

# Pure Manner Adverbs

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## 1 Introduction

Ernst (1984) divided the word class *adverb* into smaller sections using semantic criteria. He proposed to use the term *quality adverb* for those adverbs which express the speakers judgement on some qualitative scale, as opposed to *quantitative* (time, place, degree) or *logical* (even, only) adverbs.<sup>1</sup> Within the group of quality adverbs, Ernst identified one group, which, differing from the other quality adverbs, shows only one reading, namely a manner reading. He called these *pure manner adverbs* (=PMA). In order to clarify (a) the notion of quality adverbs and (b) the relationship between so-called manner adverbs and PMA, this paper will start with a short overview of the class of quality adverbs and what is known about them. In the next section, the original conception of the PMA will be introduced. Following this, the possibility of using semantic criteria for defining the class of PMA will be explored. It will be shown that when using semantic criteria, the previous one-reading definition has to be dropped in order to retain words such as *quickly*, *slowly* and *quietly* in the class of PMA. In the following section, Shaer's claim that all PMA have two readings will be refuted. This paper closes with an examination of possible formal approaches to the data presented here.

## 2 Quality Adverbs

### 2.1 The Two Readings of Quality Adverbs

Typically, quality adverbs allow two different readings, a clausal and a manner reading. Approximate paraphrases for the different readings are 'It was ADJ

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<sup>1</sup>In more recent work, Ernst refers to *quality*-adverbs as *predicational*-adverbs. Cf. (Ernst, 2000a; Ernst, 2000b; Ernst, 2000c).

that  $S_W$  for the a-sentences and ‘ $S_W$  in an ADJ manner’ for the b-sentences, where ADJ stands for the adjective equivalent of the adverb (e.g. *appropriate* is the ADJ in a sentence containing *appropriately*) and  $S_W$  stands for the sentences without the adverb.<sup>2</sup>

- (1) a. Appropriately, Carol handled Jay’s lawsuit (since she was his best friend).  
b. Carol handled Jay’s lawsuit appropriately (doing everything as it should be done).  
=(1) in (Ernst, 1987)
- (2) a. Absent-mindedly, Pat swam out to the island (forgetting that she had a dentist appointment at 4).  
b. Pat swam out to the island absent-mindedly (not even noticing the \$100 bills floating on the surface).  
=(3) in (Ernst, 1987)
- (3) a. Louisa rudely answered Patricia.  
b. Louisa answered Patricia rudely.  
=(35) in (McConnel-Ginet, 1982)

## 2.2 Clausal Reading Used for Subgrouping

The manner readings of the adverbs in (1-3b) present a complex group which does not lend itself to further classification. In contrast to this, the clausal readings (1-3a) can easily be used for extended subgrouping<sup>3</sup>: The reading of the adverb in (1) is evaluative, representing the speaker’s evaluation of the state of affairs described by the rest of the sentence, that in (2) is a mental attitude reading, as it describes the state of mind of the subject with regard to the state of affairs expressed by the rest of the sentence and that of (3) is agent-oriented,

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<sup>2</sup>The difficulties of finding appropriate paraphrases have been widely noted, cf. eg. (Jackendoff, 1972, 49ff) for the paraphrases of the clausal readings, and (Ernst, 1984, 23ff) for the manner paraphrases.

<sup>3</sup>Here I use the terminology and defining characteristics of (Ernst, 1984). Other widely used methods for subdividing the clausal readings are their syntactic behaviour (cf. eg. (Bartsch, 1974)) and their relationship to their adjectival counterparts (cf. eg. (Geuder, 2000)).

where, roughly speaking, the agent is judged ADJ on the basis of the state of affairs described by the rest of the sentence.<sup>4</sup> This results in the classification presented in figure (1).

