Semantics, they are marked as having distinct functions in the CS.

Another distinction that one might want to represent, is that between those modifiers that express categories that are necessarily involved with a specific concept (time, place), and those which are optional (reason, purpose). Since the focus here is strictly on manner modification, I will not look further into this issue, but just note that there is reason to (at least) separate manner modifiers from the components of a concept that are distinctively related to this concept, and that the CS modification relation seems like an adequate way of representing this distinction.

2.2.2 Manner and properties

In the description of Jackendoff's (1983) approach to manner modification, we saw that he proposed an ontological category Manner, which was partly justified by the argument that we can make reference to manners (see example (19) on page 29). But while this argument might show the need for manner expressions to correspond to CS constituents that one can refer to, it does not necessarily show that these constituents must be of the category Manner, or that Manner should be treated as a basic category. For one thing, some of the referential examples could be seen as making reference to actions or methods: *you shuffle cards thus* ≈ *you shuffle cards by taking one deck here, one deck here, and interleaving the cards by taking* . . .). Another issue is that the distinction between Manner and Property is not completely evident.

A linguistic argument for the inclusion of Manner as a distinct category may be based on Haspelmath's (1997: 21, 29) finding that in series of indefinite pronouns in many languages, there are specific pronouns for the different ontological categories: person, thing, property, place, time, manner, amount, and a few others. Apart from the separation of persons from things, these are all suggested as ontological categories by Jackendoff (1983), and the indefinite pronouns for properties (of things) are often separated from those for manners. In this case then, the linguistic evidence suggests a separation of manners from properties. But in many other cases properties and manners are treated alike. Landman & Morzycki (2003) point out that some languages have demonstrative/anaphoric modifiers meaning "like that" that can be used both adverbially and adnominally. Their examples are *tak* in Polish and Russian, *so*/*zo* in German and Dutch, to which we can add *sånn*/*sådan* from Norwegian and Danish. For interrogatives the situation is quite similar, as Van de Velde (2009a) exemplifies in her discussion of how *comment* "how" in French can be used to enquire both about "ways of being" and "ways of doing".

It is clear that the proposed categories Manner and Property have a closer relation to each other than many of the other categories in the ontological inventory. This relation is evidenced linguistically not only by the anaphoric and interrogative words mentioned above, but by the

close morphological relation that exists in many languages between adverbs, which intuitively are what correspond to the Manner category, and adjectives, which correspond to Properties. This close relation shows that a systematic link is necessary, but it does not show that these are not distinct notions. We often find morphologically close relationships between agentive nominals and verbs as well, but there is a clear conceptual distinction between the agent of an action and the action itself. Still, the difference between qualities of actions and qualities of objects is intuitively not as sharp, so it could be questioned if the distinction between them should be represented analogously to that between objects and situations or time and space, or if the distinction rather should resemble that between bounded and unbounded paths.

A possible distinction at a lower level than that of the basic ontological categories seems to be something that Jackendoff may also have had in mind in later works: in (Jackendoff 1990: 56) we find that the CS corresponding to *quickly* is given the category specification Property/Manner in a passing example, and in (Jackendoff 2002: 383) we find that *slowly* is mapped to a Property CS.

We can imagine several ways in which manners and properties could be related but kept distinct in the inventory of ontological categories. One could be to introduce a super-category Quality, with some feature that would distinguish the sub-categories Manner and Property. But it would perhaps be preferable if the solution could be related to notions we already have in our theoretical inventory.

One possibility could be to relate the distinction to the temporal dimension, using the theory of aspectuality proposed by Jackendoff (1996b). The idea presented there is to look at events, materials, paths and times as continuous projections of an n-dimensional cross-section. Much like a cylinder can be seen as the projection of a two-dimensional circle in a third dimension, a stretch of time can be seen as a continuous projection in one dimension of zero-dimensional points of time, and situations can be seen as continuous projections of idealised "snapshots" of states.

Furthermore, these projections can be related or bound to each other, which accounts for the dependence of the boundedness of events on the boundedness of the paths and materials that are involved. The example in (24) shows how these notions are represented. This example

schematically represents a motion event, and it can be thought of as a decomposition of the (spatial) function GO into the more primitive function BE and the notion of projecting cross-sections. The double line indicates the projection of an *n*-dimensional cross-section (at the bottom) onto an *n*-dimensional axis (at the top). The Greek letters show how these projections are bound to each other (*sp-bound* means that they are connected by a "structure-preserving binding relation"). In prose, it means that the unfolding of the event (the position of thing *X*) follows a continuous path (a one-dimensional projection of a spatial point) through a stretch of time (the projection of an instant).

(24)
$$\left[\begin{array}{ccc} [1d]^{\alpha} & & [1d]^{\alpha} \quad [1d]^{\alpha} \\ \| & & \| \quad \| \\ 0d & & \| \quad \| \\ {}_{\text{Sit}}\,\text{BE}\,([_{\text{Thing}}\,X],\,[_{\text{Space}}\,0d]); & & [_{\text{Time}}\,0d] \end{array}\right] \quad \begin{array}{l} \text{[sp-bound axes]} \\ \\ \text{[cross-section]} \end{array}$$

(Jackendoff 1996b: 322; 2010: 191)

Jackendoff (1996b) gives only examples where the constituents that are projected are arguments (except the temporal constituent), but it might be possible to use this machinery to represent the distinction between Manner and Property modifiers as well. The idea is that a Manner will be taken to be a Quality which is bound to the temporal axis, whereas a Property is not.

An advantage of this way of representing the distinction is that we have a neat way of accounting for why pure statives generally are unacceptable with manner modification. This is because States are distinguished from Events in this account by not having an axis bound to a Time-projection. If the definition of Manner requires a binding like this, we have an explanation for why stative expressions cannot be modified by manner expressions.

In some event-based approaches the impossibility of manner modification of states is interpreted to mean that states do not have an event argument, so that there is nothing that manner predicates can apply to. By using the temporal parameter that distinguishes these types of situations instead of just stipulating a difference in their argument structure, we can relate the impossibility of manner modification of states more directly to a feature that uncontroversially distinguishes states from

events, namely the temporal properties. This being said, the temporal dimension is of course not the only property that distinguishes states from events, so although the temporal dimension offers one possible way of accounting for the stative data, it is by no means the only one. Statives are also more conceptually impoverished in other ways, e.g. in the range of perceivable features expressed (Geuder 2006, Van de Velde 2009b).

One problem with the idea of defining Manner as a Quality bound to Event and Time-projections is that this is the analysis that Jackendoff (1996b) proposes for predicates of change of state such as those as in (25), following Gruber (1965) in relating the analysis of change of state-predicates to the analysis of motion. The schematic analysis of this type of sentence is given in (26).

(25) The water got {hot | hotter}.

(26)
$$\left[\begin{array}{ccccc} [1d]^{\alpha} & & [1d]^{\alpha} & & [1d]^{\alpha} \\ \| & & \| & & \| \\ 0d & & & & \\ {}_{\text{Sit}}\ \text{BE}_{\text{Ident}}\ ([_{\text{Thing}}\ X],\ [_{\text{Property}}\ 0d]); & & & & [_{\text{Time}}\ 0d] \end{array}\right]$$

(Jackendoff 1996b: 331; 2010: 200)

Here, the linear projection of the Property forms a scale corresponding to the degree of satisfaction of the property, a scale which can be bounded or not (TO HOT/TOWARDS HOT). This is obviously not the projection we want for manner modifiers, since *John sang the tune loudly* does not mean "John sang the tune progressively louder".

It might be that there are ways to distinguish between properties involved with change of state-predicates and manners in the axis projection analysis. Perhaps the change of state aspect is dependent on the function BE_{Ident}, rather than just on the projection of the Property constituent and the binding of the Property and Time axes. Then Manner and Property could be considered as a belonging to a single ontological category Quality, and the distinction between them being due to whether or not they are sp-bound to a Time-projection. Examples (27) and (28) (of the sentences *Anette dances beautifully* and *The beautiful girl dances*) show how this would work.

(27) $$\left[\begin{array}{ccc} [1d]^{\alpha} & [1d]^{\alpha} & [1d]^{\alpha} \\ \| & \| & \| \\ 0d & 0d & \\ {}_{\text{Sit}}\ \textsc{dance}\ ([_{\text{Object}}\ \textsc{anette}]); & [_{\text{Quality}}\ \textsc{beautiful}], & [_{\text{Time}}\ 0d] \end{array}\right]$$

(28) $$\left[\begin{array}{cc} [1d]^{\alpha} & [1d]^{\alpha} \\ \| & \| \\ 0d & \\ {}_{\text{Sit}}\ \textsc{dance}\ ([_{\text{Object}}\ \textsc{girl}; [_{\text{Quality}}\ \textsc{beautiful}]]); & [_{\text{Time}}\ 0d] \end{array}\right]$$

A possible extension of the analysis to avoid (27) looking too much like the change of state-example (26) could be to have Manner as a Quality bound directly only to the Event-projection, and only indirectly to the Time-projection, as illustrated in (29).

(29) $$\left[\begin{array}{ccc} [1d]^{\alpha}_{\beta} & [1d]_{\beta} & [1d]^{\alpha} \\ \| & \| & \| \\ 0d & 0d & \\ {}_{\text{Sit}}\ \textsc{dance}\ ([_{\text{Object}}\ \textsc{anette}]); & [_{\text{Quality}}\ \textsc{beautiful}], & [_{\text{Time}}\ 0d] \end{array}\right]$$

I will not look further into the possibility of accounting for Manner through a link to a temporal projection. I will just conclude that it seems reasonable that the distinction between manners as "ways of doing" or "ways of events unfolding" and properties as "ways of being" should not be represented with a difference in basic ontological category. Rather, it should follow from some aspect of their combinatorial properties. In what follows, I will treat the intuitive notions of "manner" and "property" as CSs belonging to the ontological category Property, and assume that the difference between them is adequately reflected by the difference in ontological category of the matrix CSs of which they are parts. This is reflected in the schematic representations in (30), and the examples in (31).

(30) a. **"Manner":** $[_{\text{Situation}}\ Y; [_{\text{Property}}\ X]]$
b. **"Property":** $[_{\text{Material}}\ Y; [_{\text{Property}}\ X]]$

(31) a. *dance beautifully* $[_{\text{Situation}}\ \textsc{dance}\ (X); [_{\text{Property}}\ \textsc{beautiful}]]$
b. *beautiful girl* $[_{\text{Material}}\ \textsc{girl}; [_{\text{Property}}\ \textsc{beautiful}]]$

2.2.3 Manner and verbs/events

Having established that manners should be represented differently from core participants, it is time to turn to the relation between manner expressions and verbs, and whether the semantic values of manner expressions should combine with some semantic constituent (a predicate/meaning), or with a referential variable that corresponds to either an event or manner individual.

In the following, we will schematically examine how these relations are conceived of in the approaches summarily described earlier (§ 2.1.2, pages 20–29).

The interpretation of manner expressions as corresponding to second-order predicates is represented in (32) (Reichenbach 1947), and the predicate operator approach is represented in (33) (Parsons 1970, Thomason & Stalnaker 1973).

A feature which is common to both these interpretations is that manner modification applies semantically to a predicate. In the predicate operator approach it is explicitly stated that it is the verb which determines valency, since the predicate operator just returns a 1-ary predicate from a 1-ary predicate. In the second order interpretation, the manner and the verb seemingly have a symmetrical status with respect to the specific predicate involved (*P*), and one cannot see from this representation alone that it is the verb which determines the valency of this predicate.

In event-based approaches, manner modifiers do not combine with predicates, but rather with variables that represent the described event or situation. In the neo-Davidsonian format in (35), the verb and the manner expression are indistinguishable with respect to their relations, whereas in (34) it is represented that the verb determines the natural valency of the event.

(34) argument verb *e* manner *Davidsonian event variable*

(35) *x* argument verb *e* manner *neo-Davidsonian form*

One way of introducing an asymmetry between the verb and the manner expressions in an event-based approach is by using a separate variable to represent the manner, which the manner predication takes as its argument, and which is related to the event by some function, represented by *R* in (36) (Dik 1975).

(36) argument verb *e* *R* *m* manner *manner variable*

In McConnell-Ginet's (1982) analysis, the status of the manner expression parallels that of the participant rather than that of the verb as in the event-based approach. In (37) this is represented by the semantic value of the manner modifier itself having the status of an argument. The conception where the manner expression augments the verb with a coordinate that it "binds" is represented in (38).

(37) argument verb argument verb^{+} manner

(38) argument verb^{+} *m* manner *augmented predicate*

It is problematic to directly compare the different representations shown above, since they are made within frameworks with different goals and assumptions. Nevertheless, it could be instructive to look at the different features that characterise and distinguish the proposals, and then look at how these features could be handled in a Conceptual Semantics analysis.

The predicate operator interpretation is perhaps the one which is closest to the traditional idea of manner expressions as typical adverbs. But the underlying idea of the traditional conception is just that manner expressions have a close connection with the meaning of verbs, and all the representations above are compatible with this idea.

One feature which is shared by the second-order representation

in (32) and the neo-Davidsonian representation in (35) is that the functions of the manner expression and the verb are not distinguished. From a logical perspective, this is not necessarily a disadvantage, since *someone talked loudly* entails both *some talking happened* and *something happened loudly*. From a conceptual perspective it is more unfortunate, since it is clear that there is an asymmetry between what is expressed by the verb and what is expressed by the manner modifier in terms of categorisation. From the perspective of the syntax–semantics interface it is also unfortunate, since **talk**(e) ∧ **loud**(e) corresponds to *talk loudly* and not *loud talkingly*.

The introduction of a manner variable as in (36) is one way of formally representing the different semantic contributions of the verb and the manner expression. Another argument for the manner variable concerns not the representation of the adverbial compared to the verb, but how the representations of different adverbials are distinguished. This was part of Dik's (1975) argumentation, when he claimed that the treatment of manner modifiers as predicates of the event variable could not represent the fact that adverbs like *beautifully* and *quickly* characterise different aspects of the event. By using different relations for R in representations of the form in (36), *beautifully* and *quickly* could be predicated of different entities related to the event, such as the manner and the speed.

A potential problem with the introduction of a manner variable is the question of the ontological status of this category. This is Fodor's (1970) main argument. There are good reasons to accept the treatment of events as individuals distinct from their participants, but can the same be said with respect to distinguishing between the event and some manner that is related to it?

