

PURE MANNER ADVERBS REVISITED

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Abstract

Ernst (1984) notes that most *Quality Adverbs* have two readings, one of which is a VP reading, the other one a clausal reading. However, within this group there are also adverbs such as *loudly*, *woodenly* etc., which only allow for the VP reading, the so called *Pure Manner Adverbs*. While Ernst holds that these adverbs form a class because of their limitation to one reading, he cannot explain why adverbs with two readings, such as *quietly*, *graciously* do not belong to this class, although their VP readings have the same semantics as the PMA.

I propose to drop the ‘one-reading’ criterion in favour of a semantic characterization of PMA. The revised class of PMA will include adverbs with two readings, where the VP reading serves as the primary reading and the clausal reading results from a metaphorical usage of the adverb. A template for deriving these readings is introduced, using the underspecified event semantic approach of Dölling (2000). At the end of the paper, I discuss how constraints at the level of Dölling’s PFS can be used in making the semantic derivation system sensitive to the syntactic influence on the preferred readings.

1 Introduction

The aim of this article is twofold. On the one hand, this article discusses a possible semantic criterion for PURE MANNER ADVERBS = (PMA), a subclass of adverbs. On the other hand, I show how the readings of PMA can be derived and in how far the process of arriving at the correct reading can be made sensitive to syntactic input.

I start with a discussion of the basic terminology used in this article, given the original motivation for the proposal of a PMA class by Ernst (1984). Consequently, the problems of assigning a common semantic characteristic to this class are discussed. I then describe semantic criteria which can be used instead of the previous syntactic criteria in defining this class. The last part of the paper deals on the one hand with the formal semantic side of this approach, on the other hand with the integration of syntactic information into this approach. The formal approach to adverb semantics presented here, however, is not limited to PMA, but can be applied to the whole class of quality adverbs.

1.1 Basic terminology

The term Pure Manner Adverb(= PMA) appears first in (Ernst, 1987). Ernst groups PMA adverbs under Quality Adverbs, a class of adverbs contrasting with other adverb classes as shown in figure 1. A characteristic feature of Quality adverbs is that they allow for two readings, to which I will refer as clausal and as VP reading, respectively. The following examples illustrate typical Quality adverbs with two readings (where the X’- sentences are rough paraphrases of the intended reading).

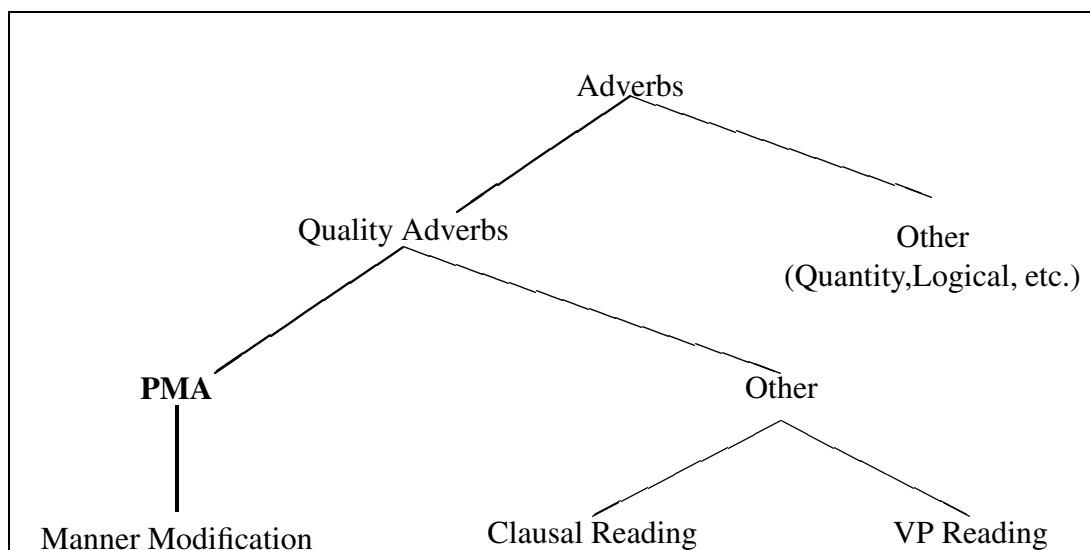


Figure 1: The subgrouping of adverbs. This represents the original conception of a subgrouping of adverbs into different classes according to (Ernst, 1984).