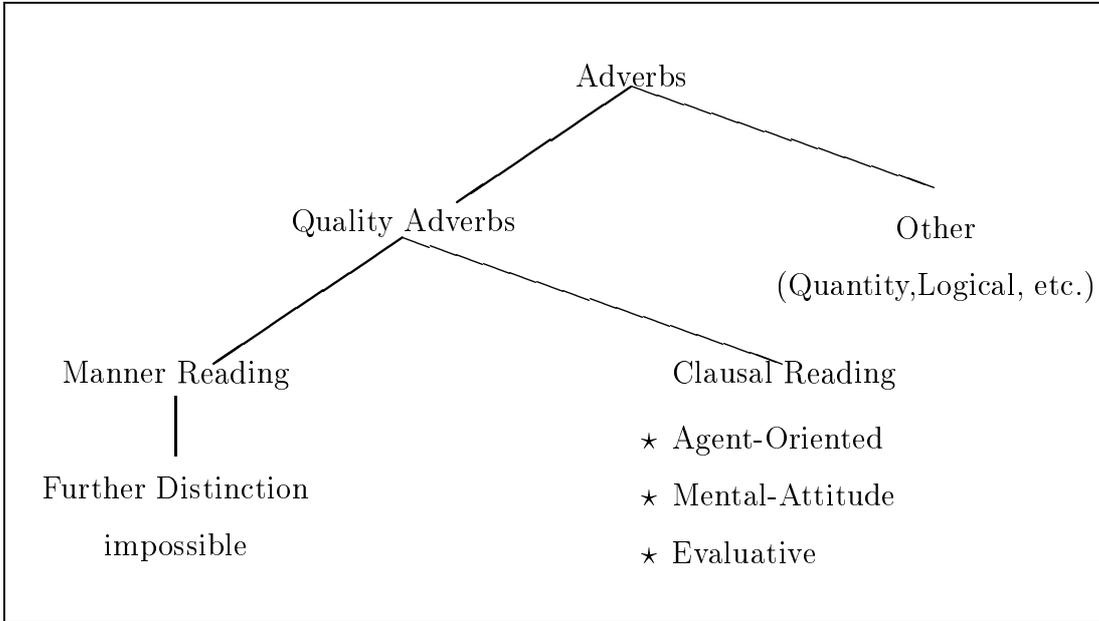


Figure 1: The subgrouping of adverbs- preliminary version

The important observation which can already be read of the figure is the following: the term manner adverb does not refer to a lexical subclass of adverbs, but rather is a shorthand for *adverbs used as adverbials of manner*, e.g. adverbs used with a manner reading. The defining characteristic for an adverb to be considered a manner adverb is its actual semantic function within a given sentence.

### 3 Pure Manner Adverbs

Not all quality adverbs display this split into clausal and manner reading, as the following examples show.

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<sup>4</sup>My usage of ‘state of affairs’ is intended to be understood very vaguely, evading the question whether the clausal readings modify situations, facts or propositions. Since the differentiation of these terms and its associated concepts are of no consequence to the main interest of this paper, that is, manner adverbs, I will not discuss them further. This is done in works such as (Asher, 1993).

- (4) a. \*Loudly, you must blow the trumpet.  
b. You must blow the trumpet loudly.  
= (7) in (Ernst, 1987)
- (5) a. \*The sun brightly had been shining that morning.  
b. The sun had been shining brightly that morning.  
= (26/29) in (Ernst, 1987)
- (6) a. \*Everything smoothly was running.  
b. Everything was running smoothly.  
= (27) in (Ernst, 1987)

In these sentences, the a- sentence are ungrammatical, indicating that the reading associated with this position is not available. The class of quality adverbs which allows only for this manner interpretation has been called pure manner adverbs (=PMA) by Ernst in (Ernst, 1984).<sup>5</sup> The adverbs within this class are *pure* in the sense that they cannot be accounted for as manner readings of lexical adverb-classes functioning originally as clausal adverbs, as they provide no clausal reading. The situation depicted in figure (2) emerges.

Here, we see that under this definition, the PMA can be understood as a proper wordclass, not just as a reading of an adverb.

#### 4 PMA - A Homogeneous Semantic Class?

So far, the class of PMA is defined purely negatively: its members allow only a manner but not a clausal interpretation. This is not very satisfying, as the restriction to the manner interpretation can than be an epiphenomenon of very different processes. That is, though the adverbs in this group may indeed all only allow the manner interpretation, they may do so for different reasons.<sup>6</sup> Ernst

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<sup>5</sup>A quite similar class, *Mod<sub>0</sub>*, was introduced in (Bartsch, 1972; Bartsch, 1974). Bartsch noted that the class of adverbs containing *schnell, langsam, laut, leise* etc., that is *quickly, slowly, loudly, low* etc. could not be predicated over facts, thus disallowing its members to occur in the corresponding sentence adverb constructions.

<sup>6</sup>In (Ernst, 1987, 86,fn8), Ernst himself mentions that he does need semantic criteria to exclude adverbs such as *differently* and *well* from the PMA, since they also only have a manner