It is my view that this would be an unfortunate position, and that an analysis in Conceptual Semantics could preserve the advantages of the manner variable approach without the need to treat the manner of an event as a particular individual in the world separate from the event itself.

In Conceptual Semantics the semantic values that are associated with linguistic material are not predicates that apply to individuals taken from a model, but conceptual structures, which are models of the mental structures of a speaker that embody the concepts involved.

These structures can be linked to entities in the speaker's conceptualised world, modeling the speaker's categorisation of that entity as an instance belonging to the concept. Allowing the manner expression to correspond to a CS in the descriptive tier does not force us to treat manners as particular individuals in the conceptualisation of the world. The treatment of events as individuals is supported by the referential facts illustrated in (39), where *it* refers to a specific event in (39b) in a manner that completely parallels the reference to a specific object in (39a). These are instances of what we may call *token-anaphora* or *identity of reference*.

(39) a. I saw a tiger. Did you see it too?
b. I saw John fall down. Did you see it too?

The referential potential of the category manner that Jackendoff (1983) illustrated with the examples in (19) on page 29 does not include reference to these kinds of specific entities, and the examples only show what we may call *type-anaphora* or *identity of sense*. To represent this we only need the manner expressions to correspond to CS constituents on the descriptive tier, and we need not link these to their own referential indices.

Refining Jackendoff's (1983) proposal in the way suggested in the discussion above (substituting the category Manner with Property), and augmenting the representation with an indication of the referential tier, we get the representation in (40) (showing only the refential dependency relation and not the grounding arrows).

(40) CS: Event_1 RT: 1

DANCE Object_2 Property_3 2

ANETTE BEAUTIFUL

Modeling this using the schematic form of representation for comparison purposes, we would get something like (41).

(41) argument verb manner

x e

Although the analysis involves more machinery than the others in that it postulates two distinct tiers – the referential and the descriptive – and two distinct modes of combination – argument complementation and modification – it avoids many of the unfortunate properties of the other analyses considered:

- It represents the different contributions of the verb and the manner expression by having the verb determine the ontological category of the whole, as the head of the CS which is linked to the event index.
- It distinguishes the roles of the core participants which are distinctively associated with the event type and the manner properties which are general features of actions.
- It allows type-anaphora to target the conceptual content of the manner expressions without needing to postulate manners as individuals in the world.

A critic might question how well the Conceptual Semantics treatment of modification as a separate mode of semantic combination fits with the general principle that different kinds of information should be kept in distinct representations, and that interactions should be captured by relating these representations to each other. Jackendoff (2002: 383) takes it to be an advantage of the CS modification relation that it maps uniformly onto syntactic dependencies in many different constructions, and that it expresses semantic relations between many different categories (*run slowly*, *high on the wall*, *a house on the hill*). But possibly, this uniformity between syntax and semantics might also be seen as a defect, in the sense that maybe what the modification relation really captures is partly a syntactic notion, and that introducing it as a conceptual primitive relation is in reality just mixing levels.

Within the Meaning–Text Theory (Mel'čuk 1997, 1988, 1993–2000) for example, modifiers are not distinguished from other predicates in the semantics, but only in the interaction between propositional semantics, communicative structure and syntax. Modifiers are characterised by the fact that they are semantic heads (predicates) in the Semantic Representation, and syntactic dependents with the Attributive function in the Deep-Syntactic Representation (Mel'čuk 2003: 208f; 2004a: 20f). Which semantemes in the Semantic Representation become Deep-Syntactic heads is partly given by the Semantic-Communicative

Structure, where one semanteme is marked as Communicatively Dominant. The lexical unit of this node will be selected as the top node in the Deep-Syntactic tree. It is this node that determines the "type" of what is asserted, in that *run slowly* primarily describes a kind of running, and not a kind of "slowing".

I will not discuss further the justification of the inclusion of the modification relation as a separate mode of combination of conceptual structures. It will be supported to the degree that it turns out to be useful in the description of natural language phenomena, and if it eventually turns out to be a higher level property which is possible to define with independent and more basic notions, then all the much better. By treating it as a separate notion, one is not committed to treating it as a primitive of the model for all time.

2.2.4 Manner and orientation/scope

One issue that has not been addressed so far is Reichenbach's (1947) worry that his simple formula could not distinguish between a manner modifier like *beautifully*, which describes a certain aspect of the event, and other expressions that could be predicated of events but do not describe something like a manner, for example *led to a war*. And as Dik (1975) further notes, there is a sense in which *beautifully* and *quickly* characterise different aspects of an event, which we might like to capture in our representations.

With respect to Reichenbach's (1947) examples, these would not receive a unitary representation in Conceptual Semantics as a simple predicate σ, as in Reichenbach's framework, and it is perhaps a reasonable restriction that a tensed clause like *led to a war* which requires a link to a specific event index on the referential tier cannot function as a CS modifier.

The issue pointed out by Dik (1975) is a more general one. Although all manner modifiers are predicate or event-oriented in the sense that they partake in the characterisation of the described event (as opposed to e.g. *unfortunately* or *probably* which do not), they do so by characterising different aspects of the event.

Platt & Platt (1972) claim that "inner" manner adverbials, which have paraphrases of the form "in a ___ manner" (Platt & Platt 1972: 230),

can have at least six different orientations, which they exemplify with the sentences in (42) through (47).

(42) *Agentive oriented*
Joe kicked Fred viciously. (Platt & Platt 1972: 235)

(43) *Verbal oriented*
Maggie kissed Fred excessively. (Platt & Platt 1972: 238)

(44) *Experiencer oriented*
Joe kissed Aggie thrillingly. (Platt & Platt 1972: 239)

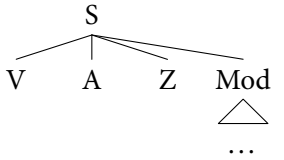
(45) *Agentive plus Verbal oriented*
Fred ate the sausages messily. (Platt & Platt 1972: 241)

(46) *Verbal (plus Factitive) oriented*
Mary wrote the letter neatly. (Platt & Platt 1972: 242)

(47) *Verbal (plus Result) oriented*
Mary packed the clothes neatly. (Platt & Platt 1972: 245)

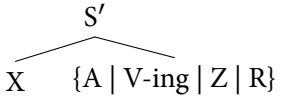
Platt & Platt (1972) analyse these sentences using a Case Grammar formalism, and the proposed semantic structures for the sentences above have the form given in (48), where *V* is the Verbal, *A* is Agentive, *Z* is a cover symbol for Experiencer, Affective and Factitive, and *Mod* represents the contribution of the manner adverb.

(48)



The *Mod* node contains subtrees of the form in (49), where *X* is the predication expressed by the manner adverb, and its sister node represents the constituent the predication is oriented towards (*R* is Result, which is not a produced object as Factitive, but a more abstract result like the way the clothes are packed in (47)).

(49)



In Dik's (1975) analysis, besides the possibility of having direct predications of components of the situation like its manner (**beautiful**(m)) and speed (**quick**(s)) as we have seen (pages 26–27), it is also possible to have complex characterisations of these components by propositional material, as illustrated by the analyses in (50) and (51) (the raised dot ' · ' stands for unspecified arguments).

(50) a. John writes illegibly. (Dik 1975: 119)
b. **write**(**john**, · , s)
∧ **characterised-by**(ιm[**manner-of**(m, s)],
illegible(ιx[**write**(**john**, x, ·)]))[17]

(51) a. John answered the question wisely. (Dik 1975: 119)
b. **answer**(**john**, **question**, s)
∧ **characterised-by**(ιm[**manner-of**(m, s)], **wise**(**john**))[18]

The properties denoted by the adverbs in these examples do not directly describe the manner variable, but the manner is characterised by the propositional content that what John writes is illegible in (50), and that John in wise in (51).

In his description of the modification relation, Jackendoff (1983) does not discuss the possible orientations of modifiers in depth, but he notes that the simple representation of modifiers as parts of the matrix CS they modify is "crude, in that it does not account for syncategorematicity. For such cases, the modifier must be connected with some internal part of what we have so far treated as an undecomposable head" (Jackendoff 1983: 72). In (Jackendoff 2002: 384), the orientation of modifiers is connected to the notion of *qualia* as examined by Pustejovsky (1995): "many modifiers do not modify their host as a whole, but rather one of its qualia. For instance, a *good knife* is not something that is both a knife and good, as the simple predicate logic translation would have it. Rather it is a knife that *cuts* well".

I will not try to develop the details of an analysis of orientation in Conceptual Semantics here. But it seems to me that the representations given by Platt & Platt (1972) and Dik (1975) maybe are too

17 s_1(write(John, X))$_{s_1}$ & (illegible(ιx) (write(John, x)))*(M_{s_1}) (Dik 1975: 119)
18 s_1(answer(John, question))$_{s_1}$ & (wise(John))*(M_{s_1}) (Dik 1975: 119)

specific, at least if they are interpreted as rules which are part of the syntax–semantics interface. The reason is that the exact relations that can be expressed by manner modifiers do not form a neatly delineated set of possible orientations, with it being clear in context what orientations are intended. Rather, the relation between the adverbial modifier and the head that is grammatically expressed seems to be a general underspecified relation ("characterised in some way by property X"), and the exact interpretation which is arrived at depends very much on an inferential procedure that is guided by the lexical semantics of the items involved.

Take the example of *speak clearly* that Fodor (1970) examined (see pages 24–25). Fodor was not satisfied with a simple characterisation of the event as being clear, since it seems that **clear** has to be related to some part of the speaking. But there are several ways that an event of speaking could be characterised as being clear. It could be that the pronunciation is characterised by clear sounds, that the words chosen are simple and clear (as opposed to obfuscating), or that the speaking was such that the intended message became clear to the hearers.

Quirk et al. (1985) give the examples in (52) to illustrate the semantic blends often found with predicate-oriented adverbials. For (52a), they give the glosses "in a covert manner" and "when they were by themselves", and "in a secret manner" and "in a secret place" for (52b).

(52) a. He told them *secretly* of his intention to resign.
b. Mary hid it *secretly*. (Quirk et al. 1985: 532)

In (53), the orientation of the adverb *tiresomely* is towards a participant and a process external to the dancing, and is interpreted along the lines of "such that it became tiresome to read".

(53) The rocking train made the print dance *tiresomely* before his eyes.
(Johansson & Lysvåg 1987: 260), cited by Killie (1994: 55)

It seems to me that all the paraphrases of the examples above illustrate possible orientations (and there are undoubtedly other sensible possibilities as well), but that it is not necessary to choose any particular one in order to make sense of these phrases. If this is the case, then it would be nice if we had a semantic representation where the exact

integration of e.g. CLEAR with SPEAK was underspecified. I propose that the CS representations of manner modification we have already looked at – where the properties denoted by the adverbs are modifiers of the matrix CS with no specific orientation indicated – can be seen as such an underspecified representation, and that it is such a representation which is the output of the general syntax–semantics mapping rule for manner modifiers. The exact connection between the modifying property and the action is then the result of a pragmatic inferential process internal to the CS level. This conception is very similar to the one proposed by Ernst (1984), which only requires manner modifiers to describe some "attribute" of the verbal referent.

It is clear, however, that there need to be some restrictions on what constituents can appear as modifiers, and what types of orientations are possible or preferred with different classes of adverbs. I mentioned above a possible restriction that modifiers cannot be linked on their own to specific indices on the referential tier. Geuder (2002) discusses cases where the adverb is oriented towards an implicit participant, as with *dig deeply* ≈ *dig a deep hole*, and notes that the potential of describing implicit participants is restricted:

(54) a. ?? to water the plants coldly (with cold water)
b. ?? to label the bottles greenly (put green labels on them)
c. ?? to shelve the books woodenly (on a wooden shelf)
d. ?? to bottle the whisky bulbously (in bulbous bottles)

(Geuder 2002: 80, 90)

Geuder analyses this restriction using Nunberg's (1995) notion of *predicate transfer*, where a meaning that is applied to an event is transferred into a predication of a "resultant individual" of that event. (Although the restriction may apply to examples such as those above with "arguments that are provided in the base of a zero-derived verb" (Geuder 2002: 80), it is not a general restriction with respect to orientation towards implicit arguments. In (55a), *the eyes* is subject, so *bulbously* can be seen as a fairly standard subject/agentive-oriented adverb, but in (55b) it is plausibly not the understood subject of *stirring*, although mentioned, and in (55c), the eyes are only implicit, but they are not a "resultant individual" of the action.)

(55) a. His watery blue eyes gazed bulbously at me […] (BNC)
b. […] the Russians were rising up on elbows, shading their eyes, bulbously stirring in the sun. (COCA)
c. 'This egg', roared OF, gazing bulbously into its depths, …
(Swan 1990: 46)

Van Voorst (1993) points out a similar generalisation, namely that orientation of manner adverbs is preferred towards *affected participants*, illustrated with the *load*-alternation in (56) and (57). When the boxes (the load) are seen as the affected entity (in the b.-examples), the orientation of *carefully* as expressing care towards the boxes is preferred (56b), and the interpretation where care is oriented towards the truck is preferred when the truck is seen as the affected entity in (57a).

(56) a. ??He carefully loaded the truck with the boxes because their contents were fragile.
b. He carefully loaded the boxes on to the truck because their contents were fragile. (van Voorst 1993: 68)

(57) a. He carefully loaded the truck with the boxes because its springs were gone.
b. ??He carefully loaded the boxes on to the truck because its springs were gone. (van Voorst 1993: 68)

Finding more restrictions and regularities of orientations like these would be an interesting study, but it is not one that will be undertaken here. I will just note that it seems that the proper way of representing these restrictions is not by having the syntax–semantics interface of manner modification determine an explicit set of possible orientations, but rather that what is expressed grammatically is just a semantically bleached notion of "characterisation", and that regularities in the exact orientations found should be associated with the semantic/pragmatic component.

3

Participant orientation

3.1 Background: Data and analyses

3.1.1 Types of orientation

We have seen in the discussion of manner modification that the modifying properties can vary in their relation to the modified process, in that they are often particularly closely related to specific participants or aspects of the process. This variation in orientation among predicate oriented adverbials is not what is most commonly referred to with the term *orientation* in the literature, however, where it usually separates the predicate-oriented modifiers as a class from other types of modifiers.

In this chapter, the distinction that we will concentrate on is the contrast found between the readings of *rudely* and *clumsily* in the a. and b.-sentences in (1) and (2).