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

Thus, *appropriately*, *absent-mindedly* and *rude* all have a VP reading as in the b-sentences as well as a clausal reading, exemplified in the a-sentences. Traditionally, instead of VP reading one often talks about a manner reading. This is due to the fact that many such uses can be paraphrased by using *in a X manner*. However, since this does not hold for all uses (cf. (Ernst, 1984, 23f)), I use the less ambiguous term VP reading here. The term clausal reading is used here as a cover term for several groups which can be further distinguished, syntactically as

well as semantically. Thus, (1-2) have evaluative readings, while (3) receives a subject-oriented interpretation.

The PMA are exceptional within this class, since they allow only for a VP reading, but not for the clausal readings. The criteria for labelling an adverb PMA are the following:

- They have only one reading
- That reading is a VP reading

The resulting class of adverbs corresponds to what Ernst himself in earlier work (Ernst, 1984) called *Manner Class* and Bartsch in (Bartsch, 1972; Bartsch, 1974) *Mod₁*. Typical examples for this type of adverbs are given in (4).

- (4) a. Several of the mourners were singing softly.
b. The goons in the post office handled my package roughly.
c. The frammis must be held tightly in your left hand.
d. His bald pate shone brilliantly in the noonday sun.
=(309) in (Ernst, 1984, 94)

All the adverbs in these example only have a VP reading which yields a manner interpretation, but no clausal reading.

1.2 Syntactic behaviour of PMA

As the above examples already suggest, the readings of adverbs appear to be linked to their syntactic position. In particular, adverbs with VP readings seem to be positioned in the syntactic structure such that they are connected with the VP level, adverbs with other readings to ‘higher’ syntactic positions, cf. (Cinque, 1999; Frey, 1993; Frey, 2000; Frey and Pittner, 1998; Frey and Pittner, 1999; Laenzlinger, 1998; Pittner, 2000; Shaer, 2000)). Most of the times, the adverbs are treated as adjuncts. Since the PMA allow only the VP reading, some syntactic positions are not possible for them, as examples (5-8) show.

- (5) a. *The sun brightly had been shining that morning.
a’ *‘The sun had been shining that morning and that was bright.’
b. The sun had been shining brightly that morning.
b’ ‘The sun had been shining that morning in a bright manner.’
= (26/29) in (Ernst, 1987)

- (6) a. *She woodenly ignored them.
b. She was speaking woodenly.
=(2.149) in (Ernst, 2000b)

- (7) a. *Loudly, you must blow the trumpet.
b. You must blow the trumpet loudly.
= (7) in (Ernst, 1987)

- (8) a. *Everything smoothly was running.
 a' *'Everyting was running and that was smooth.'
 b. Everything was running smoothly.
 b' 'Everything was running in a smooth manner/way.'
 = (27) in (Ernst, 1987)

The influence of the syntactic position will be taken into account in formulating the constraints proposed in section 4.4.

2 PMA - a homogeneous semantic class?

The only criterion for an adverb to be counted among the PMA is for it to have only one reading, and that reading being a VP reading. From a semantic viewpoint, this is for several reasons hardly satisfying. The major problem is that the criterion of having only the VP reading is usually referred to with the phrase *having a manner reading*. The syntactic and the semantic level have not been clearly distinguished. Some adverbs, like *differently* and *well*, although possessing a VP reading only, should not be counted among the PMA. In (Ernst, 1987, 86,fn8) it is noted, that semantic criteria are needed to exclude these adverbs from the PMA. However, Ernst does not give any explicit criteria. Furthermore, one would want to have criterions for distinguishing PMA from manner readings of other adverbs even if one has only sentences with VP adverbs as empirical basis.