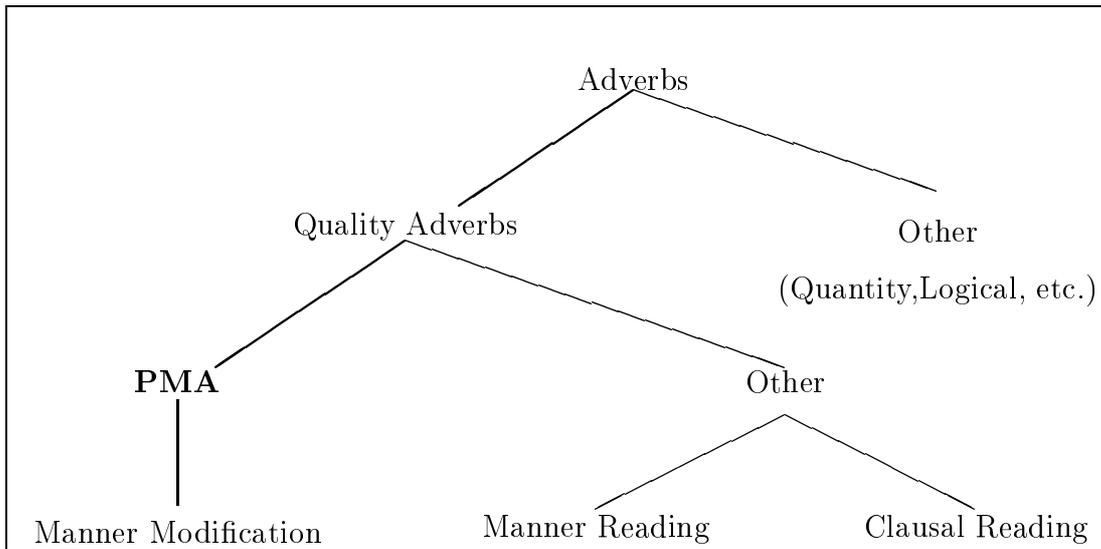


Figure 2: The subgrouping of adverbs

(1984,84) notes that the PMA seem to have more in common than this; they “usually involve perceptual qualities: light, sound, taste, physical action, and so on.” This is not surprising, since they are, after all, modifiers of the manner in which the event described by the main predicate is carried out. What is more important, is the fact that they modify the directly perceptible dimensions of an event. This is very different from the way that the manner readings of other quality adverbs function. An example will make this clearer.

- (7) John walked sadly off the stage.  
 =(51) in (Geuder, 2000, 215)

In this sentence, we have a manner reading of a quality adverb<sup>7</sup>. Following Geuder (2000, 214ff.), I assume that for the correct interpretation of this sentence, we have to fall back on the following chain of thought: *walk* is a bodily movement, bodily movement establishes a posture, that posture can be an indicator of emotions. That is, we have to use the metonymical relation between bodily movement and emotional state in order to understand the sentence. Such an additional step is not necessary for PMA.

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reading.

<sup>7</sup>In Geuder’s terminology, a manner use of a psychological adjective

Though this semantic approach at defining what it means to be a PMA is able to explain the common semantic characteristics of the PMA, it fails to explain the inconsistencies described in the following sections. These inconsistencies arise from adverbs which fit into the semantic description of PMA but nevertheless show two readings.

## 4.1 Data

### 4.1.1 Temporal Readings: *Quickly* and *Slowly*

*Quickly* and *slowly* in their manner reading fit the semantic criterion for PMA mentioned above perfectly, however, they show a manner vs clausal reading difference.<sup>8</sup>

The different readings normally involve besides the regular manner-reading a temporal reading. This temporal reading allows to locate the event described in the sentence with respect to a reference time. E.g., *quickly* in (8) can be glossed as *The time elapsed from [a contextually given point in time] to [the onset of the action/event which consists of John lifting is arm] is short*. The alternation of this reading with the manner interpretation seems to be highly systematic and does occur crosslinguistically, here are examples from English<sup>9</sup>, German and Chinese:

- (8) a. John quickly lifted his arm.  
b. John lifted his arm quickly.  
a' John was quick in lifting his arm.  
b' John lifted his arm in a quick way.  
=(47) in (Cinque, 1999, 93)

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<sup>8</sup>For a discussion of whether or not these adverbs have turned into modals in German, cf. (Pittner, 2000, section 2). Ernst, in (2000c, 87), calls them aspect-manner adverbs, grouping them with adverbs like *suddenly*, *abruptly*, *gradually*. *Slowly* and *quickly* are contained in the Mod<sub>1</sub> class of (Bartsch, 1972; Bartsch, 1974).

<sup>9</sup>The distinction of two readings in the case of *quickly* in English is still somewhat new. In Jackendoff's chapter on adverbs in (Jackendoff, 1972, 49), he claims that *quickly* does, wherever it is located, lead only to one reading. The first to differentiate the two readings was Travis (1988, 11). She assumes different syntactic positions for the respective readings.

