This paper discusses the focus sensitivity of modal and evaluative sentence adverbs as probably, maybe and unfortunately, surprisingly. Using ways of testing on different linguistic levels, we claim that they are focus sensitive by the mechanism of free association with focus (cf. Beaver & Clark 2008). A short semantic analysis of the two classes of adverbs is given to explain differences they reveal in the tests. Finally, the notion of focus sensitivity in general is examined and different ways of deducing focus sensitive interpretations are compared.

1. Introduction

Within the field of information structure, focus sensitivity still is the topic of ongoing discussions. Focus sensitive expressions crucially refer in their interpretation to the placement of focus in the sentence.

The focus of a sentence is a part that is intonationally highlighted to signal that it conveys either new information or a piece of information that is to be contrasted with an alternative. Such an alternative may be given in context explicitly or as well be present just implicitly. We can distinguish between two occurrences of focus: The first one is that of a free focus, which picks out an entity and indicates that from a set of alternatives, the focussed constituent is the one that holds. This is illustrated in (1), where the focus on red may indicate that it is new information that the pill Paul took was red.

Another possible interpretation is that of a correction: Maybe Mary claimed before that it was a blue pill. There is a number of alternatives for the colour of the pill and a sentence like (1) expresses that red is the alternative that is true.

(1) Paul took the [red] pill.

Besides free occurrence of focus, there are also instances where the focus is bound by a semantic operator. These operators are called focus sensitive expressions:

‘[they] depend in their interpretation on which expression is intonationally highlighted, or put in ‘focus’” (Krifka 1995:2).
The standard example for focus sensitive expressions are focus particles, such as only, even or also in English (cf. Andersen 1972, König 1991, Krifka 1999, Bonomi & Casalegno 1993). Sentence (2) illustrates how only interacts with the sentence focus: (2a) stresses that it was only a rose that Paul gave to Charlotte and nothing else, while (2b) expresses that Charlotte was the only person Paul gave a rose to. Interestingly, in a context in which Paul gives a rose to Charlotte and one to Mary, (2a) would be true, but (2b) would be false.

(2)  
   a. Paul only gave a [rose]$_F$ to Charlotte.  
   b. Paul only gave a rose to [Charlotte]$_F$.

This example shows that there is even a truth-conditional effect of focus in some cases.

While only and other so-called focus particles have been investigated as prime examples of the phenomenon of focus sensitivity, the question of whether sentence adverbs (SADV) display a similar behavior has received much less attention in the literature. They have been mentioned with respect to focus sensitivity in some papers, but have never been systematically analyzed. One such hint to a special relationship between a sentence adverb and the sentence’s focus is given in Filipenko (2000):

‘[…] it is well known that often the scope of a sentence adverbial is not a situation as a whole, but only a communicatively important, rhematic fragment of a situation’ (Filipenko 2000:100).

A ‘communicatively important, rhematic fragment of a situation’ clearly refers to the focus of a sentence.

Additionally, Nuyts (2001) states that the scope of sentence adverbs is floating (cf. Nuyts 2001:57), i.e. it is not fixed which part of a sentence is to be modified by a SADV. It appears to be worthwhile to analyze whether the scope is floating depending on which entity of the sentence is focussed.

So far, only quantifying adverbs as usually have been mentioned with regard to focus, (cf. Lewis 1975, Rooth 1995, Krifka 2001). A systematic analysis of adverbs that refer to the degree of certainty of the speaker, as maybe, possibly, probably or definitely, as well as of those conveying the speaker’s attitude (fortunately, unfortunately, surprisingly) is still missing. The goal of the present paper is to analyse in detail the focus sensitivity of SADVs and to relate it to the adverbs’ meaning.

As can be seen in the sentence pair in (3), there appears to be a clear interaction between unfortunately and the focus: In (3a), the speaker considers it unhappy that it is the letter that was given to Mary, while in (3b) he regrets that it is Mary whom the letter was given to, instead of somebody else. If unfortunately is replaced by probably or maybe, the adverb meaning likewise takes into account the sentence focus.