Ernst himself sees the following common semantic characteristics for PMA:

- PMA “usually involve perceptual qualities: light, sound, taste, physical action, and so on.”(Ernst, 1987, 84)
- PMA modify the perceptable dimensions of an event directly, the manner readings of other quality adverbs only indirectly.

These points will become clearer after looking at the following example.

- (9) a. John walked sadly off the stage.
 =(51) in (Geuder, 2000, 215)
 b. John walked loudly off the stage.

To understand the meaning of (9a), the following steps are necessary (adapted from (Geuder, 2000, 214ff). *Walking* constitutes a bodily movement. A bodily movement, in turn, can indicate a posture. A posture can be used as an indicator of emotions. Therefore, at least conceptually, *sadly* is not predicated over the event WALK, but over the posture expressed through the event.

To understand the meaning of (9b), on the other hand, no such additional interpretation steps are necessary, *loudly* applies directly to the event. That is, it can be said in (9b) the event in question was loud, while it cannot be said that it was *sad* for (9a). Rather, it expresses sadness.

In short, on the conceptual level, a PMA always predicates directly over the event. This is, of course, still only an approximation of a distinguishing criterion, but nevertheless useful.

Note that in how far this difference should be present in the semantic form is a different question altogether.

2.1 Problems for the semantic characterization

The above mentioned semantic criteria do lead to some conflict with the original one-reading criterion. Basically, two cases can be distinguished. On the one hand, adverbs like *quickly* and *slowly* fit the semantic characterization for PMA in their VP reading but nevertheless exhibit a clausal-VP reading difference. This seems to be due to their capacity to be used with a temporal reading. On the other hand, an adverb like *quietly*, also fitting the semantic characterization for PMA in its VP reading, allows a clausal reading. In both cases, the adverbs in question show an idiosyncratic behaviour which their antonyms and synonyms do not.

Many examples for the two readings of *quickly* and *slowly* exist, I have given two typical English examples with (10-11).

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

- (11) a. Lynn quickly raced down the hallway.
b. Lynn raced down the hallway quickly.
=(2.139) in (Ernst, 2000b, 87)

Note that these two different readings for *Slowly* and *quickly* are also available in other languages, e.g. French and German:

- (12) a. Lentement, Jean a lu le livre de Chomsky.
'Slowly Jean read Chomsky's book'
b. Jean a lentement lu le livre de Chomsky.
'Jean slowly read Chomsky's book.'
=(22a,c) in (Laenzlinger, 1998, 49f.)

- (13) a. Er muß langsam das Geschirr abspülen.
'It's time for him to wash the dishes.'
b. Er muß das Geschirr langsam abspülen.
'He needs to wash the dishes slowly.'
=(11) in (Pittner, 2000)

What is the difference between the two readings? The clausal reading does yield a temporal interpretation. It locates the event described in the sentence with respect to a reference time. E.g., (10) can be paraphrased 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 VP reading, on the other hand, can be paraphrased with the usual manner paraphrase, *in a ADJ manner*.

The reading differences bear some similarity to the reading distinctions found for temporal prepositional phrases, e.g. *He drinks a glass of wine in ten minutes* can be interpreted as either *He starts after a period of ten minutes with the drinking of his wine* or *He needs ten minutes for drinking (and finishing) a glass of wine*. The clausal reading in this example seem quite parallel

to the clausal reading of the temporal adverbs. The usage of the VP reading of the prepositional phrases, however, cannot be compared with the VP readings of *quickly* and *slowly*. The main differences are that on the one hand, the manner adverbs are inherently relative to the events they modify (that is, *to walk quickly* and *to run quickly* refer to movements at different absolute speeds, whereas the prepositional variants always indicate absolute time. In addition, manner adverbs predicate over subparts of the event in question, which the PPs never can.

Besides the adverbs allowing for temporal interpretations in a clausal position, there are some other adverbs whose semantic characterization in their VP reading groups them under PMA but which nevertheless allow for a clausal reading.

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

Quietly in (14a) has a mental attitude reading, so that the sentence can be paraphrased by *In a quiet state of mind, Kim had gone home to think it over.* (14b) has the regular manner interpretation.