- (9) a. Lynn quickly raced down the hallway.  
 b. Lynn raced down the hallway quickly.  
 =(2.139) in (Ernst, 2000c, 87)
- (10) a. Er muß langsam das Geschirr abspülen.  
 b. Er muß das Geschirr langsam abspülen.  
 =(11) in (Pittner, 2000)
- (11) a. kuài diǎnr chī!  
 quickly point eat  
*Quickly, start eating!*
- b. chī kuài diǎnr!  
 eat quickly point  
*Eat faster!*  
 =(5) in (Tsai, 1995, 91)

They do not modify the event referred to in the sentence, but comment on the time span after which the event referred to in the sentence occurred. That is, the eventuality as such is not commented on, it is left open with which speed it was performed, only the time span leading up to that eventuality is modified by the adverb.

Formally, the semantics of the S-readings can be modeled along the lines of those of time span adverbials, e.g. *quickly* in (8) translates into (12).

$$(12) \quad \lambda P \lambda e [P(e) \ \& \ \exists \tau [\tau = [t_r, \text{BEG}(e)] \ \& \ \text{SHORT}(\tau)]]$$

Here,  $t_r$  indicates the contextually given reference time and  $\tau$  a time span, so that  $[\exists \tau [\tau = [t_r, \text{BEG}(e)] \ \& \ \text{SHORT}(\tau)]]$  says that the time span leading up from the reference time to the event is short. The whole sentence can be represented as in (13).

$$(13) \quad \exists x \exists y [\text{JOHN}(x) \ \& \ \text{ARM}(x,y) \ \& \ \text{LIFT}(x,y,e) \ \& \\ \exists \tau [\tau = [t_r, \text{BEG}(e)] \ \& \ \text{SHORT}(\tau)]]$$

### 4.1.2 Other Clausal Readings

Similarly, we also find examples of other adverbs fitting the semantic criterion for PMA which turn out to have an additional clausal reading.

- (14) a. Kim quietly had gone home to think it over.  
b. Kim sang quietly.  
=(2.151) in (Ernst, 2000c, 90)

Here, *quietly* in (14a) is to be interpreted with a mental attitude reading, so that an approximate paraphrase of the sentence is *In a quiet state of mind, Kim had gone home to think it over.* However, the clausal readings are not restricted to mental attitude readings, as the clausal reading of *gracelessly* in (15a) demonstrates, which yields an evaluative reading.

- (15) a. She gracelessly had ignored them.  
b. She was speaking gracelessly.  
=(2.150) in (Ernst, 2000c, 90)

## 4.2 What's so Special?

In contrast to the regular alternation seen with the examples discussed in 2.1, the adverbs described here show some peculiarities.

### 4.2.1 The Status of the Clausal Reading

If used with their clausal reading, *quickly* and *slowly* are understood, as discussed above, as temporal markers. Adhering to Ernst's classification given in section one, they would, under this reading, not be considered to be quality adverbs anymore. Instead, they would be categorized as quantity adverbs of time. Temporal adverbs like *soon*, *immediately* etc., however, do not have a distinction between clausal and manner reading. This 'different' behaviour of *quickly* and *slowly* goes hand in hand with the fact that the different readings of *quickly* and *slowly* seem to function on a different level than the regular manner/clausal reading distinc-

tion noted in (1-3): The difference in the readings of *quickly* and *slowly* cannot be simply paraphrased by predicating the related adjective over the state of affairs described by the rest of the sentence, cf. (16).

- (16) a. John quickly lifted his arm.  
a' John was quick in lifting his arm.  
≠ John lifted his arm and that was quick.

#### 4.2.2 Antonyms and Synonyms Behave Differently

Many PMA synonymous with the manner reading of the adverbs discussed above fail to obtain a clausal reading. This contrasts with the behaviour of the other quality adverbs, where no such exceptions occur: a synonym of an adverb with the regular manner/clausal distinction can always also occur with both, either the manner or the clausal reading. An example for synonyms is the behaviour of *fast* compared to *quickly*.

- (17) a. He quickly ran away.  
b. He ran away quickly.  
=(85)a/b on p. 103 in (Cinque, 1999)
- (18) a. \*He fast ran away.  
b. He ran away fast.  
=(86)a/b in (Cinque, 1999)

Similarly, PMA which are antonyms to the manner readings of the adverbs discussed above fail to produce a clausal reading, again contrasting with the general behaviour of quality adverbs. Thus, *quietly* in (14), repeated here for convenience, contrasts with the usage of its antonym *loudly* (cf. also (4)), which allows only one reading.

- [14] a. Kim quietly had gone home to think it over.  
b. Kim sang quietly.

- (19) a. \*Kim loudly had gone home to think it over.  
b. Kim sang loudly.  
=(2.152) in (Ernst, 2000c, 90)

The same can be said for the contrast between *gracelessly* and *woodenly*.