(1) a. Louisa rudely departed.
b. Louisa departed rudely. (McConnell-Ginet 1982: 160)

(2) a. Clumsily he trod on a snail.
b. He trod clumsily on a snail. (Austin 1956: 25)

The distinction has been acknowledged for a long time. Western (1906) notes that there is a potential ambiguity in (3), where *foolishly* can be taken to mean different things.

(3) Banishing the reserve I had so foolishly planned.
(Western 1906: 75)

> Does it mean that I planned the reserve *in a foolish manner*, so that the plan failed when it came to be carried out, or does it mean that I *considered it a foolish thing* to have planned that reserve at all?
> (Western 1906: 75)

Western notes that this ambiguity only arises with the verb in this particular position, and that in a simple past tense clause placing the adverb in the pre-verbal position would make it a "sentence modifier", while the clause-final position would give rise to the manner reading.

The effect of position on interpretation is also the reason why Austin (1956) discusses the examples in (2), about which he says the following:

> Here, in [(2a)] we describe his treading on the creature at all as a piece of clumsiness, incidental, we imply, to his performance of some other action: but with [(2b)] to tread on it is, very likely, his aim or policy, what we criticize is his execution of the feat. (Austin 1956: 25)

As we will see in this chapter, the distinction has later been commented upon by many, with differences both in the analyses and the terminology used. The reading in (2a) is perhaps most commonly referred to as *subject-oriented* after Jackendoff (1972). Other terms that have been used are *agent-oriented* (Ernst 2002), *agentive* (Geuder 2002), *topic-oriented* (Potts 2005), *participant-oriented evaluative* (Dik et al. 1990), *stative* (Higginbotham 1989), *subject disjunct* (Quirk et al. 1985) and *act-related adjunct* (of the *subjective* type) (Huddleston & Pullum 2002). The reading is (2b) is more consistently called the *manner* reading (or more specifically: *agent-manner* (Dillon 1974)).

The adverbs that will be focused upon here are those where a judgement applies to an agentive participant (most commonly the grammatical subject, but not necessarily). For these cases the paraphrases in (4) are often possible (and many others, see (Dik 1975: 104) for an extensive list of English paraphrases, and (Guimier 1991b: 104) for French). The manner reading is often better paraphrased making explicit reference to the manner or way the action is performed, as exemplified in (5).

(4) a. Agent was ADJ to VP
    b. It was ADJ of Agent to VP

(5) Agent VP in a ADJ way/manner.

The distinction in question is part of a more general phenomena which also occurs with adverbs of other types, where we can distinguish

between a clausal (also called *high*, *sentential*, *factive*, or *evaluative*) and a VP reading (or *low*/*manner*).

One class are the content-oriented evaluatives, where the contrast is quite parallel to the one noted above, except that the evaluation has no special relation to any participant in the event. An example is given in (6), with a possible paraphrase of the clausal reading in (7).

(6) a. Amazingly, the injured striker played.
b. The injured striker played amazingly.

(7) It was ADJ (*of Agent) that S.

There are also participant-oriented adverbs which ascribe a particular mental state to the person rather than involving an evaluation. Here, the high–low contrast is not quite of the same type as for the evaluatives, but there still seems to be a rather robust contrast. In the lower use, the participant need not actually be in the mental state described by the adverb – he might just want to act such as to give that impression. With the high use, it seems that the participant is described as actually being in the state.

(8) a. *Bitterly*, he buried his children. ['He was bitter when he …']
b. He spoke *bitterly* about the treatment he received. ['He spoke in a bitter way …'] (Quirk et al. 1985: 575)

With this class of adverbs, there is also a fine contrast made in opposition with the depictive and absolutive constructions, where the adjective is used instead of the adverbs, and where the property is linked exclusively to the participant and not seen as describing the process denoted by the verb.

(9) a. Furiously, Bella followed him […]
b. Furious, Katherine stormed away. (BNC)

A subgroup of adverbs that ascribe a mental state to a participant are related to volitionality. This group is particular in that the lower manner reading is difficult to get. The sentences in (10) seem pretty synonymous, and (11) seems contradictory.

(10) a. Floyd intentionally broke the glass.

b. Floyd broke the case intentionally.

(11) #Intentionally, Floyd broke the glass unintentionally.

It seems possible however, to get manner readings also with this class of adverbs, as when Austin (1956) explains that (12) may be taken to mean "in a noteworthy *style* – pause after each mouthful, careful choice of entry for the spoon, sucking of moustaches, and so on", but the opposition is much less regular and more idiosyncratic than with other classes.

(12) He deliberately ate his soup. (Austin 1956: 25)

Taverniers & Rawoens (2010) list some semantic and syntactic properties of different classes of adverbs, and give a useful overview of some of the terms that have been used by different authors. Ernst (2002) has quite detailed descriptions of the syntax and semantics of many of these adverbs.

It is the group of evaluative or subjective participant-oriented adverbs that mostly will be discussed here. This is partly just a methodological restriction, caused by the fact that many of treatments that I will discuss analyse this particular class, but it should be kept in mind that we find similar oppositions between different readings also with other adverbs.

Another issue that should be mentioned is that although in English we find the same form (*-ly* adverb) used with both the manner reading and the participant-oriented reading (something which also applies for French adverbs in *-ment*), this is not a general property cross-linguistically. In German, the participant-oriented reading (and clausal readings of other adverbs) are marked with the suffix *-weise*, and in Scandinavian post-modification with *nog/nok* "enough" is a productive way of forming participant-oriented evaluatives.[1]

1 See (Ramat & Ricca 1998: 209ff) for a discussion of these features in the languages in Europe, and the interesting hypothesis that the need for additional modification of adverbs with a clausal function is related to the lack of marking distinguishing adverbs from adjectives in these languages.

3.1.2 Previous analyses

The presentation here will have the same form as the discussion of different approaches to manner modification in the previous chapter. In particular, breadth will be prioritised over depth. Many of the proposals and suggestions reviewed here have already been criticised in depth elsewhere, but often only one or two at a time. A cursory overview could at least give a useful picture of the variety of suggestions that exists.

Specific advantages or disadvantages of the approaches will not be mentioned systematically. The aim is to get an overview of what basic notions and features different authors have invoked, and ultimately to see how these insights can be carried over to an analysis in Conceptual Semantics.

Jackendoff (1972 [1969])

In Jackendoff's early analysis, adverbs that give rise to participant-oriented readings or manner readings differ both in their syntactic attachment (under S or VP) and in the interpretive rules that relate the syntactic structure to the semantics. Adverbs with a participant-oriented reading get a semantic structure according to the template in (13), where the term represented by NP^i corresponds to the participant which is evaluated in some way (which is either the surface subject or an underlying subject in Jackendoff's analysis).

(13) $\mathrm{ADJ}(\mathrm{NP}^i, f(\mathrm{NP}^1, \ldots, \mathrm{NP}^n))$ (Jackendoff 1972: 70)

Manner adverbs are interpreted by the template in (14), where the semantic features of the adverb are combined with the semantic function denoted by the verb without changing the functional or thematic structure.

(14) $\begin{bmatrix} f \\ \mathrm{ADV} \end{bmatrix}(\mathrm{NP}^1, \ldots, \mathrm{NP}^n)$ (Jackendoff 1972: 71)

Filling these schematic representations with material from the examples in (1), we get the representations in (15) and (16).

(15) **rude**(**louisa**, **depart**(**louisa**))

(16) $\begin{bmatrix}\textbf{depart}\\ \textbf{rude}\end{bmatrix}$(**louisa**)

Wilkinson (1970)

Wilkinson discusses sentences with participant-oriented adjectives and adverbs, and notes that these are factive in the sense that the truth of the complement is presupposed.

(17) a. Mike was wise to go.
b. Wisely, Mike went.
c. ⇒ Mike went.

Despise this factive character, Wilkinson claims they should not be derived from an underlying structure with a head noun *fact*, since the adjectives in question cannot be predicated of *fact*.

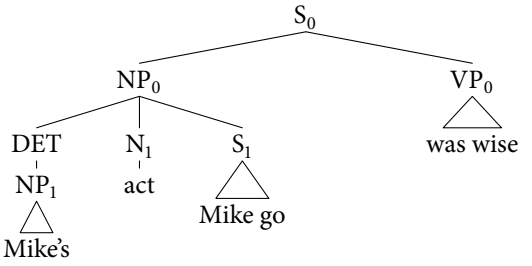
(18) *The fact that Mike went was wise.

Wilkinson instead proposes an analysis for these adjectives where there is an underlying noun *act* (or *action*, *deed*), since this is more compatible with their meanings, as shown by the paraphrase in (19).

(19) The act of Mike's leaving was wise.

The representation in (20) is suggested as an underlying structure for sentences with adjectives, like (17a) and other variants.

(20)



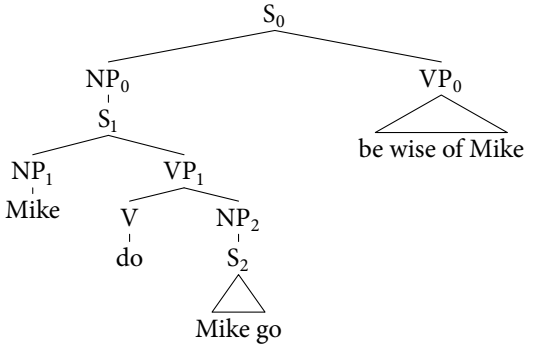
(Wilkinson 1970: 439)

For the sentences with participant-oriented adverbs, Wilkinson (1970: 426) notes that these have paraphrases where the adverbs modify a higher verb *do*, which is not possible for the adverbs with manner

readings. For this construction, as well as the simple sentences with the participant-oriented adverbs, Wilkinson suggests the structure in (22).

(21) a. Mike did wisely { to leave | in leaving }.
b. *Mike did loudly { to shout | in shouting }.

(22)



(Wilkinson 1970: 440)

Bartsch (1976 [1972])

Bartsch analyses (sentence) adverbs like *klugerweise* "cleverly/prudently" by relating an event of the type denoted by the verb to a different event of the type "acting", which is modified by the corresponding manner adverb (*klug*). In (23), the two events are equated. This is the proper analysis when the sentence can be paraphrased: "Louisa departed. In doing so she acted cleverly/prudently". When a causative interpretation is possible – where the paraphrase: "This happened out of cleverness" is acceptable – the conjunct $e_1 = e_2$ can be replaced with **cause**(e_2, e_1).

(23) **depart**(**louisa**) $\wedge$ $e_1 = \iota e$[**depart**(**louisa**, e)]
$\wedge$ $e_2 = \iota e$[**act**(**louisa**, e)] $\wedge$ **rude**(e_2)
$\wedge$ $e_1 = e_2$[2]

2 The original formulation is given in (i). Here "a_2" refers to an adverb of the participant-oriented type, and "A_2" "stands for the unanalyzed predicate 'is acting ADV_2', where ADV_2 is the manner adverb that corresponds to a_2" (Bartsch 1976: 94). The conjunct "act(v_1)" is a selection restriction that restricts this class of adverbs to only occur with action events.

Thomason & Stalnaker (1973)

Thomason & Stalnaker do not specifically discuss the opposition we are interested in, but they do treat some other cases of adverbial oppositions that might be instructive to look at.

One issue they do address is the so-called *passive-sensitivity* of certain adverbs (which includes the participant-oriented evaluatives as well as the volitional adverbs). In the passive it might be ambiguous whether these adverbs ascribe properties to the grammatical subject or to the agent (the subject of the active). This is represented by an interaction of the scope of the predicate operator and predicate formation via lambda abstraction, as indicated in (25).

(24) a. The doctor reluctantly examines Mary.
b. Mary is reluctantly examined by the doctor.

(25) a. **reluctantly**(λx[**examine**(x, **mary**)])(**doctor**)[3]
b. **reluctantly**(λy[**examine**(**doctor**, y)])(**mary**)[4]

A similar type of analysis is given for the opposition in (26), where the pre-verbal placement of the adverb conveys most prominently that Sam directed his care towards the global action of slicing the bagels (perhaps making sure that he did not forget any), whereas the sentence with the adverb in end position conveys more naturally that Sam was being careful with each bagel. This opposition is represented in (27) with a different scope between the quantifier and the predicate operator.

(26) Sam {carefully} sliced all the bagels {carefully}.

(27) a. **carefully**(λx[$\forall y$[**slice**(x, y)]])(**john**)[5]
b. $\forall y$[**carefully**(λx[**slice**(x, y)])(**john**)][6]

(i) $\underline{pa_2: F(x_1)a_2: F(x_1).(1) \textit{ or } F(x_1).(2)}$
where
$\left.\begin{matrix}(1)\\(2)\end{matrix}\right\}: v_1 = (iv)[F(x_1)]^*(v)(t_1).\ act(v_1).\ v_2 = (iv)[A_2(x_1)]^*(v)(t_1).\ \left\{\begin{matrix}v_1 = v_2\\cause(v_2, v_1)\end{matrix}\right\}$
(Bartsch 1976: 93f)

3 $(\hat{x}\xi(\hat{y}Pxy(b))(a)$ [*sic*] (Thomason & Stalnaker 1973: 213, n. 27)
4 $(\hat{y}\xi(\hat{x}Pxy)(a))(b)$ (Thomason & Stalnaker 1973: 213, n. 27)
5 $\xi(\hat{y}(x)Pxy)(a)$ (Thomason & Stalnaker 1973: 204)

A scope approach is also available with interactions of adverbials as in (28), where the adverb in the pre-verbal position can be used to mean that John was careful to assure that the eggs ended up at the wrong house, whereas in the post-verbal position only the carrying of the eggs is within the scope of the adverb (Thomason & Stalnaker 1973: 216f).

(28) John {carefully} carried the eggs {carefully} to the wrong house.

(29) a. **carefully**(**to-the-wrong-house**(λx[**carry**(x, **eggs**)]))(**john**)
b. **to-the-wrong-house**(**carefully**(λx[**carry**(x, **eggs**)]))(**john**)

The problem with using a simple scope analysis like this to account for the different orientations we find in (1) is that if *depart* just corresponds to a predicate **depart** in both readings, there are not enough positions to let the operator **rudely** have different scopes, as McConnell-Ginet (1982: 161) remarks. To account for the different readings with a predicate operator taking different scopes, either one or both of the readings would have to correspond to a more complex formula.