Note that this problem is not necessarily restricted to mental attitude clausal readings, according to (Ernst, 2000b), evaluatives show the same behaviour, cf. (15). Since this data seems to be not universally accepted, I will not discuss it here.

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

To conclude, by using the semantic criterion we are forced to include two-reading adverbs into the PMA, which were formerly explicitly defined as allowing only for one reading.

2.2 The peculiarities of these adverbs

Interestingly, antonyms and synonyms of the adverbs discussed above behave differently, cf. *quickly* vs. *fast* in (16-17) and the difference between *quietly* and its antonym *loudly* in the repeated (14) and (18).

- (16) a. He quickly ran away.
b. He ran away quickly.
=(85)a/b on p. 103 in (Cinque, 1999)

- (17) a. *He fast ran away.
b. He ran away fast.
=(86)a/b in (Cinque, 1999)

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

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

As an aside, at least in German the two readings of *quietly* would be expressed by two different adverbs, *still* for the clausal and *leise* for the manner variant.

2.3 The solution: metaphoric extension

Ernst himself proposed an explanation for the behaviour of these seemingly irregular adverbs. He writes:

“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.” (Ernst, 2000a, 90)

This seems plausible, even more so since one characteristic of metaphoric extensions is its irregularity. I.e., generally only few items out of one category are actually used for metaphors. This leads to a slightly modified picture of PMA, presented in figure 2.

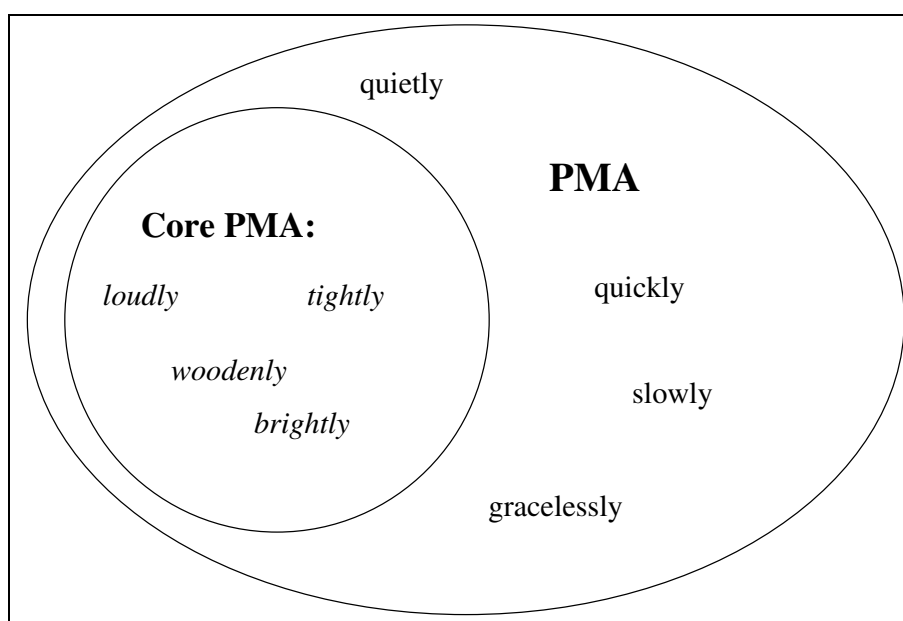


Figure 2: PMA- the reunited group

This new view does have some consequence for the basic reading discussion, that is the question of which reading of an adverb is to be considered the primary one, which the derived. According to (Ernst, 1984; Ernst, 1987; Geuder, 2000), the clausal reading should be considered as the more basic reading, and the manner interpretation as derived from this. On the view presented here, though, the exact opposite holds for the PMA: The VP reading is the primary reading, and if they allow a clausal reading, then that clausal reading is derived.

3 Implications for the formal apparatus

The previous sections have resulted in or assumed the following:

- The class of PMA does exist.
- PMA are sensitive to syntactic position
- the defining characteristic of having just the VP reading is exchanged in favour of a semantically motivated criterion.
- *Quickly, slowly, quietly* etc. are PMAs, though ones which allow for metaphoric extension and therefore a clausal reading.
- 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 but not the VP readings are metaphoric.