- [15] a. She gracelessly had ignored them.  
b. She was speaking gracelessly.  
(20) a. \*She woodenly ignored them.  
b. She was speaking woodenly.  
=(2.149) in (Ernst, 2000c, 90)

This difference in behaviour has also consequence for their formalizations: As opposed to the quality adverbs having the clausal-reading as their primary reading (cf. (Ernst, 1984; Ernst, 1987; Geuder, 2000)), it seems hardly appropriate to assume this for the adverbs discussed above. On the contrary, it seems obvious that the manner reading is the more basic reading, and the clausal interpretation is derived from this.

### 4.3 The Solution: Metaphoric Extension

Ernst (2000c,90) correctly notes: “The difference between Pure Manner adverbs and those which can have both clausal and manner readings thus often seems to hinge on whether the ADJ predicate selects events that are restricted to purely physical manifestations (as with *loudly*) or whether a wider (often metaphorical) usage is allowed[...]. Therefore, whether or not an adverb is of the Pure Manner type depends on whether it has acquired a metaphorical meaning in this way.”. Departing from Ernst’s view, my claim is that we should not take metaphorical usages as reasons for excluding those adverbs from the class of PMA, but should rather take this metaphoric usages as proof of the opposite: Because the only way which allows the relevant adverbs to be used with a clausal reading is to use them metaphorically, they must be members of the class of PMA. Seeing that these

usages are metaphoric usages does also explain the inconsistencies with regard to the behaviour of the synonyms and antonyms: the relation between synonyms and their availability for metaphoric extensions is never a one-to-one relation. On the contrary, this seemingly irregular behaviour is one of the main components of metaphors as such.

The class of PMA should therefore be imagined as depicted in figure (3): The adverbs like *loudly*, *woodenly* etc. belong to this class, but adverbs which show two readings can be members of the class, too, as long as their clausal reading is a metaphoric reading.

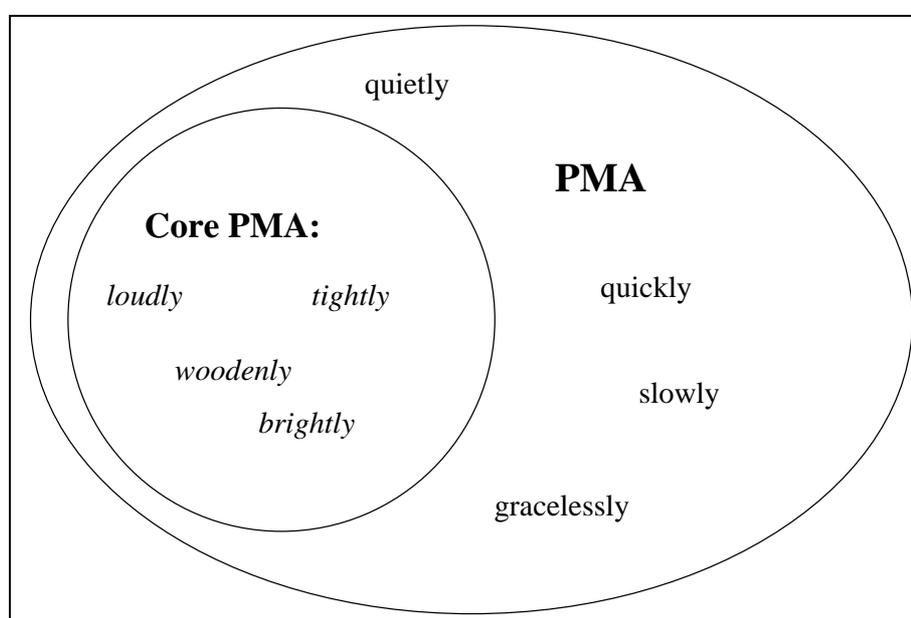


Figure 3: PMA- the reunited group

To conclude, this section has shown that adverbs like *quickly*, *slowly* and *quietly*, which should, for semantic reasons, be grouped with the other PMA, do indeed show not only a manner but also a clausal reading. However, their clausal readings differ from those of other quality adverbs, as they are interpreted metaphorically.

## 5 Alternation in All PMAs

After seeing how *quickly* and *quietly* diverge from the pattern of the core PMA, the question arises, whether or not the other members of the class do also show a clausal reading. Maybe we have just not looked closely enough. In (Shaer, 2000, pp280-81), Shaer is claiming exactly that: the class of pure manner adverbs as established by Ernst does far more resemble the standard manner adverbs than Ernst claims. According to Shaer, all pure manner adverbs display a different reading in higher/lower position respectively. Shaer explains the difference using Peterson's restriction analysis.