Dik (1975)

Dik's focus is on the manner adverbs, but he mentions the participant-oriented readings (which he calls *sentence adverbials*) in his discussion to set them apart from the manner adverbs.

He points out that Wilkinson's (1970) idea of using a head noun *act* or *action* in the analysis is not general enough, since these adverbs are also possible with some stative and negative sentences, for which the *act*-paraphrases are not as felicitous.

(30) a. Wisely, John sat on the fence. (Dik 1975: 105)
b. Wisely, John didn't answer the question. (Dik 1975: 106)

(31) a. #John's act of sitting on the fence was wise.
b. #John's act of not answering the question was wise.
(Dik 1975: 121)

6 $(x)((\xi\hat{y}Pxy)(a))$ (Thomason & Stalnaker 1973: 204)

Dik' point is that it is not the activity denoted by the clause which is commented on by these adverbs, but some activity which has led to the situation in question. A comment on the fact that someone undertook an activity is a comment on their choice of doing so. Since decisions lay behind both the stative and negative sentences in (30), these decisions can be characterised as being wise, even though the states themselves cannot. This leads Dik to propose the following schemas to account for the opposition:

(32) *Sentence adverbial:*
Speaker judges that it be *F* of controlling subject *x* to choose/decide (not) to do *y* Dik (1975: 109)

(33) *Manner adverbial:*
Controlling subject *x* do *y* in a *G* manner Dik (1975: 109)

Although Dik in these schemas refers to the "controlling subject", this should not be taken to imply that it is necessarily the grammatical subject of the clause which is referred to, since he gives (34) to illustrate that the evaluation may apply to a controlling force that is not mentioned in the sentence but merely implied.

(34) Wisely, the book costs only ten shillings.
(Greenbaum 1969: 155f)

Piñón (2009) also proposes an analysis that involves the meaning "decide", as a refinement of McConnell-Ginet's (1982) analysis (which is described in the next section). Piñón proposes that the participant-oriented reading involves a "decision"-event which the adverb is predicated of, and which is the cause of the event denoted by the clause. With the manner adverb, the same predicate applies directly to this event.

(35) $\exists e \exists e' [\mathbf{depart}(\mathbf{louisa}, e) \wedge \mathbf{decide}(\mathbf{louisa}, \lambda e'' [\mathbf{depart}(\mathbf{louisa}, e'')], e') \wedge \mathbf{rude}(e') \wedge \mathbf{cause}(e', e)]$[7]

(36) $\exists e [\mathbf{depart}(\mathbf{louisa}, e) \wedge \mathbf{rude}(e)]$[8]

7 $\text{rudely}^a \rightsquigarrow \lambda A \lambda x \lambda e . \exists e'' (\mathbf{decide}(e'', x, [\wedge \lambda x' \lambda e' . A(e', x')](x)) \wedge \mathbf{cause}(e'', e) \wedge A(e, x) \wedge \mathbf{rude}(e''))$ (Piñón 2009: 6)

McConnell-Ginet (1982)

As we saw in the discussion of manner modification (pages 27–28), McConnell-Ginet (1982) analyses manner adverbs as Ad-Verbs, which are complements to a predicate α^+ which is an "augmented" version of the predicate α denoted by the verb that has an extra position for the adverb.

The participant-oriented adverbs are of another type. Syntactically, they are external to the VP, and semantically they are operators that can be applied to the semantic value of the VP. They are related to the Ad-Verb through the word-formation rule (37).

(37) Let ξ be a lexical member of the category AD-V. Define ξ' in IV/IV (an adverb whose operand is a VP), formally identical with ξ, so that for β, an expression in IV, $\xi'\beta$ is synonymous with *act* ξ *to* β. (McConnell-Ginet 1982: 173)

This rule derives a homonymous participant-oriented adverb *rudely*$_{\text{AD-VP}}$, which occurs under S, from the manner adverb *rudely*$_{\text{AD-V}}$, which occurs under VP. Semantically, *rudely*$_{\text{AD-VP}}$ is defined so as to be synonymous with *act rudely*$_{\text{AD-V}}$ *to VP*, where *rudely*$_{\text{AD-V}}$ modifies the verb *act* as a regular manner adverb. This word-formation rule makes the sentences in (38) equivalent by postulation.

(38) a. Louisa rudely departed.
b. Louisa acted rudely to depart.

The relations between the manner adverb and the derived participant-oriented adverb can be indicated with the interpretations in (39), with representations of the sentences in (1) given in (40).

(39) a. *rudely*$_{\text{AD-V}}$ $\rightsquigarrow$ **rudely**
b. *rudely*$_{\text{AD-VP}}$ $\rightsquigarrow$ $[\![$*act rudely*$_{\text{AD-V}}$ *to*$]\!]$
$\rightsquigarrow \lambda P.\lambda x[\mathbf{act}^+(x, P, \mathbf{rudely})]$

(40) a. $\mathbf{act}^+(\mathbf{louisa}, \mathbf{depart}, \mathbf{rudely})$
b. $\mathbf{depart}^+(\mathbf{louisa}, \mathbf{rudely})$

8 $\text{rudely}^m \rightsquigarrow \lambda E\lambda e.E(e) \wedge \mathbf{rude}(e)$ (Piñón 2009: 6)

McConnell-Ginet also remarks that it could be possible that different verbs than *act* should be used to relate the Ad-Verb to the VP in some cases, but that "*act* seems to do the job quite nicely" for the cases considered (McConnell-Ginet 1982: 173).

Jackendoff (1983)

Jackendoff (1983) does not discuss the semantics of adverbs in any depth, but in a note he gives a comment on a possible analysis within the framework he is developing. Before quoting this analysis, it is necessary to give a brief explanation of the treatment of action sentences in (Jackendoff 1983), since it is different in some respects from the account presented in the introduction (§ 1.2.2, pages 13–18).

In the proposal of Jackendoff (1983), the Action category is of a quite particular type. It is special since it always comes paired with another category, viz. Actor. The two together form an Event, and the Actor binds into a participant slot in the Action. The well-formedness rule (41) specifies that an Event that consists of an Action–Actor pair is equivalent to the Event represented in the usual plain form.

(41) $[_{\text{Event}}\, \text{F}(\text{X}_i, \text{Y}_j, \text{Z}_k, \ldots)] \leftrightarrow$

$$[_{\text{Event}}\ \begin{bmatrix}\text{ACTOR}\\ \text{X}\end{bmatrix}_i, [_{\text{Action}}\, \text{F}(i, \text{Y}_j, \text{Z}_k, \ldots)]]$$

(Jackendoff 1983: 180)

Jackendoff (1983) suggests that this differentiation can be the right place to locate the differences in orientation between adverbs classes:

> The semantic analysis of [EVENTS] and [ACTOR]-[ACTION] pairs helps differentiate various syntactic and semantic classes of adverbs described in Jackendoff (1972, chapter 3). *Manner* adverbs, which appear in VP, are modifiers of [ACTIONS]; WILLFUL is just one case of such a modifier. *Subject-oriented* adverbs are attached to S and refer to some property of the [ACTOR], as in "Slowly John counted the beans." *Neutral* and *speaker-oriented* adverbs, such as "fortunately" and "frankly," are also attached to S but are modifiers of the whole [EVENT] or [STATE].
>
> (Jackendoff 1983: 258, n. 8)

The adverb meanings Jackendoff uses to exemplify the classes of adverbs are perhaps a bit unfortunate, since *slowly* only refers to a

property of participants in a very indirect sense, and is primarily related to processes. In the main text, Jackendoff (1983: 182) discusses whether WILLFUL should be associated with the Action or the Actor constituent, and takes the grammatical evidence that adverbials that indicate volition are attached to the VP rather than the subject as supporting the association with the Action semantically, even though in the expressing of volition, the Actor participant is involved as well.

Jackendoff (1990, 2009) treats Actions in a slightly different way, where the macrorole (or *action*) tier is introduced. Here, the Actor role is captured by having a participant as the first argument to the AFF function on the macrorole tier, as illustrated in (42).

(42) $\left[\begin{array}{r} F(X^{\alpha}, \ldots) \\ \text{Situation, +Action } \alpha \text{ AFF} \end{array}\right]$ $\longrightarrow$ *Thematic tier*
$\longrightarrow$ *Macrorole tier*

The proposal made by Jackendoff (1983) of locating the difference between manner and participant-oriented adverbs in the Actor–Action distinction has to my knowledge not been re-addressed in light of the introduction of the macrorole tier.

Ernst (1984)

Ernst treats the difference between clausal and manner readings for a wide range of adverbs, but only the participant-oriented adverbs will be mentioned here. His main point is that the predicate denoted by the adverb should be the same in both readings, and that the difference between them should be accounted for by some other aspect of the representation. The specific proposal is that the manner and the participant-oriented readings both have an interpretation of the form given in (43), but that they differ in their value for α.

(43) The agent can be judged ADJ because of α, given normal assumptions about α and in the context of the situation designated by the sentence. (Ernst 1984: 39)

For the participant-oriented reading, the value of α is "the Situation embodying agent's acting" (Ernst 1984: 36), which is given as the referent of the sentence ("the nominalization of the sentence without

the adverb" (Ernst 1984: 261)). For the manner reading, α is something like "some attribute of the verb-referent" (Ernst 1984: 91; see also p. 64).

The different instantiations of α are licenced according to the adverb's position in the syntactic structure. The manner reading involves a relation which holds between the referent of the verb and some attribute of it (here: **attribute-of**), and the adverbial predicate is marked with an asterisk, which indicates that the the value of α is an attribute.

(44) **depart**(**louisa**) ∧ **rude**(**louisa**$^{\beta}$, **depart**(β))[9]

(45) **depart**(**louisa**) ∧ ∃*w*[**attribute-of**(*w*, **depart**) ∧ **rude***(**louisa**, *w*)]

Croft (1984)

In Croft's view, a sentence like our (1a) with the participant-oriented reading of *rudely* describes "the performance of the act itself (as opposed to its nonperformance)", by asserting "that the fact that the event happened under those circumstances, as opposed to its not happening at all or to some other event's happening, was rude". With the manner reading on the other hand, "only some property of the event rather than its existence is asserted to be rude" (Croft 1984: 9ff).

Croft's solution to the question of how to represent this distinction is to say that there are two different things that are characterised as being rude in these sentences. One is the event under description itself, represented by an event variable, which is what is involved in the manner reading. The other is the state of affairs that there actually exists an event satisfying the event description. This more abstract state of affairs is what is involved in the participant-oriented reading. It is represented by an operator **FACT**, which maps a proposition to the state of affairs of that proposition being true. The predicate

9 Ernst treats the sentence {*Rudely,*} *Donald left the meeting* {*rudely*}, and gives the following representations:

(i) LEAVE (D, mtg) & RUDE (D$_i$, LEAVE (x$_i$, mtg)) (Ernst 1984: 92)

(ii) LEAVE (D, mtg) & (∃w) ATTRIB (w, LEAVE) & RUDE*(D,w) (Ernst 1984: 92)

corresponding to *rude* is the same in both readings: a two-place relation consisting of a participant and an event/state-of-affairs.

This analysis gives the representations in (46) and (47) for the examples in (1).

(46) $\exists e$[**depart**(**louisa**, e) $\wedge$ **rude**(**louisa**, **FACT**(**depart**(**louisa**, e)))][10]

(47) $\exists e$[**depart**(**louisa**, e) $\wedge$ **rude**(**louisa**, e)]

Some other authors that propose an analysis of the participant-oriented readings as involving a "fact"-operator are Parsons (1990)[11], Wyner (2008)[12], and (Geuder 2002, 2003) (see pages 73–74).

Vendler (1984a)

Vendler analyses actions as "events in a causative frame (done or performed by some agent)", which has the general form "(agent) does c(event)" (Vendler 1984a: 298f), where "c" represents the causative

10 Croft discusses the sentences {*Rudely,*} *Maggie spoke* {*rudely*} *to the Queen*, and gives the following representations:

(i) $\exists e$[Speak(e, Maggie, Queen) & Rude(Maggie, FACT(Speak(e, Maggie, Queen)))]. (Croft 1984: 15)

(ii) $\exists e$[Speak(e, Maggie, Queen) & Rude(Maggie, e)] (Croft 1984: 15)

11 Parsons's brief proposals involve predicates that relate a participant either to a proposition (indicated with a caret) or a propositional fact (indicated with an upwards pointing arrow).

(i) a. Rude(x,"^"[x insults y]) (Parsons 1990: 64)
b. Rude(x, ↑ [x insults y]) (Parsons 1990: 291, n. 28)

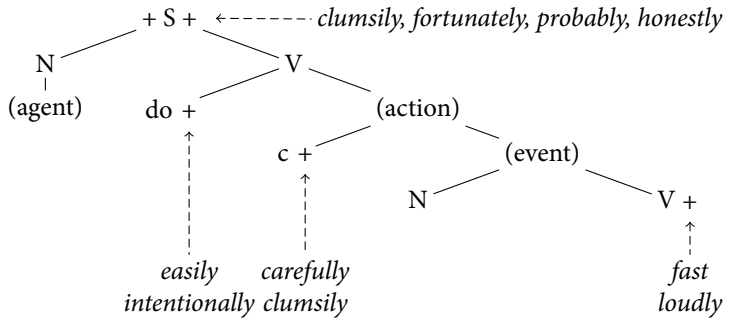
12 Wyner treats the participant-oriented adverb *rudely* as a predicate of a fact argument, which is retrieved by the function "FACT" from a *literal*: "a positive or negative expression which is true or false in a world", e.g. "lambda-reduced expressions which are existentially closed over the event argument" (Wyner 2008: 264). Manner adverbs are predicates of event arguments.

(i) $\lambda P\ \exists$f [FACT(P) = f $\wedge$ stupid(f)], where P is a literal and f is an individual fact. (Wyner 2008: 264)

(ii) $\lambda P\ \lambda e$ [$P(e)$ $\wedge$ **passionate**(e)] (Wyner 2008: 261)

frame. He then uses this schema to place various classes of adverbs. The following diagram illustrates the general form of an action sentence like *He drove the car*. The plus signs indicate slots for adverbs, and the lowest *V* here represents the caused event the object participates in, here something like "run".