The question to be asked at this point is in how far this should be modeled in the semantic forms of the adverbs in question. Although the direction of derivation nicely lends itself to classification, it might not play any role on the synchronous processing level. I.e., the reasons for the classification could be diachronic, and the direction of derivation does not have any consequences for processing.

On the contrary, the inclusion of derivation information into the semantic representation becomes a veritable obstacle when it comes to including the syntactic information into the computation of sentence meaning. What I mean by this is that ideally, for any two Quality adverbs in a similar syntactic position in two syntactically similar sentences, one would want to be able to detect the similarity as far as readings are concerned right out of the SF of the sentence in question. If, however, the SFs for the adverbs with VP readings in such a situation would include the formalized derivation steps exemplified in discussing sentence (9), no such prediction could be made. That is, the directions of derivation cross, while the influence of syntactic position stays the same (cf. figure 3).

Syntactic Position	Quality Adverbs	PMA
VP-external(Clausal Reading)	Primary Reading	Derived Reading
VP-internal(VP Reading)	Derived Reading	Primary Reading

Figure 3: Classification of Readings: Syntactic Position vs. (Semantic) Derivation Direction

In the following, I will present an approach which formalizes the syntactic position in terms of formal complexity, i.e. an approach whose formalization makes the reading in question transparent, but not the direction of derivation.

4 A formal Account of PMA

A formal account of PMA should reflect a few basic insights. First of all, PMA all modify events. More precisely, it can be shown that by modifying an eventuality, they specify a specific aspect of that eventuality. Some PMA can be used with a clausal reading. This reading needs to be derivable. In addition, syntax and pragmatics must be able to influence which reading is chosen.

The procedure of the following sections is as follows: First, I will describe the underspecified approach of Dölling. Consequently, I will discuss the readings of *quickly* and *quietly* as they appear in the sentences (14 and 10). Beginning with formal description of the whole sentences, I will show what the lexical entries of the adverbs must look like and how to derive them from one lexical entry.

4.1 The underspecification approach

The approach adapted here is that of (Dölling, 2000b; Dölling, 2000a), whose main characteristics are listed below:

- Lexical entries consists of an underspecified SF
- The underspecified forms are put together compositionally to yield the *inflected* SF of the sentence. This process includes the automatic application of specific templates and operators after each compositional step.
- Finally, the free parameters contained in the inflected SF are fixed, using every accessible information (c.f. (Hobbs et al., 1993)) to derive the *Parameter Fixed Structure* PFS
- Parameters which remain free use default values

I will not discuss this system in any more detail, but the example derivation which follow should give an idea of how it actually works.

4.2 The readings of the adverbs

First, I will discuss *quietly*, later *quickly* will be treated analogous. The two readings of *quietly* are those that appear in the sentence (14), repeated here for convenience.

- [14] a. Kim quietly had gone home.
b. Kim sang quietly.
adapted from (2.151) in (Ernst, 2000b, 90)

I assume the formulae given in (19-20) as formal representations of the respective sentence meanings.

$$(19) \quad \exists e[\text{GO_HOME}(e, \text{Kim}) \ \& \ \exists y[\text{ACTOR}(y, e) \ \& \ \exists z [\text{STATE_OF_MIND}(z, y) \ \& \ \text{QUIET}(z)]]]$$

$$(20) \quad \exists e[\text{SING}(e, \text{Kim}) \ \& \ \text{QUIETLY}(e)]$$

From these sentence representations, we can derive (21) as the SF of the clausal reading, and (22) as that of the VP reading, the manner interpretation.

$$(21) \quad \lambda P \lambda e [P(e) \ \& \ \exists y [\text{ACTOR}(y, e) \ \& \ \exists z [\text{STATE_OF_MIND}(z, y) \ \& \ \text{QUIET}(z)]]]$$

$$(22) \quad \lambda P \lambda e [P(e) \ \& \ \text{QUIETLY}(e)]$$

Note that the PFS in (19) does have some shortcomings. In particular, the formula as is does not ensure that *Kim* and the ACTOR *y* are in fact the same person. Technically, there are several ways to do this. Two possible solutions are the following:

Solution A The format of the verbal predicate is kept as is, but the adverbial expression now takes the predicate and the subject as an argument.