### 5.1 Peterson's Restriction Analysis

In (Peterson, 1997), Peterson introduced this analysis, primarily to account for 'restrictive' or 'non-restrictive' readings of event nominals, where the 'restrictive' vs. 'non-restrictive' classification corresponds to the distinction usually assumed for relative clauses. To make the point clearer, I repeat here Shaer's adaptations of Peterson's examples:

- (21) a. The men who were tired ate strawberries.  
b. The men, who were tired, ate strawberries.  
c. The tired men ate strawberries. = (a) or (b)  
=(51) in (Shaer, 2000)
- (22) a. The Titanic('s) sinking rapidly caused great loss of life.=  
i. The Titanic's sinking being rapid caused great loss of life. ('restrictive')  
ii. The Titanic's sinking, which was rapid, caused great loss of life.  
b. The Titanic('s) sinking quietly caused great loss of life.=  
i. # The Titanic's sinking being quiet caused great loss of life. ('restrictive')  
ii. The Titanic's sinking, which was quiet, caused great loss of life.  
=(52) in (Shaer, 2000)

Whereas the ‘restrictive’ reading amounts to a constraining of the reference of the syntactic constituent being modified, the ‘non-restrictive’ reading amounts to a double assertion.

## 5.2 The Restriction Analysis and PMA

Shaer claims that this distinction of restrictive and non-restrictive readings can be used to account for the subtle meaning differences between higher and lower occurrences of PMA. To substantiate his claim, he gives the following example.<sup>10</sup>

- (23) a. The prisoner proclaimed his innocence loudly.  
i. He woke up all the other prisoners.  
# ii. He really believed that he had been framed.
- b. The prisoner loudly proclaimed his innocence.  
# i. He woke up all the other prisoners.  
ii. He really believed that he had been framed.
- =(45) in (Shaer, 2000)

According to Shaer’s analysis, the modification by *loudly* in (23a) leads to a single assertion, whereas (23b) is to be interpreted as a double assertion, so that the sound-volume of the prisoner’s proclamation is a mere incidental property. (23a) must thus be interpreted as referring to a complex event which embeds the simple events of John claiming his innocence and combines it with the modification. The continuation with (23a)ii seems not felicitous, because it does not refer to the *loudly* part of the complex event, but only to the embedded simple event. Only when the *loudly* is added parenthetically in the first place does this continuation make sense, as (23b)ii shows. The exact opposite is true of the continuations (23a)i and (23b)i, respectively. Here, only the latter is unfelicitous, since it focusses on the *loudly* part of the event, which is, in this view, only an ‘almost’

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<sup>10</sup>Shaer adduces an additional examples, to which the same points apply:  
(i) He played poker brilliantly.  
(ii) #He brilliantly played poker. =(46) .

parathetical remark.

### 5.3 Alternate Possibilities

However, it is far from clear whether this is really the criterion which is responsible for the felicitous continuation of the story. To this claim, I will respond in two ways: (a) showing, why I believe it is in itself not convincing and (b) giving what I think are better explanations for the data.

There are two points which questions the validity of Shaer's conclusion:

1. The complex events Shaer establishes are very unstable. It is quite natural to come back directly to the simple, embedded event in later sentences. It does not seem as if the effects observed in (23) have any long term consequences.
2. The modified entity stays the same on both readings. It is impossible to apply the same manner/clausal distinctions as in the examples in (1-3). Or, in other words, the distinction given through the differentiation of the restrictive/non-restrictive readings works on a whole different level. The reason for this is obvious: whereas the different readings in (1-3) clearly result from different entities the modification is applied to, that is, on the one hand, a certain aspect of an event for the manner modification, on the other hand an event/fact/proposition for the S-Adverbial reading, the *loudly* seems to be applied to the same aspect of the verb referent. Two tests usually employed to detect manner usages both fail to establish any difference for Shaer's 'two' readings:

- ★ Restricted paraphrasing options: only the manner paraphrase is available. Whether the *loudly* is restrictive or notrestrictive, in both cases it constitutes a manner modification.
- ★ Scopal behaviour: The only hard scope criterion to distinguish manner from other readings is the impossibility for manner readings to take

scope over the negation. *Loudly* does not take scope over the negation in either of the sentences.<sup>11</sup> Compare its behaviour in (24).

(24) a. #He did not proclaim his innocence loudly.(He was not making much noise, that is, it was not loud.)/\*Loudly, he did not keep quiet about his innocence.(\*Sentence except adverb negated.)

b. Absentmindedly/Stupidly/juristically, he did not keep . . . .

Additionally, the stable manner reading of *loudly* was already discussed in comparison to *quietly* in (14).

(25) a. \*Kim loudly had gone home to think it over.

b. Kim quietly had gone home to think it over..

Crucially, this also means that (a) the semantic form of these sentences will necessarily be the same and (b) the events described in these sentences are the same.