(48)



(Vendler 1984a: 300) (adverbs added)

The lowest slot is for adverbs that characterise the event itself. *He drove fast* implies *The car ran fast*. The manner adverbs modifying "c" describe the performance of the action. When driving carefully, the car does not run carefully. Here we find manner readings of adverbs such as *clumsily* and *rudely*. As for the "do"-slot, Vendler mentions two groups of adverbs. One example is the adverb *easily* meaning "without difficulty", which "does not qualify the event, or the action performed in itself, but the doing of the action" (Vendler 1984a: 301). One can say that someone did some careful driving, but not that he did some easy driving (with the right sense of *easy*). *Intentionally* shares the "do"-slot with *easily*, but differs in that it does not describe the act with respect to an agent ("easy for X") but describes a condition of the agent (his intentional attitude) in the performance of the act.

The class of sentence adverbs includes content-oriented evaluatives (*fortunately*), modal and speech act-related adverbs (*probably*, *honestly*), as well as *clumsily* in the participant-oriented reading.[13] An important criterion for sentence adverbs status is questioning. The participant-

13 Vendler (1984b: 377f), however, takes *clumsily* and *stupidly* in the participant-oriented reading to be modifiers of "do".

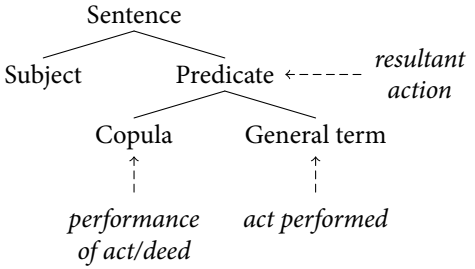
oriented reading cannot be questioned using the simple sentence (49a), but has to be questioned in a matrix sentence of its own as in (49b).

(49) a. Did he drive stupidly? [only manner, ≈ *How did he drive?*]
b. Wasn't it stupid of him that he did so? (Vendler 1984a: 302)

Clark (1986)

Clark analyses predicates as consisting of a copula and a general term. For actions the copula is **does**, so that the predicate that corresponds to *run* is something like: [$_{\text{Predicate}}$ [$_{\text{Copula}}$ **does**] [$_{\text{Gen. term}}$ **run**]]. This composition of predicates makes available three slots for modifiers, which allows for three different characterisations with respect to the predicate: (i) of the act performed, (ii) of the performance of the act, or (iii) of the resultant action. The structure of a subject–predicate sentence in this analysis is represented in (50).

(50)



In (51), *naively* functions as a predicate modifier, and the characterisation is inspecific: "We don't know whether John's naiveté consisted in his acting at all, or in the act chosen, or in the manner of its being done" (Clark 1986: 383).

(51) At the concert, John naively vigorously applauded loudly between movements. (Clark 1986: 382)

In Clark's analysis, one way of interpreting the adverbs in (51) is with the combination of modifiers in (52).

(52) [$_{\text{Predicate}}$ **naively**([$_{\text{Copula}}$ **vigorously**(**does**)]
[$_{\text{Gen. term}}$ **loudly**(**applaud**)])](**john**)[14]

14 [Naively{(vigorously Does) (loudly Applaud)}](John) (Clark 1986: 383)

We find another reading of *naively* in (53), where the predicate has the form in (54).

(53) Sophisticatedly, the politician naively moralized professionally to his local constituency about abortion. (Clark 1986: 387)

(54) [$_{\text{Predicate}}$ **sophisticatedly**([$_{\text{Copula}}$ **professionally**(**does**)] [$_{\text{Gen. term}}$ **naively**(**moralize**)])][15]

This reading must also be contrasted with one where the politician is "moralizing naively", where *naively* "would have been a characterization of his performance of the act" (Clark 1986: 387) as a copula modifier.

The modifiers corresponding to *naively* in all these cases belong to different semantic categories: "They are paronymous occurrences of different modifiers". And as Clark (1986: 387) remarks, the question then becomes what the common lexical content of these modifiers consists of, and how this should be represented. Clark does not give a complete answer to this question, but notes that it does not seem to be a matter of logical form alone, and that the implicative consequences of the same adverb in different positions can only be read off "with the help of substantive, perhaps defeasible, *ceteris paribus*, generalizations" (Clark 1986: 387).

Higginbotham (1989)

Higginbotham gives an analysis of the opposition in (1) where *rudely* is ambiguous between two predicates $\mathbf{rude}_a$ and $\mathbf{rude}_b$, and where there also are two different predicates $\mathbf{depart}_0$ and $\mathbf{depart}_1$ involved.

The predicate $\mathbf{depart}_0$ is a theoretical construct that does not correspond to any English verb. This predicate applies to all events that are "departures". From this basic predicate we can derive the predicate $\mathbf{depart}_1$ that corresponds to the verb in *John departed*, which applies to departure events and to the participants in them who depart, as illustrated in (55) (where 'θ' represents whatever semantic role the person departing has).

(55) $\mathbf{depart}_1(x, e) \leftrightarrow \mathbf{depart}_0(e) \wedge \theta(x, e)$

15 [Sophisticatedly{(professionally Does) (naively Moralize)}). [*sic*] (Clark 1986: 387)

This notion of related predicates is perhaps better illustrated by Higginbotham's example with *spray*, where we have different predicates corresponding to the verbs in *spray the paint* and *spray the wall*.

(56) a. $\textbf{spray}_1(x, y, e) \leftrightarrow \textbf{spray}_0(e) \wedge \textbf{Actor}(x, e) \wedge \textbf{Medium}(y, e)$
b. $\textbf{spray}_2(x, y, e) \leftrightarrow \textbf{spray}_0(e) \wedge \textbf{Actor}(x, e) \wedge \textbf{Direction}(y, e)$
(Higginbotham 1989: 474)

In the representation (57) of the manner reading of *rudely* in (1b), we find the predicate $\textbf{rude}_a$ which says that the event e was rude for an event of the type $\textbf{depart}_0$ (some predicates might relate the event to a class of events relative to a participant as well, as in *depart rather graciously for her*).

(57) $\exists e[\textbf{depart}_1(\textbf{louisa}, e) \wedge \textbf{rude}_a(e, \lambda e'[\textbf{depart}_0(e')])]$[16]

In the representation of the participant-oriented reading (which Higginbotham calls *stative*), we find the predicate $\textbf{rude}_b$ instead, which has an additional argument slot for the person that is considered rude. The attribute with respect to which Louisa is considered rude is also relativised to being a departure of Louisa, and not just a departure *tout court*.

(58) $\exists e[\textbf{depart}_1(\textbf{louisa}, e) \wedge \textbf{rude}_b(e, \textbf{louisa}, \lambda e'[\textbf{depart}_1(e', \textbf{louisa})])]$[17]

Higginbotham does not propose any general link between the predicates $\textbf{rude}_a$ and $\textbf{rude}_b$. In light of adverbs like *intentionally*, which does not have a clear manner reading, and *loosely*, which does not have a participant-oriented reading, he concludes that "For the moment, then, there is no general way of tying the stative and manner adverbials together, except by comments on their individual meanings" (Higginbotham 1989: 480).

16 The original formulation is (i), where '[¶ … ¶]' is used for intensional abstraction.
(i) depart(e, x) & rude(e, [¶e': depart$_0$(e')¶]) (Higginbotham 1989: 478)

17 (Ee) rude(e, Lisa, [¶e': depart(e', Lisa)¶]) & depart(e, x)
(Higginbotham 1989: 479)

Swan (1990)

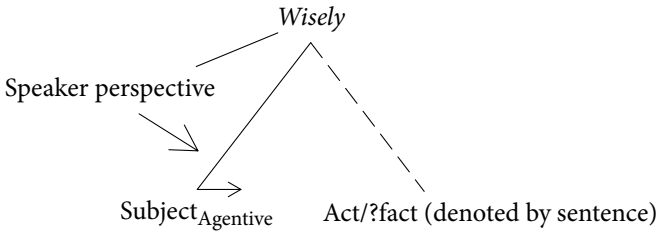
Swan does not give any formal representations of different types of orientation with adverbs, but she does present many useful observations, and a good overview of some semantic and syntactic properties of adverbs (and verbs) that are possible with a participant-oriented reading. (See also (Swan 1988a,b) for interesting data on the development of sentence adverbs in English.)

Swan's conclusion is that manner and participant-oriented readings of adverbs differ in what she calls "cognitive scope", which consists of the clause elements that the adverbs "latches onto and modifies" (Swan 1990: 23f).

In Swan's view, the participant-oriented adverbs like *wisely* in (59) are "basically predicative and semantically specify the subject; the principal part of the scope is the subject" (Swan 1990: 36). This is impressionistically illustrated with the figure in (60), where the principal scope over the subject is indicated with a solid line, and the secondary scope over the act is marked with a dotted line. The speaker perspective that is involved in the participant-oriented reading is a subtype of cognitive scope that Swan calls *metascope*, which includes information related to the utterance act, like its felicity conditions, the speaker's evaluation or attitude of the utterance content, the reasons the speaker has for using the adverb and other kinds of pragmatic information.

(59) Wisely she left Paris. (Swan 1990: 25)

(60)

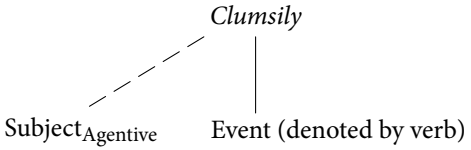


(Swan 1990: 25)

For the manner reading, Swan takes the principal scope of the adverb to be the described event. There can still be a particular link to other clause elements, though, and *clumsily* in (61) still has a certain relation to the subject.

(61) She walked clumsily. (Swan 1990: 25)

(62)



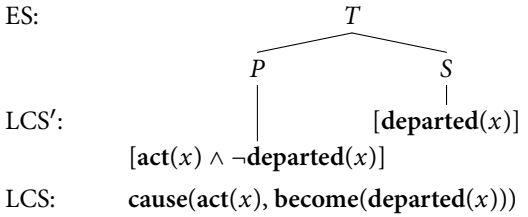
(Swan 1990: 25)

Pustejovsky (1991)

Predicates for Pustejovsky have both an event structure ES, where the aspectual properties are represented, and a lexical conceptual structure LCS′, which is partitioned according to the event structure, and with constituents that are linked to the ES constituents. From these representations a global LCS can be constructed.

A verb like *depart* is analysed as an accomplishment verb, with an event structure consisting of a transition (T), that goes from a process of departing (P) to the resulting state of being departed (S). A representation of this structure is given in (63).

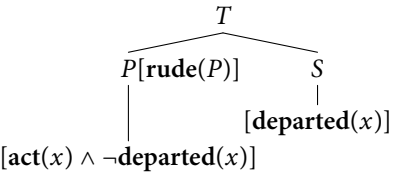
(63)



An adverb such as *rudely* modifies an action event, and since both the transition T and the process P are actions, there are two possible slots in (63) for the modifier that corresponds to *rudely*. Pustejovsky takes these two scopal positions to be what lies behind the opposition in orientation we find between the sentences in (1).

When only the initial event P is modified, as in (64), we get a manner reading, which says "that the action of leaving was performed rudely for those types of actions" (Pustejovsky 1991: 70).

(64) ES:

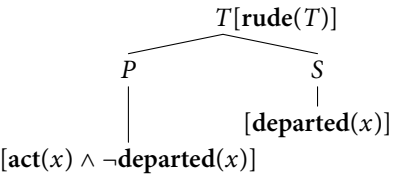


LCS′:

(Pustejovsky 1991: 70)

When the modifier has scope over the entire transition T we get the participant-oriented reading, with the same one-place predicate **rude** as in the representation of the manner reading.

(65) ES:



LCS′:

(Pustejovsky 1991: 70)

Nakamura (1997)

Nakamura's analysis is within the framework of Cognitive Grammar, and differs quite a bit from the other proposals that are described here. The relevant definitions are given in (66) and (67).

(66) *Process adjuncts:*
The class of adverbs that involve a schematic perfective process and do not serve as the profile determinant with respect to the verbs they modify. (Nakamura 1997: 267)

(67) *Subject-oriented adjuncts:*
The class of adverbs that contain sequential scanning and summary scanning that function as the standard and target, respectively, and serve as the profile determinant with respect to the verb they modify. (Nakamura 1997: 269)

In this analysis the Cognitive Grammar concepts of *scanning* and *profile determinant* are involved. The term *scanning* refers to ways of conceptualising content, and Nakamura defines the relevant modes as follows: "Sequential scanning involves successive transformations

of one configuration into another, and its component states are distributed through time, while summary scanning constitutes a single, coherent gestalt, and its component states are coexistent and simultaneously available" (Nakamura 1997: 257). The term *profile determinant* indicates which element in a composite structure determines the profile of the whole. With respect to manner adverbs, the verb is the profile determinant in a composite structure, since the profile of *run fast* is a temporally developing process in the same way as that of *run* is. As I understand it, subject-oriented adverbs serve as the profile determinant since they determine the mode of scanning of the whole (*summary scanning*). The terms *target* and *standard* refer to the figure–ground elements that are involved in a comparison.

The core idea is that when the process is conceptualised with summary scanning, where the temporal development is backgrounded and all the stages of the situation is seen as simultaneously available, the subject and the adverb are foregrounded as a result.

In a note, Nakamura (1997: 283, n. 24) also mentions the possibility of distinguishing between the manner reading and the participant-oriented reading through which elements are in the *active zone*, in that the manner readings has focus on the process denoted by the verb, while in the participant-oriented reading it is the subject that is in focus.

Ernst (2000a, 2002)

Ernst uses an event-based semantics, and takes the core meaning of adverbs like *rudely* to be a predicate that evaluates an agent with respect to an event that he participates in. This holds for both the participant-oriented reading and the manner reading. But the evaluation is made with respect to a comparison class of events, and it is in this parameter that Ernst takes the main difference between the two readings to lie.

In (1a), the sentence with the participant-oriented reading of *rudely*, Louisa is considered rude to have departed. Her act of departing is implicitly evaluated against other actions she could have performed – perhaps especially actions that would have involved her staying. Ernst takes the comparison class in this case to be "other possible events in that context" (Ernst 2000a: 340) or "all relevant events in context" (Ernst 2002: 58), here represented with the predicate **C** in (68).

(68) $\exists e[\textbf{depart}(\textbf{louisa}, e) \wedge \textbf{rude}(e, \textbf{louisa}, \lambda e'[\textbf{C}(e')])]$

With the manner reading however, the departing event is not contrasted with other possible events in general, but more specifically with other possible events of departing. In (69), this is achieved by restricting the comparison class to events satisfying the predicate **depart**. (It is not completely clear if the subject needs to be specified in the comparison class as well, as Ernst says both that the comparison class consists of events of "x F-ing" (Ernst 2002: 58) and of events of just "V-ing" (Ernst 2002: 59).)