In this case, the representation for the adverb would have to look like (23).

$$(23) \quad \lambda R \lambda y \lambda e [R(e, y) \ \& \ [\text{ACTOR}(y, e) \ \& \ \exists z [\text{STATE_OF_MIND}(z, y) \ \& \ \text{QUIET}(z)]]]$$

In this case, the SF depends on the valency of the verbal predicate, that is, the above representation works only for intransitive verbs, not for transitive or ditransitive ones.

Solution B The format of the verbal predicate is changed to a Neo-Davidsonian representation. The representation of the sentence is given in (24).

$$(24) \quad \exists e [\text{GO_HOME}(e) \ \& \ \text{ACTOR}(e, \text{Kim}) \ \& \ \exists y [\text{ACTOR}(y, e) \ \& \ \exists z [\text{STATE_OF_MIND}(z, y) \ \& \ \text{QUIET}(z)]]]$$

In this case, it is to be assumed that if a sentence has more than one actor, those actors are identical.

The decision for the one or the other solution will not be made here, suffice it to say that within the approach chosen, the second one would be easier to implement.

For the two readings of *quickly*, repeated here as [10], I assume a very similar representation for the two different readings, given in (25-26), skipping the sentence level.

- | | | |
|------|---------------------------------|-------------------------------|
| [10] | a. John quickly lifted his arm. | <i>John was quick in ...</i> |
| | b. John lifted his arm quickly. | <i>... in a quick manner.</i> |

$$(25) \quad \lambda P \lambda e [P(e) \ \& \ \exists y [\text{PREPARATORY_TIME}(y, e) \ \& \ \exists z [\text{SPEED_OF_PASSING}(z, y) \ \& \ \text{QUICK}(z)]]]$$

$$(26) \quad \lambda P \lambda e [P(e) \ \& \ \text{QUICK}(e)]$$

At least for the temporal reading, a formalization using time of speaking, reference time and an interval leading up to the event could be easily imagined. Although this would buy easy integration into formalized time-structures, I do not think such a solution could work while assuming one lexical entry for the adverbs in question. It would certainly not work in the framework discussed here.

4.3 The derivation of the readings

For *quietly*, I assume (27) as basic SF.

$$(27) \quad \lambda x [\text{QUIET}(x)] \text{ (basic SF)}$$

The operator **met''**, shown in (28), which is automatically inserted between any two items undergoing a compositional process (This operator is not the only possible operator, however), is applied next. The result is shown in (29), the inflected SF.

$$(28) \quad \lambda P \lambda x [\exists y [\text{R}_n^2(y, x) \ \& \ \text{Q}_n z [\text{R}_n^1(z, y) \ \text{C}_n \ \text{P}(z)]]] \text{ (operator met'')}$$

$$(29) \quad \lambda x [\exists y [\text{R}_n^2(y, x) \ \& \ \text{Q}_n z [\text{R}_n^1(z, y) \ \text{C}_n \ \text{QUIET}(z)]]] \text{ (inflected SF)}$$

Finally, the operator **mod**, used for turning predicates into modifiers, is applied, resulting in (31).

$$(30) \quad \lambda Q \lambda P \lambda x [P(x) \ \& \ Q(x)] \text{ (operator mod)}$$

$$(31) \quad \lambda P \lambda x [P(x) \ \& \ \exists y [\text{R}_n^2(y, x) \ \& \ \text{Q}_n z [\text{R}_n^1(z, y) \ \text{C}_n \ \text{QUIET}(z)]]] \\ \text{(result of applying mod)}$$

After appropriate fixation of the parameters we arrive at the following forms for the clausal (32) and the VP (33) reading, where the latter does solely contain default fixations.