The fact that the data itself shows phenomena which exceed the single sentence level already indicates that this data is best explained at a more abstract level, namely that of information structure. This analysis is supported by two points, one relating to the content of the sentences in question, the other to the formal realization of information Structure on the ‘surface’ level of the linear strings making up a sentence:

1. The information conveyed via *loudly* is simply more (23a) or less (23b) important relative to the continuation of the story.
2. The manner adverb in the postverbal position usually receives the most stress in the sentence. If this is not wanted, it must be put before the main verbal predicate. The reason for not wanting the adverb to receive the most stress is information structure, as mentioned above.

It seems as if the differentiation of restrictive- vs. non-restrictive readings of the kind Shaer describes is in a way a strategy to add content and function, be it as

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<sup>11</sup>For a detailed discussion of the syntactic phenomena, compare (Frey & Pittner, 1998, p 508f)

minimal and shortlived as here, to positions which otherwise would be wasting their potential. That is, since English offers these two positions for adverbs which, in any case, receive only a manner reading, it leaves the distinction and use of this potential over to narrative strategies.

#### **5.4 Further Evidence?**

Shaer goes on trying to establish similarities between PMA and other adverb classes. Comparing them with agent-oriented adverbs, he argues that this class of adverbs is as dependent on thematic participants as agent-oriented adverbs are:

- (26) a. Music was playing loudly.  
b. The old man complained to us loudly.  
    =(50) in (Shaer, 2000)

In discussing example (26) Shaer claims “Although a sentence like (26a) can be construed as simply predicating loudness of a music-playing event, a sentence like (26b), which designates a situation with an agent, requires us to attribute loudness specifically to this agent.” However, this does not make things clearer. What does it mean to “attribute loudness specifically to this agent”? It is obvious that in this sentence not the man himself is loud, but the sound-volume of his complaining is. This then, clearly falls under the category of expressions ‘modifying an aspect of the verb referent’, they are thus standard examples of manner readings.

#### **5.5 Conclusion**

This section mainly discussed Shaer’s claim that all PMA show regular manner/clausal reading distinctions. In not denying the validity of his data, it could be shown that the observations he makes can be better explained by recurring to principles guided by information structure, especially since the effects he con-

centrates on only hold good above the sentence-level. In any case, all readings of the adverbs in question are still manner readings, the difference thus lies on a whole different level than the distinctions discussed in the previous sections.

## 6 A Formal Account of PMA

### 6.1 The Basic Requirements

A formal account of PMA, drawing from the result of the discussion of their semantics in the previous section, must account for two things:

- ★ PMA modify events. More precisely, it can be shown that by modifying an eventuality, they specify a specific aspect of that eventuality.
- ★ Their formalization must ensure that they can access the correct aspect/dimension of an eventuality. That is, *loudly* can only access the soundvolume-dimension of an eventuality, not the light-intensity-dimension and so forth.

Assuming that the main predicate of a sentence brings with it only an event argument, and not a host of other arguments for all kinds of its aspects, the formalization is not a trivial thing.

(27)  $\lambda e[\text{COMPLAIN}(e)]$

(28) Peter complains loudly.

Taking a sentence like (28), under the assumption of (27) as semantic form (=SF) for *complain* and leaving for the moment the subject aside, the combination of the meanings of *complain* and *loudly* can in principle proceed along either of the following ways.

### 6.2 Approach 1

The main predicate remains to be a predicate of events, that is of the form  $\text{COMPLAIN}(e)$ , and the SF of *loudly* already provides the correct dimension of the event which is to be modified. A possible SF for *loudly* is given in (29):

(29)  $\lambda P \lambda e [P(e) \ \& \ [[\text{SOUNDVOLUME OF } (e)] > \text{CN}_S]]$

Where  $CN_S$  stands for the conceptual norm of soundvolume. The idea of a common norm for the scale available for quality adverbs, or more generally, for gradable adverbs, is developed in full in (Bierwisch, 1989).

### 6.3 Approach 2

The second possibility has, as its starting point, again COMPLAIN(e), which is to be combined with a different semantic form of *loudly*. This time, the SF of *loudly* does already expect a parameter/constant for the sound dimension. The SF of *loudly* simply fixes the value of this parameter.

$$(30) \quad \lambda P \lambda e [P(e) \ \& \ [z > CN_S]]$$

If the two SFs (27) and (30) are put together, it is immediately clear that  $z$  of (30) will remain a free variable in the formula. To bind the variable and, in effect, in order to establish the correct relationship between what *loudly* modifies and the main verbal predicate *complain*, we have to resort to further steps. There are principally four different approaches to avoid this impasse:

1. reanalysis of the verb,
2. reanalysis of the adverb
3. a contribution by syntax
4. a contribution by pragmatics

In the following, I will very cursory discuss some implications of and options for using these different approaches. First, the reanalysis idea. In principle, either the verb or the adverb can be reanalyzed. A problem shared by both approaches is that we would, in both cases, need something which forces a reanalysis. This cannot be explained by the SFs used so far, as they do successfully combine. The free variable is only problematic for the interpretation. One possible solution would then be to assume a SF such that a combination is only possible after the relevant variable has been bound.