(69) $\exists e[\textbf{depart}(\textbf{louisa}, e) \wedge \textbf{rude}(e, \textbf{louisa}, \lambda e'[\textbf{depart}(\textbf{louisa}, e')])]$

Ernst (2002) also posits another difference between the two readings, which involves what he calls the "designated relation" in the predicate that corresponds to the adverb. For the participant-oriented reading, this is something like "warrants positing" (Ernst 2002: 55). This simply means that the speaker takes the event in question (and the agent's involvement in it) to be grounds for ascribing the property to the agent. For the manner reading, the relation is a bit different: Ernst (2002: 56) glosses it as "manifests". The key idea is that the event has an appearance typical of the property in question, but it might not be a property the agent actually has, as with *to cleverly answer stupidly*, where the "answering" is stupid, but the agent is not.

One way of representing this difference is to include the "designated relation" as an argument to the relation, as in (70) and (71).

(70) $\exists e[\textbf{depart}(\textbf{louisa}, e)$
$\wedge \textbf{rude}(e, \textbf{louisa}, \lambda e'[\textbf{C}(e')], \text{"warrants positing"})]$[18]

(71) $\exists e[\textbf{depart}(\textbf{louisa}, e))$
$\wedge \textbf{rude}(e, \textbf{louisa}, \lambda e'[\textbf{depart}(\textbf{louisa}, e')], \text{"manifests"})]$

18 Ernst (2000a) includes the comparison class in his representation with the notation '¶ *e* ¶' which means "other possible *e*s in context". The asterisk on the *e* signals the different comparison classes of manner adverbs. The following examples represent {*Rudely,*} *she left* {*rudely*}:

(i) $\exists e$ [L(e) & Agt (e,she) &
$\exists e' \in \{ e'' \mid L(e'') \text{ \& Agt } (e'', \text{she}) \}$ RUDE (she, e′, ¶ e′ ¶)] [*sic*]

Geuder (2002)

Geuder gives his proposal for an analysis of "agentive" adverbs in the form of a quite detailed investigation of the lexical semantics of the adjective *stupid*. Abstracting away from some technicalities that need not interest us here, we can represent the structure of his analysis of the participant-oriented reading with the formula in (72).

(72) $\exists e \exists k[\textbf{fact-that}(k, P(\textbf{louisa}, e)) \wedge \textbf{stupid}(\textbf{louisa}, k)]$[19]

The predicate **stupid** takes as arguments a participant x and an abstract fact argument k. This fact is derived from an event description P of an event e where the participant is the agent. The meaning of **stupid** says that the event e caused some state of affairs s that is bad for x, and that the occurrence of e is in some way related to the mental capacity of x. That is, x should not have done e, because there was some alternative route of action open to him that would not have caused the unwanted

(ii) $\exists e$ [L(e) & Agt (e,she)] &
$\exists e'$ { e″ | L(e″) & Agt (e″, she) } RUDE (she, e′, ¶ e* ¶) [*sic*]
(Ernst 2000a: 340)

Ernst (2002) uses a different notation, where the asterisk marks the evaluated event and signals that a different comparison class is involved.

(iii) $[_{E'}\ [_{E}$ L(e) & Agt (e,she)] & RUDE ($[_{E}$ L(e) & Agt (e,she)], she)]

(iv) $[_{E'}\ [_{E}$ L(e) & Agt (e,she)] & RUDE ($[_{E}$ L(e) & Agt (e,she)]*, she)]
(Ernst 2002: 59)

19 Geuder's lexical entry for *stupid* is reproduced below in (i). The symbol '≈' denotes a "characterisation relation" which "serves to characterise an abstract object k (in this case, a fact) in terms of an event description in a DRS [Discourse Representation Structure]" (Geuder 2002: 135). The symbol *C* represents the context and *P* is a predicate describing the event which was stupid. The predicate *D* denotes the mental disposition of "stupidity" of an individual.

(i) $\text{stupid}_{C,\, w^*}(x)(k) = 1$
with $k \approx <\{e,x,\ldots\}, \{P_{w0}(e, x\ldots)\}>$ and:
(i) $C \vDash \exists e^*$: 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) $\forall w' \in W$: $\exists e\, [P_{w'}(e)(x)] \Leftrightarrow D_{w'}(x)$, [*sic*] (Geuder 2002: 170)

state of affairs *s*, and since *x* did not choose any of these other options, he is in some way stupid.

As far as I can see, Geuder (2002: 172–176) suggests that a representation of the manner reading should have the same general form. One difference between them lies in how the event description *P* that characterises the fact object *k* is arrived at. For the participant-oriented reading, this is instantiated through some sort of anaphoric resolution, and would be something like **depart** for our examples The context also supplies the alternative actions the agent could have performed, and which he was stupid not to.

For the manner reading, the type of *P* is given by the verb, and the alternative actions are therefore restricted to be of a certain event type. The actual value of *P* singles out a "manner" of the event, where the different manners of an event are "the alternative ways in which an event can unfold while still falling under the same event type" (Geuder 2002: 172).

There is also a difference between the readings' properties with respect to discourse structure, but this difference is not formally spelled out.

Geuder (2002: 172) suggests that the manner reading is "lexically derived" from the participant-oriented reading, by "predicate transfer on the basis of an agentive variant" (Geuder 2002: 174). The exact details of this derivation or transfer is not clear to me, so for any details I can only refer to the original.

Potts (2005)

An important property that distinguishes occurrences of adverbs with a participant-oriented reading from those with a manner reading is that the participant-oriented ones often are felicitously pronounced with a separate intonational contour, parenthetically detached from the intonation of the rest of the clause. Potts proposes an analysis of these adverbs in this construction, which he calls *supplements* after Huddleston & Pullum (2002).

The basic insight that Potts wants to capture is that utterances with participant-oriented adverbs do not seem to assert unitary propositions. What seems to be involved is both the assertion of a particular

proposition and an additional proposition which contains an evaluation related to this. Bellert (1977) takes sentences with evaluative adverbs (both participant-oriented ones as in (73) and content-oriented ones) to involve the assertion of two separate propositions.

(73) John { cleverly | wisely | carefully } dropped his cup of coffee.
(Bellert 1977: 339)

> Speaking in terms of truth conditions, we would say that the truth conditions of S (without the adverb) are the necessary truth conditions of the entire sentence, and moreover there are some additional truth conditions for the second proposition that John was clever (wise or careful) in what he did. In fact, we have here two propositions asserted in one sentence.
> (Bellert 1977: 340)

Another example that brings this out quite clearly is (74), where the speaker is saying both that the batteries were included, and characterising this as a thoughtful thing to do. This example also has the particular property that the participant which is evaluated as being thoughtful is not mentioned in the sentence. This is the reason why Potts (2005: 14) calls these adverbs *topic-oriented*, since he takes the implicit (thoughtful) participant in (74) to be a kind of discourse topic.[20]

(74) Thoughtfully, the batteries were included. (Potts 2005: 144)

Potts separates two dimensions of linguistic meaning, which he calls the *at-issue* dimension, and the *CI* dimension (*CI* for conventional implicature). At-issue content is what constitutes the main message of an utterance. In (74), the at-issue content is that the batteries were included. This is reflected by the fact that a response such as *That's*

20 Potts does not spell out what he means by *discourse topic*, but it seems odd that the unspecified agents that included the batteries in (74) should be treated as a discourse topic. Similarly for the attested example (i), from a review article of a computer keyboard.

(i) Thoughtfully, there is a clip-on cover for the connector while not in use.
(Potts 2005: 144)

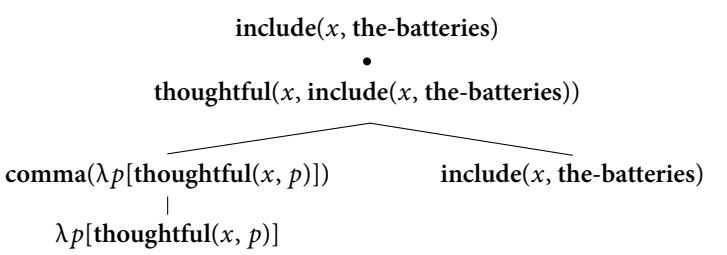
While the keyboard itself is a good candidate for being a discourse topic, its designers probably are not.

false! to an utterance of (74) is interpreted as as objection to the characterisation of the batteries as being included, and not as an objection to the characterisation of the battery-inclusion as thoughtful.

The CI dimension hosts de-emphasised speaker-committed entailments, which are partly independent of the at-issue dimension in that CI content can comment upon what is at-issue, but not vice versa. CI content thus cannot be targeted by at-issue operations such as negation, questioning and embedding.

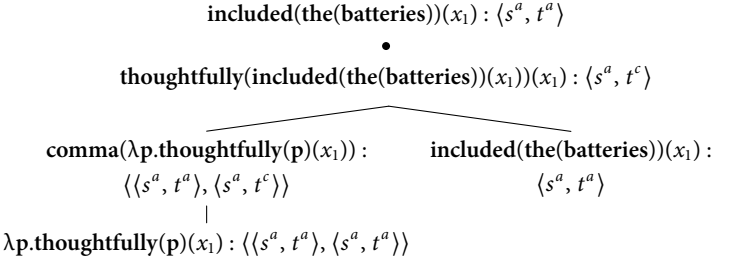
In (75) we see a representation of the example in (74).[21] The CI dimension is separated from the at-issue dimension with a dot in the top node of the tree. Here, the operator **comma** (which is thought to be expressed by the "comma intonation" associated with supplements) is what makes **thoughtfully** into a CI function, which lets its argument pass through unmodified in the at-issue dimension (above the dot), but adds a comment to it on the CI dimension (below the dot).

(75)



21 The representation is modified somewhat, the original is (i). The type s is an intensional type (a possible world) and t a truth-value. The types are superscripted for their dimensions: ^{a} marks at-issue types and ^{c} marks CI types.

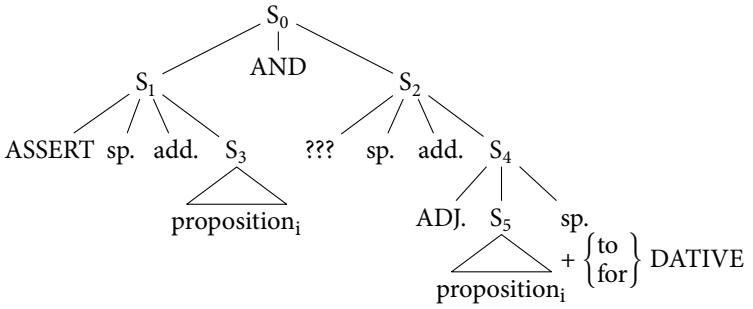
(i)



(Potts 2005: 144)

This analysis is in fact very similar in spirit to the one proposed by Corum (1974) represented in (76)., although the details of the implementations are rather different. Corum only discusses content-oriented adverbs like *fortunately*, which Potts gives an analysis that is similar to that of *thoughtfully* in (75), except that **fortunately** has just one argument place for the proposition.

(76)



(Corum 1974: 97)

An important difference from Potts's analysis is that the representation in (76) is formulated with a syntactic vocabulary. This is perhaps more a difference in the form of presentation than in conceptual content, though, as Corum explicitly says that the unpronounced elements like "ASSERT" are "abstract semantic notions with no phonological form" (Corum 1974: 99).

Another difference is that the illocutionary force associated with the different propositions (the bare proposition *p* and the evaluative proposition **fortunate**(*p*)) are explicitly represented. As for the illocutionary force indicator for the evaluative proposition, this is only represented with question marks in (76), and as possible candidates Corum gives OPINE, DEEM, ESTIMATE and JUDGE. Potts (2005) is not very committed to a particular force for his CI content either, and the most important point for both is that there is a clear difference from the asserted (at-issue) proposition.

Potts (2005) seemingly intends his analysis to only apply to the parenthetical use of participant-oriented adverbs, and does not directly treat the opposition between manner and participant-oriented readings. But the analysis does treat an important property of the participant-oriented adverbs since it is only they that have this supple-

mental use. Note however that the "double assertion" property that Bellert (1977) discussed does not only apply to parenthetical adverbs, as is clear from the integrated examples in (73) which she discusses in the quotation above. If the CI analysis is really meant to capture this insight, then the restriction to just the parenthetical adverbs is perhaps too narrow.

Rawlins (2008)

Rawlins focuses on content-oriented adverbs (*illegally*), but some parts of his analysis carry over to participant-oriented adverbs as well. The main point of Rawlins's proposal is that there is a core adverbial meaning which is common to both the evaluative and the manner readings, and that the difference is due to the scope of various elements. More specifically, the adverbial meaning is treated as a set of possible worlds with respect to which the clause meaning is evaluated. The operators that vary in their relative scope which are responsible for the meaning difference are the universal quantifier that ranges over the possible worlds picked out by the adverb, and the existential quantifier that binds the event variable that is the argument to the verbal predicate. With the same core meaning of the adverb in both cases, Rawlins is able to relate the two readings with a type-shifting rule.

Modifying Rawlins's (2008) format of representation somewhat, we can give an analysis of our participant-oriented example (1a) with the representation in (77), and analyse the example (1b) with the manner reading of *rudely* as in (78).[22]

Notice that in the participant-oriented example, there is no direct predication of rudeness to Louisa, as we find in some other accounts. This is an issue that Rawlins mentions, but does not discuss due to lack

22 The representations in (77) and (78) are based on the following from the original, which treat the sentences {*Rudely,*} *Alfonso departed* {*rudely*}. The participant-orientated reading is analysed as in (i) (marked with $_{\mathrm{H}}$ for *high*), and the manner reading is analysed in (ii) (marked with $_{\mathrm{L}}$ for *low*). Here *b* is a function (called a "conversational background") picked out by the context *c*, which maps worlds to sets of worlds. The context also picks out the time interval t^*, which in the past tense contains the culmination point of the event (represented with Cul) and is prior to the evaluation time *t*. D_s and D_v are the domains of possible worlds and eventualities respectively.

of space (Rawlins 2008: 97), as his main focus are the content-oriented adverbs.