$$(32) \quad \lambda P \lambda x [P(x) \ \& \ \exists y [\text{ACTOR}(y, x) \ \& \ \exists z [\text{STATE_OF_MIND}(z, y) \ \& \ \text{QUIET}(z)]]] \\ \text{(PSF of the clausal reading)}$$

$$(33) \quad \lambda P \lambda x [P(x) \ \& \ \exists y [= (y, x) \ \& \ \exists z [= (z, y) \ \& \ \text{QUIET}(z)]]] \\ \text{(PSF of the VP reading)}$$

The very same is to be done in the case of *quickly*. Leaving out the first steps, the two PSFs (35) and (36) are arrived at by fixing the free parameters in (34), again by using some sort of abductive reasoning for the clausal reading but defaults for the manner one.

$$(34) \quad \lambda P \lambda x [P(x) \ \& \ \exists y [\text{R}_n^2(y, x) \ \& \ \text{Q}_n z [\text{R}_n^1(z, y) \ \text{C}_n \ \text{QUICK}(z)]]]$$

$$(35) \quad \lambda P \lambda x [P(x) \ \& \ \exists y [\text{PREPARATORY_TIME}(y, x) \ \& \\ \exists z \text{ SPEED_OF_PASSING}(z, y) \ \& \ \text{QUICK}(z)]]]$$

$$(36) \quad \lambda P \lambda x [P(x) \ \& \ \exists y [= (y, x) \ \& \ \exists z [= (z, y) \ \& \ \text{QUICK}(z)]]]$$

In short, the mechanism by Dölling allows a straightforward derivation of the required readings out of the underspecified SFs.

4.4 Using syntax in choosing the appropriate PFS

Assuming the derivations shown above, the VP reading is always linked to a default fixation of parameters, whereas the clausal reading is not. On the contrary, in both cases, that is (32) and (35), no parameter receives its default fixation. Although syntax can, in these two cases, not predict with what values the parameters are fixed, it predicts that all of them are going to be fixed different from the default. This can be modeled by the following constraints:

- **CONSTRAINT 1** If an adverb is embedded maximally deep into the syntactic structure, that is at the VP level, assume a minimum deviation from the default fixation of parameters
- **CONSTRAINT 2** If an adverb is embedded higher into the syntactic structure, that is outside the VP level, assume full fixation of parameters.
- If these default assumptions do not work, proceed from the minimal to the maximal deviation and vice versa, until an appropriate fixation is found.

An advantage of this constraint-based connection between syntactic position and adverbial interpretation is its flexibility, which principally allows for overriding by other factors, such as intonation structure and the likes.

5 Conclusion

This article had two goals. In the first part, I showed that one needs to be careful not to mix semantic with syntactic differences in adverb grouping. In particular, I tried to give a semantically motivated criterion for deciding which adverb belongs to the class of PMA and which does not. The criterion I gave was that an adverb is a PMA if, in its VP reading, it modifies the event predicated over by the verbal predicate directly, that is, if its contribution to the sentence SF is of the form ADVERB(e) and no more. Contrary to the previous approaches by Ernst, this view counts adverbs such as *quickly* or *quietly* among the PMA, although those adverbs possess an additional clausal reading. This additional clausal reading is necessarily always metaphoric.

In the second part, I showed how the readings of PMA can be derived out of one lexical entry, using the system developed by Dölling. It turned out that the VP reading always resembled the default interpretation of the system itself, while the clausal reading involved fixation of the PFS deviant from the default. This finding led to the idea of using constraints fed by the syntactic position of the adverb for predisposing the system to a certain fixation of parameters. In this way, all syntactic information is used, while the semantic side remains as flexible as before.

The very same sort of constraints can, of course, also be used for all other Quality adverbs, though, in that case, it is not quite clear whether the optimal representation format has already been found. Similarly, it is as yet unclear, how finegrained the syntactic differences should be that fulfill different constraints and how many constraints are really needed. This questions become particularly important when considering that the term ‘clausal reading’ used throughout the paper is in fact a cover term for quite distinctive groups of adverb readings. Another open question represents the fact that in some syntactic positions some interpretation are not possible at all, which raises the question whether constraints alone are really enough.

However, these considerations are outside of the scope of the present paper.

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