As far as the question of what is to be reanalyzed is concerned, the reanalysis

of the verb seems preferable. After all, the soundvolume is conceptually speaking already an aspect contained in the eventuality expressed by the verbal predicate, and should not be supplied by the SF of the adverb.

A very different approach is one resorting to syntax to supply the missing link. This can be imagined in the style of Maienborn's analysis of locative modifiers in (Maienborn, 1998). In that work, Maienborn assumes three distinct syntactic base positions for three different readings of locative modifiers. The single basic SF of each locative modifier is modified according to the syntactic position the modifier occupies, yielding the SF specific to this position. This principle can be put to use for the PMA (and perhaps the manner readings of the other quality adverbs) in the following way <sup>12</sup>: As soon as an adverb is positioned in the relevant syntactic position, this will automatically trigger the addition of a semantic template to the SF of the adverb or verb which will establish the relation between the verb and its modifier. This relation can still be of a general, underspecified nature.

The last approach is the one using pragmatics to clarify the relation between adverb and verb. The concrete proposal I will discuss here is that of Dölling (Dölling, 2000). It does not exclude the above mentioned approaches, as these could be integrated in the overall mechanism. In Dölling's mechanism, which was originally introduced to deal with reinterpretations of adverbial expressions, operators are introduced at the level of the SF, which bring with them parameters which may or may not be given values in later steps. After the operators are applied to the basic SF, the resulting SF is called *inflected* SF. In a next step, the open parameters can be fixed, yielding the *parameter-fixed structure* PFS. At the end, the process delivers the *conceptual content* CC. This happens with the help

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<sup>12</sup>This must, necessarily, be based on the assumption that the position of PMA in their basic reading can be made syntactically explicit. Note that the semantic analysis presented here, although using such terms as clausal reading, does not hinge on the exact syntactic positions of the adverbs nor on a close association of the syntactic positions to the respective readings. For a comprehensive argumentation in favour of the association-claim, cf. (Shaer, 2000) for English and (Frey & Pittner, 1998; Frey & Pittner, 1999) for German.

of information supplied by general knowledge and pragmatics. Applied to the problem presented here, the obligatory application of the operator will provide free parameters which can<sup>13</sup>, in the next step, be fixed through taking recourse to pragmatic knowledge, rules and principles, deriving the correct connection between the free variable of the Adverb's and the verb's primary SF.

The integration of the metaphoric readings presents a challenge for all the above approaches. I will leave it to future work to see if it can be met.

## **7 Consequences**

The previous sections have resulted in the following:

- ★ The class of PMA does exist.
- ★ the defining characteristic of having just the manner-reading is exchanged in favour of a semantically motivated criterion.
- ★ *Quickly, slowly, quietly* etc. are PMAs, though ones which allow for metaphoric extension.
- ★ The clausal-reading of PMAs (if they have one) is different from those discussed for the other adverbs which also show the S-/VP-reading phenomenon:
  - ★ The direction of derivation is exactly opposite, proceeding from manner to clausal reading.
  - ★ The clausal readings are metaphoric.

## **8 Conclusion**

This article had two aims: For one, the reasons for the original assumption of the class of PMA were to be reviewed and the class was to be located within the group of quality adverbs. Secondly, an attempt was made to locate adverbs

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<sup>13</sup>Considering the frequency of the non-manner readings, the idea of adding operators in any case greatly adds to the psychological plausibility of this approach. If they were only introduced after some mismatch, we would have to assume far longer recognition times.

like *quickly* and *slowly* on the one hand and *quietly* and *gracelessly* on the other within a semantically redefined class of PMA, outlining their similarities and differences. In the first sections of the paper, after briefly introducing the general peculiarities of the quality adverb class, the original conception of the class of PMA was introduced. By showing that the class thus described was semantically poorly motivated, a more semantically motivated approach to describe the class was chosen. Followingly, cases like *quickly*, *slowly* and *gracelessly*, *quietly* were discussed. As their lexical semantics puts them right into the class of PMA, the possibility of their clausal reading resulting from other processes was introduced, pointing to their metaphoric character as a possible solution. The following section was spent in discussing Shaer's claim that PMA behave, after all, just like all the other quality adverbs, also providing two readings. It could be shown that the phenomena reported by Shaer function on a whole different level, and seem to have little to do with the manner/clausal alternation reported for the other quality adverbs. Finally, several possible directions for future research into the formal representation of PMA were presented.

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