(77) $\lambda w.\exists e[\textbf{depart}_w(\textbf{louisa}, e)]$
$\wedge\ \forall w' \in \text{PoliteWorlds}[\neg\exists e'[\textbf{depart}_{w'}(\textbf{louisa}, e')]$

(78) $\lambda w.\exists e[\textbf{depart}_w(\textbf{louisa}, e)$
$\wedge\ \forall w' \in \text{PoliteWorlds}[\neg\textbf{depart}_{w'}(\,\cdot\,, e)]]$

The crucial difference between these representations concerns the material within the scope of negation, which is what is excluded from occurring in the worlds picked out by the meaning of the adverb. For *rudely*, these are the worlds where the norms of politeness are respected. With the participant-oriented reading, all events of Louisa departing (at that particular time) are excluded, since the negation has scope over the existential quantifier that binds the "departure" event variable. In the manner reading, what is excluded from occurring in the the ideal polite worlds are not all events of Louisa departing, but just the cross-world counterparts of the actual event of Louisa departing that takes place in the evaluation world. There will therefore be events of departing in the set of polite worlds, as long as they differ enough from

(i) $[\![\textbf{rudely}_{\text{H}}\textbf{, -ed Alfonso Voice depart}]\!]^{w,t,c} = 1$ iff

$$\left(\begin{array}{l} [\exists e : e \in D_v]\left(\begin{array}{ll} & e \text{ is a departing in } w \\ \wedge & \text{Cul}(e, t^\star, w) \\ \wedge & \text{Agent}(e, \text{Alfonso}) \end{array}\right) \\ \wedge\ [\forall w' : w' \in D_s \wedge w' \in \bigcap b_c(w)](\\ \qquad \neg([\exists e : e \in D_v]\left(\begin{array}{ll} & \text{Agent}(e, \text{Alfonso}) \\ \wedge & \text{Cul}(e, t^\star, w') \\ \wedge & e \text{ is a departing in } w' \end{array}\right) \end{array}\right)$$

(Rawlins 2008: 98)

(ii) $[\![\textbf{-ed Alfonso Voice depart rudely}_{\text{L}}]\!]^{w,t,c} = 1$ iff $[\exists e : e \in D_v]$

$$\left(\begin{array}{ll} & \text{Agent}(e, \text{Alfonso}) \\ \wedge & \text{Cul}(e, t^\star, w) \\ \wedge & e \text{ is a departing in } w \\ \wedge & [\forall w' : w' \in D_s \wedge w' \in \bigcap b_c(w)](\\ & \qquad \neg(e \text{ is a departing in } w')) \end{array}\right)$$

(Rawlins 2008: 98)

the actual departing to not be considered as a cross-world counterpart of this. Thus there must be some more specific property of the actual departing event which made it rude.

3.1.3 Summary

I hope that the brief presentations of proposals in the previous section have at least convinced the reader that there is no consensus on how to represent the difference in orientation that we are concerned with. Many of the suggestions are made within frameworks that are not easily comparable, so that a unity in representation would be unexpected, but there are many proposals that are framed within the same sort of model, including event individuals and with a form of representation grounded in predicate logic.

In Table 1 on page 82, a brief summary of the different argument relations that have been proposed is given. Some interesting differences in the argument frames will be discussed below.

Agent/subject One factor where there is a difference among the proposals is whether the agent (or subject) should be included in one or both of the readings. Some do not include the agent as an argument in either of the readings (Bartsch 1976, McConnell-Ginet 1982, Clark 1986, Vendler 1984a, Pustejovsky 1991, Rawlins 2008, Wilkinson 1970), and some include the agent in both (Ernst 1984, 2002, Dik 1975, Croft 1984). But for some, the inclusion of the agent as an argument is one of the characteristic features of the participant-oriented reading (Jackendoff 1972, 1983, Higginbotham 1989, Swan 1990). Oshima (2009) treats the participant-oriented reading with a predicate that only applies to the subject. The formula in (79) represents the sentence *Wisely, John left early*, and can be paraphrased: "John left early, and from this […], it can be inferred that John was being wise" (Oshima 2009: 372).

(79) **leave-early**(**john**)
$\wedge \Box_e$[**leave-early**(**john**) $\rightarrow$ (**transitorily**(**wise**))(**john**)]
(Oshima 2009: 372)

Fact Although the participant-oriented evaluatives have a strong factive character, the properties they denote are not directly predicable

of the noun *fact*, as noted by Wilkinson (1970: 429) and Bartsch (1976: 91f). *Fact* can still be invoked in a paraphrase, though, as when Dik says about a participant-oriented adverbs that "it comments on the very fact that he undertook that Activity" (Dik 1975: 106).

Croft (1984) and Geuder (2002) both propose analyses with a "fact" component, but not of the same type. For Croft this is a function that takes a proposition as an argument and returns the state of affairs which is characterised by that proposition being true. For Geuder it is an abstract object which the adverbial predicate combines with, but the determining factor in the interpretation is not the fact object itself but the predicate that it is characterised by, since it is this predicate that determines the set of alternative events the evaluation is made against.

Act/action An alternative semantic component to "fact" that some invoke in their analyses is "act/action/do". Wilkinson (1970), Bartsch (1976) and McConnell-Ginet (1982) employ it for their representations of the participant-oriented reading, influenced by the possible paraphrases "X *acted* ADJ-ly {to V | in V-inf}" and "S, which was an ADJ thing to *do*". Jackendoff (1983) and Vendler (1984a) also include an "action"-component, but for them it is the manner-oriented predicate that modifies this, and the noun *act* is of course also possible in the standard manner paraphrase "X *acted* in an ADJ manner".

For Ernst (2000a, 2002) and Geuder (2002) there is no specific "action" constituent involved in the representations themselves. But it appears in the determination of the comparison set of alternative events with respect to which the evaluation is made, which in the participant-oriented reading only is restricted to be an agentive action, whereas in the manner reading it is restricted to be of the specific event type that the verb denotes.

Aspectual structure Pustejovsky's (1991) analysis is based on a distinction which many of the other authors do not comment upon, namely that the manner readings are focused on the activity part of achievement concepts, whereas the participant readings involve the entire event, specifically including the result state. A similar distinction seem to be made by Nakamura (1997), in terms of the opposition between sequential scanning (manner) and summary scanning (participant orientation).

Table 1: Superficial summary of some of the proposed argument-relations to the predicates that figures in manner and participant-oriented modification.

Author	*Manner*	*Participant-oriented*
(Jackendoff 1972)	event-function	subject, event
(Wilkinson 1970)	?	sentence (with *act* or *do*)
(Bartsch 1976)	event	action event
(Dik 1975)	subject, manner	subject, decision to act
(McConnell-Ginet 1982)	verb	*act to* verb
(Jackendoff 1983)	action	actor
(Ernst 1984)	agent, event	agent, attribute of event
(Vendler 1984a)	cause component of action	sentence
(Croft 1984)	agent, event	agent, fact-situation
(Ernst 2000a, 2002)	agent event, events of specific type	agent, event, events of action type
(Clark 1986)	act performed/ performance of act	action
(Higginbotham 1989)	event, event type	event, agent, event type
(Pustejovsky 1991)	process sub-event	transition event
(Geuder 2002)	agent, fact	agent, fact
(Rawlins 2008)	event	event type

Relatedness between readings It is an advantage of an account if it relates the meanings of the two readings explicitly to one another, since although they clearly differ, they still seem to share a conceptual core. If the two readings are given different representations with different components and without any formal link between them, they would be treated in the same way as completely unrelated homonyms, and a clear generalisation would seem to have been missed. This is McConnell-Ginet's (1982: 157) objection to Jackendoff's (1972) analysis, and it could be repeated with respect to many of the later suggestions as well. Croft (1984), Ernst (1984, 2002), Geuder (2002) and Rawlins (2008) are perhaps those of the reviewed authors who places the greatest emphasis on the requirement that there should be an underlying common element to both interpretations.

3.2 Participant orientation in Conceptual Semantics

3.2.1 Preliminaries

As regards the question whether the evaluated participant should be represented in both readings, Ernst gives a very reasonable answer to this when he points out that concepts such as "clever", "wise", "rude" etc. only make sense for sentient beings, and when an action is described as having one of these properties "it can be so only with respect to the being performing it" (Ernst 2002: 473). Although it is clear that the agentive participant is much more prominent in the participant-oriented reading, it cannot be completely absent from the manner reading. To say that an action is rude is to say that it is rude of an agent to perform it. It is not satisfactory therefore, to account for the difference between participant and manner orientation simply with the presence or absence of the agent in the argument frame of the adverbial property, and the difference in prominence should thus be captured by some other means.

Regarding the factive property of the participant-oriented readings, it seems to me that this could be captured naturally without any factive operators or abstract fact objects (although such mechanisms might of course be useful in other respects). Piñón (2009: 4) comments on Geuder's (2002) fact object that a simpler way of representing factivity is with a conjunctive representation, which is what Bellert's (1977) early proposal consisted of. If the representation of a sentence that expresses the meaning p, and which contains an evaluative adverb expressing the property ADJ, is something like $p \wedge \text{ADJ}(p)$, the property that the sentence with the evaluative adverb requires the truth of the sentence without the evaluation is captured, since p figures as a separate conjunct.

In any case, factivity is not an entirely general property of all evaluatives, and a satisfactory account would need to allow evaluatives with non-factive sentences in certain restricted circumstances. This might not be more difficult in an account that includes fact objects or operators, since one could perhaps invoke conditional facts just as easily as conditional evaluations. See (Ramat & Ricca 1998: 223ff) for some data concerning the acceptability of evaluatives in non-factive

sentences (interrogatives and conditionals) in European languages, and (Ernst 2009) for a more in-depth discussion of this property in English.

But factivity in the sense that ADJ(*p*) requires the truth of *p* is just one aspect of role of "facts" in the description of participant orientation. Another is the explicit use of the noun *fact* in paraphrases such as "the fact that Agent VP warrants calling Agent ADJ". In my view, the semantic base for these paraphrases are better captured by looking at the set of alternative actions that are evoked (Ernst 2000a, 2002), than focusing on the use of the noun *fact* in the paraphrases. In this view, the "fact that"-paraphrase is just a way of expressing that the evaluation is made because of the agent performing the action denoted by the VP rather than some other action that could have been performed instead.

Closely related to the question of evoked alternatives is the issue of restrictive vs. non-restrictive modification. This is part of what McConnell-Ginet takes the difference between the readings to be, when she says about some examples exhibiting the manner/participant orientation distinction that they suggest that "VP-internal adverbs 'restrict' the range of events referred to, whereas VP-external adverbs take verbal reference for granted and say something about the event or situation (partially) designated by the VP" (McConnell-Ginet 1982: 159). (See (Shaer 2000, 2004) for more on the issue of restrictive/non-restrictive modification with respect to high–low contrasts with adverbs, and (Morzycki 2008) for an account of non-restrictive modifiers as conveying CI content.)

The terms *restrictive/non-restrictive modification* are perhaps most often used with respect to referential NPs, where the question whether *tired* is restrictive or not in a phrase such as *the tired men* depends on the properties of the men that are salient in context. If all the salient men are tired, and the speaker wishes to say something about them, then *tired* does not play any role in fixing the reference of the set the speaker is talking about, and *the men* would have done the job just as well. If there there are both men that are tired and men that are not, then *tired* serves as to fix the reference of the NP to just the men that are tired. In the adverbial case the situation is a bit different, since VPs are not referential in the same way as NPs. The VP in *Louisa departed rudely* does not pick out one specific event of departing among other

salient ones in the context as the one the speaker wants to say something about. But disregarding the communicative sense of *reference* as "the thing one says something about", we can still say that *rudely* functions restrictively in the sense that it restricts the set of potential events that can be described by the sentence.

Linking these notions together, we can say that when an adverb modifies restrictively, it evokes a set of potential alternative events that fit with the description of the VP without the adverb but not with it. This is similar to the way *the tired men* evokes the alternative set of salient men that are not tired. For the participant-oriented adverbs, the most specific component that determines verbal reference is the VP, which denotes an action type, and the set of evoked alternatives are the set of actions that do not fit this description.

This conception of the set of alternative events is slightly different from Ernst's (2002), who sees his comparison classes as parallel to the reference standard of scalar predicates. Just as the scale against which one ascribes tallness normally would be different for elephants and mice, the scale for ascribing rudeness would be different for the two sentences in (1). The conception sketched here is more in line with the view advocated by Geuder (2002), where the alternative events are events that could have happened and which would not have fitted the adverbial description, but which do not establish a specific scale of the expressed property in the way the set of elephants determine the scale for ascribing height to an elephant.

One issue that not many have focused on to distinguish the manner and the participant-oriented readings concerns the nature of the evaluation that is made. The participant-oriented reading conveys a specific evaluation, which normally the speaker is committed to, but which also can be shifted to some other participant. The evaluation involved in the manner reading is not one that the speaker necessarily is committed to, but it has a status more like a generic categorisation. Ernst (1984) formulates his rule such that the speaker is not necessarily committed to the specific evaluation, but only the weaker claim that the evaluation would be warranted under normal circumstances: "given normal assumptions, α is such as to allow judging Agent ADJ". The motivation for this lies in the fact that "In certain cases, we will not actually be saying that the agent is wise, rude, clever, etc. – only that

one would make such a judgment under normal circumstances" (Ernst 1984: 38), as illustrated in (80), where the speaker is not committed to the evaluation of Alice (or her answering) as really being stupid.

(80) Cleverly, Alice answered stupidly in order to fool the spies.
(Ernst 1984: 38)

For Ernst (2002) this distinction is captured by his "designated relation" between the expressed property and the agent participant. The "warrants positing" relation in the participant-oriented reading seems to licence a specific evaluation of the agent, whereas the "manifests" relation (or "shows properties typical of" (Ernst 2002: 56)) for the manner reading conveys a more generic evaluation.

A related distinction is pointed out by Molinier & Levrier (2000), who note that while (81) has both a generic reading describing the species and a "punctual" reading describing some specific group of wolves, the sentence (82) with the adverb in a detached initial position only has the specific reading: "L'assertion représentée par l'adverbe est donc une assertion localisée dans le temps, qui exclut la possibilité d'une interprétation générique pour la proposition qui suit"[23] (Molinier & Levrier 2000: 132).

(81) *Les loups mangent leurs proies gloutonnement.*
the wolves eat their preys greedily
(Molinier & Levrier 2000: 131)

(82) *Gloutonnement, les loups mangent leurs proies.*
greedily the wolves eat their preys
(Molinier & Levrier 2000: 132)

3.2.2 Representations

One possible analysis of the property expressed by *rude* in the CS notation would be the one in (83). Rudeness is here treated as a property that can be ascribed to people based on their actions. The italicised parts are selection restrictions, and the CS binding notation assures

23 My translation: "The assertion conveyed by the adverb is an assertion which is localised in time, which excludes the possibility of a generic interpretation of the following proposition."

that the person who is rude is in fact the agent of the action which he is considered rude on the basis of.

(83) $[_{\text{Situation}}\ \textsc{be}(X^{\alpha}, [_{\text{Property}}\ \textsc{rude}\ ([_{\textit{Action}}\ F(\ldots, \alpha, \ldots); \alpha\ \textit{AFF}])])]$

Manner reading

With this representation as a starting point, we can give (84) as a proposal for the manner reading of *rudely* in (1b).

(84) DT:
$$\left[\begin{array}{l} \textsc{depart}\ ([_{\text{Object}}\ \textsc{louisa}]^{\alpha}_{2}) \\ \alpha\ \textsc{aff} \\ [_{\text{Action}}\ [_{\text{Property}}\ \lambda x\ [_{\text{Situation}}\ \textsc{be}\ (\alpha, [_{\text{Property}}\ \textsc{rude}\ (x)])]]_{3}] \end{array}\right]_{1}$$

RT: $1 \longrightarrow 2$

IS: Background_{1} Focus_{3}

The CS modifier is established through lambda abstraction, and it says that the modified action has the property of being an action that it is rude of Louisa to perform.[24] On the referential tier, we find indices linked to LOUISA and the matrix event CS. The property constituent is restrictive in that it specifies additional information in the CS labelled 1, making it a richer concept, and restricting the set of potential referential indices it can be linked to.

There is no explicit representation of a set of alternative events, or a comparison class as used by Ernst (2000a, 2002). The idea is that this set can be constructed from the information structure tier. In this example, the modifier CS is marked as Focus, and the matrix CS is marked as Background. The link to Background is made with the entire matrix CS, which includes the modifier, but it is not intended that this modifier is both part of the Background and the Focus. Rather, the Background consists of the matrix CS with the Focus-marked constituent subtracted, so to speak, and replaced by a variable as in (85)

24 Lambda abstraction is the method used by Jackendoff (2002: 384ff) to form modifiers of complex constituents. Another way might be to invoke CS-binding also here, so that the CS in (84) could be as in (i):

(i) $\left[\begin{array}{l} \textsc{depart}\ ([_{\text{Object}}\ \textsc{louisa}]^{\alpha}) \\ [_{\text{Action}}\ [_{\text{Situation}}\ \textsc{be}\ (\alpha, [_{\text{Property}}\ \textsc{rude}\ (\beta)])] \end{array}\right]^{\beta}$

(from now on I will omit the macrorole tier). From this representation, the set of alternatives can be constructed, namely as the potential events corresponding to CSs of the form in (85) with the variable *X* instantiated by material that differs from that of the Focus-constituent in (84).

(85) CS: $\begin{bmatrix} \textsc{depart}([_{\text{Object}}\ \textsc{louisa}]) \\ _{\text{Action}}\,[_{\textit{Property}}\ X] \end{bmatrix}$

Treating the alternatives that are evoked by a sentence with a manner adverbial as related to the Focus–Background structure has the advantage that it relates it to a more general phenomenon and avoids giving a special treatment to manner modification just for this issue. That the structuring of an utterance into a background and a focus is related in some way to an alternative set that can be formed by a sort of abstraction over the focused constituent seems pretty uncontroversial, even though there are various proposals for how the phenomenon should be formally captured. Some well-known propsals are that of Jackendoff (1972), Rooth's 1985, 1992 Alternative Semantics analysis, various proposals using Structured Meanings (Jacobs 1983, von Stechow 1991, Krifka 1991), structured event quantification (Bonomi & Casalegno 1993, Herburger 2000), or higher order unification (Pulman 1997). Although there are important differences between the various formal analyses of focus, they all allow sets of alternatives to be constructed rather straight-forwardly. Relating the issue of alternative sets not to manner adverbs particularly but to the background–focus structure of utterances can potentially simplify the analysis of manner adverbs as well as relating it to a fruitful area of research in formal semantics.

Concerning the difference in commitment to the evaluations expressed by participant-oriented and manner readings, one way of accounting for this issue would be to introduce the holder of the attitude explicitly in the representation. In (86), this "judge" participant is described as INDEF, meant to indicate a generic, indefinite individual (Jackendoff (2009: 214) uses YA in this sense). The idea is that this plays something of the same role as Ernst's (1984)'s relativisation to "normal assumptions" in (43) on page 61, and his description of the evaluation

in the manner reading as being something like: "one would make such a judgment under normal circumstances" (Ernst 1984: 38).

(86) $\begin{bmatrix} \text{DEPART}(\text{LOUISA}^{\alpha}) \\ [\lambda x\ [\text{THINK}(\text{INDEF}, [\text{BE}(\alpha, \text{RUDE}(x))])]] \end{bmatrix}$

Another issue is whether α which is bound by LOUISA, should occur in the RUDE-ascription, or whether also this participant should be filled by some sort of generic individual. This might be a useful way to capture the property that these manner modifiers do not describe the agentive participant directly, but only via the process: the departing was such that *someone* performing it would be considered rude. Perhaps both possibilities should be left open, such that when the actual agent participant of the clause binds into the first argument of BE we get the relativised evaluation that Higginbotham (1989: 478) mentions, where the property is ascribed relative to the agent's usual traits (*Louisa departed rather graciously for her*).

Participant-oriented reading

My proposal is that the participant-oriented reading can be represented by something like (87).

(87) DT: $[\text{DEPART}(\text{LOUISA}_2)]_1$
$[\text{THINK}(\text{ME}_3, [\text{BE}(X_4, [\text{RUDE}(Y_5)])])]$

RT: 1 ⟶ 2 3 4=2 5=1

There are several differences between this and the representation of the manner reading in (84), but not in the part that corresponds to the core meaning of *rude*, which is the same for both, and fits the schema that was proposed in (83).

An important difference is that the adverbial meaning is not a modifier of the main CS, but instead figures as a separate CS. The main idea is to capture the intuition that the participant-oriented reading is not restrictive. It does not contribute in establishing the "referent" of the clause, nor does it form part of the categorisation in the sense that it contributes to the CS that denotes an action type. This is why the participant-oriented readings cannot be questioned with *how*, for example, since it does not specify a subtype of an event which is more

specific than that which is specified by the VP. I have chosen to represent this by having the evaluative constituent separate from the main event CS, but it could be possible to capture this distinction by some other means, say to have the same part–whole configuration as in the CS for the manner reading, but with some diacritic on the modifier to indicate its different status. In my view the representation in (87) does the job, so I will not pursue any other possibilities further.

The participants that figure in the RUDE-ascription are not established through CS-binding, but rather through co-indexing on the referential tier. (I wish to avoid the question whether the THINK-CS should be linked to an index of its own on the referential tier, so none has been indicated here.) On the thematic tier, the arguments to the evaluation are just represented by variables. The idea is that these participants' relations to the described event are more indirect than in the manner case, and are determined pragmatically through a sort of anaphoric linking rather than by a grammatical rule. Most often these will just be linked directly to the Actor–Action pair in the main CS as in (87) (by the RT equations 4=2 and 5=1), but they need not, as seen in (88) (see also Greenbaum's (1969) example (34) on page 58, and Potts's (2005) example (74) on page 75).

(88) Cleverly, the relative weighting given the palatability and price indices was different in the three experimental sessions.[25]

Here, it is not the weighting which is said to be clever, or "be different" the action which has been cleverly performed. Rather it is the experimenters who have been clever in setting up the experiment in this way.

I think that allowing for a pragmatic resolution of the specific action which is evaluated is an improvement over the explicit introduction of a meaning "act" or "do" (Wilkinson 1970, Bartsch 1976, McConnell-Ginet 1982), or "decide" (Dik 1975) in the representational schema for the participant-oriented reading. The problem is that these solutions are not general enough. The "act" variants have trouble with stative or

25 McFarland, David (2008) *Guilty Robots, Happy Dogs: The Question of Alien Minds*, p. 125. Oxford: Oxford University Press.

negative clauses, which do not denote acts themselves, and the "decide"-variants have trouble with examples such as Austin's (1956) (2a) with the person who clumsily trod on a snail, where we do not want to say that his decision to trod on the snail was clumsy, since he presumably did not choose to if it was out of clumsiness. (This point is also argued by Ernst (1984: 31).) With respect to stative and negated clauses, the "action" which is involved in the evaluation is the participant's letting himself be in a certain state, or deciding to not perform a certain action (see (30) on page 57).

Another issue with the use of specific verbs like *act* or *do* in the representation of participant-oriented readings is pointed out by Geuder (2002), who notes that not only can a participant-oriented adverb be paraphrased with a sentence with manner-modification of *act* or *do*, but in fact by the manner-modification of any action description which is more general than the one used in the clause with the participant-oriented adverb. Thus, in (89), the participant-oriented reading of *stupidly* describing the action "accept all of the demands" is paralleled by the manner reading of *stupidly* modifying the action "negotiate", since accepting all of the demands can be seen as a way of negotiating. Relying on the paraphrase with a manner modification of *act* to relate the manner reading to the participant-oriented one in the formal account therefore seems a bit unmotivated, since we also find this same relation between other event descriptions which would not be captured in the same way in such a model.

(89) John stupidly accepted all of Jim's demands
⇒ John negotiated stupidly (Geuder 2002: 173)

Another place where an additional agentive component of meaning is added with participant-oriented adverbs is in passives. In some cases there is an ambiguity as to which participant a participant-oriented adverb evaluates in passive clauses: the agent participant which is expressed in an adverbial (or omitted and merely implied), or the undergoer that is the grammatical subject. But when it is the undergoer which is evaluated, there is an additional agentive meaning that is implied, along the lines of "let oneself undergo". (Relating this ambiguity to the possibility of modification of *be* in the passive does not seem to

be a general solution, as the same ambiguity is found with morphological passives as well, as Croft (1984: 18f) points out with respect to Japanese.)

There are of course restrictions on the things that can instantiate *X* and *Y* in the representation in (87), and I will not try to suggest what these are here. The point is that it might be better to have a syntax–semantics mapping of an underspecified kind, and to have separate specifications in the semantics/pragmatics that capture the right restrictions on the details.

Contrary to the generic judge in the manner reading, the speaker is normally committed to the evaluation with the participant-oriented reading. This is indicated in (87) with ME as the holder of the attitude. While speaker commitment generally is the case, in certain circumstances (e.g. in indirect speech), the indexical center can be shifted, so that some other participant is taken to be the holder of the attitude (see e.g. (Amaral et al. 2007: 735f)). I will not try to establish the exact restrictions for when this shift of the evaluative judge is possible, but just note that in most cases we find that the speaker is committed to the expressed evaluation.

One could speculate that this difference in subjectivity between the participant-oriented and the manner readings (where we find the generic judge instead of the speaker) is part of the reason why *enough* often figures with evaluative uses of adverbs in English, and why modification with *nog/nok* "enough" is almost obligatory for adverbs to be used in this evaluative sense in Scandinavian (other forms of modification can also be used, such as *rent* "purely" or *helt* "completely"). The meaning "sufficient" does not seem to be involved when *enough* figures in an evaluative, but what is common with the core use of *enough* is exactly the subjective character of evaluation. If the only difference between the manner and the participant-oriented readings were that the latter involved the manner modification of a higher verb meaning "act", it would not be obvious how to relate the modification by *enough* to this distinction. (See (Schreiber 1971: 97ff) for a suggestion of why *enough* is preferred with evaluative adverbs conveying a sense of incredulousness.)

I have not indicated any information structure for the representation in (87), because I want to remain uncommitted to exactly how this

should look. It would minimally have to distinguish between the main CS being the asserted content and the evaluative CS as having some other status, analogously to Potts's (2005) distinction between what is *at issue* and what is *conventionally implicated* (CI), since a speaker with an utterance of (1a) does not *say that* "I think Louisa was rude to depart", although the meaning is conveyed.

4

Conclusion

I hope this thesis has shown that there is no clear agreement on how to represent the semantic contributions of manner adverbs or participant-oriented adverbs. I also hope to have suggested that many of the important properties of these constructions can be captured with the machinery of Conceptual Semantics.

For manner modifiers, the modification relation and the typing of CSs for ontological categories allow an asymmetrical representation of the contributions of verbs and modifiers in line with the intuitive conception of modifiers. It also allows us to capture the fact that modifiers contribute in denoting action types, such that the CS that corresponds to *break violently* models the concept of a particular kind of action, much in the same way *smash* denotes a kind of action (Jackendoff 1972: 71), the difference between them lying in where the property of violence is coming from. The separation of descriptive information from referential commitments allows us to treat the contribution of manner modifiers as conceptual constituents which can be made reference to, without separating the manner as a particular individual in the world separate from the event.

For the participant-oriented adverbs, I proposed a way of representing their non-restrictive character by having separate CSs that are related through the referential tier, and that the nature of this link is pragmatically resolved, which fits nicely with the "coerced" introduction of relevant participants and actions into the evaluation where the denotation of the modified clause does not fit with the lexical semantic requirements of the adverb. I also proposed to explicitly include the holder of the attitudes expressed by the adverbs in the representations, to distinguish between the generic evaluation involved with manner modification and the specific speaker-committed evaluation we find with the participant-oriented adverbs. With respect to the different

classes of salient alternative events associated with the two types of modification, I advocated an analysis where this phenomenon could partly be associated with the different information structural properties of these sentences.

The type of analyses advocated here are in some respects more complicated than many of the alternatives, in the sense that there are more levels and relations involved. Personally, I believe that this is a strength rather than a weakness of the approach, since it offers the opportunity of relating different phenomena to each other. It does not make much sense to compare the different analyses I have described in terms of simplicity with respect to the limited phenomena investigated here alone. The real evaluation of simplicity must be made when the accounts are integrated in a global analysis of natural language. Many simple but unrelated analyses do not necessarily form a simple analysis when combined if the analysed phenomena really are related.

It is difficult, then, to evaluate the different analyses described in this thesis with respect to each other in terms of simplicity or other factors. I am however optimistic about the potential usefulness of the approach advocated here.

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