(3)  
   a. Unfortunately George gave the [letter]$_F$ to Mary.  
   b. Unfortunately George gave the letter to [Mary]$_F$.

One such classification is done for the sub-class of speaker-oriented adverbs, which can be further divided into five subcategories (e.g. Bellert 1977):

i. modal adverbs: *maybe, probably, definitely, …*
ii. evaluative adverbs: *(un)fortunately, surprisingly,…*
iii. domain adverbs: *logically, morally, mathematically, …*
iv. conjunctive adverbs: *however, nevertheless, finally, …*
v. pragmatic adverbs: *frankly, honestly, briefly, …*

For this paper, I will limit myself to the analysis of modal and evaluative adverbs with respect to their interaction with focus. It is probable, however, that at least domain adverbs display a similar behavior.

Before taking a closer look at the mechanism of association with focus, I want to mention that there are in general always two readings available for the sentences to be discussed in the following sections. Consider sentence (4):

(4) **Probably** Peter spilled [white wine].

There is a wide scope reading available which can be paraphrased as ‘It’s probable that Peter spilled white wine’. In this case, *probably* takes scope over the whole sentence.

On the other hand, a narrow scope reading is possible: ‘It’s probably white wine that Peter spilled’. This one is the one we are interested in as *probably* associates with the focus of the sentence, i.e. *white wine*. In the following examples, thus, we concentrate on the narrow scope readings, even if a wide scope reading is available, too.

2. Association with focus

Taking a closer look at expressions that are claimed to be focus sensitive, it soon becomes obvious that the class is very heterogenous with regard to their characteristics. For some of these items an influence on the truth conditions can be found, as in example (2) above. Others do not reveal such a strong effect. Besides that, it is still under discussion whether a focus sensitive item requires a prosodically stressed element in its scope or whether this is optional. Some of the so-called focus sensitive expressions depend on a stressed constituent, others do not.

As a consequence of this heterogeneity, it seems plausible to assume different mechanisms for the association with focus.

One such idea is spelled out in Beaver & Clark (2008) who claim that an item’s focus sensitivity can be ‘lexically encoded or a non-conventionalized epiphenomenon’ (Beaver & Clark 2008:41).

According to this grade of ‘strength’ of focus sensitivity, they establish three ways of association with focus: Quasi association, free association and conventional association with focus. (Their model will be called ‘QFC model’ in the following, as an abbreviation for the three types of association with focus.) We will shortly introduce these types.

The mechanism that is behind the notion of quasi association is a solely pragmatic inference and arises with non-veridical operators, as negation:
The inference that can be drawn from (5a) is that Peter buys something else for his girlfriend. (5b) on the other hand implies that Peter buys a diamond ring for someone else. These inference can be best described as conversational implicatures in the sense of Grice (1975). As they are triggered by a specific form of the utterance, they can be calculated on the basis of the maxim of manner. They are cancelable: By adding ‘...in fact Paul does not buy a diamond ring for anyone’ to (5b), the implicature disappears. This is further proof for the claim that the effect here is a pragmatic one.

We know, however, that negation in a sentence does not require a focus, i.e. a prosodically stressed element in order to be interpretable. It is completely unmarked to have negation without a focus in its scope. So, we can see this type of association with focus as a rather loose connection between operator and focus.

Other instances of quasi-associating operators are verbs of belief like to think or verbs of appearance like to seem (cf. Beaver & Clark 2008:50).

The second type, free association with focus, appears with operators quantifying over an implicit domain, as quantifying adverbs (e.g. always) do:

\[(6)\]
\begin{enumerate}
\item Paul always brings [flowers]$_F$ for his wife.
\item Paul always brings flowers for his [wife]$_F$.
\end{enumerate}

\textit{Always} in (6a) quantifies over the situations in which Paul brings something for his wife. The sentence asserts that whenever Paul brings something, it is flowers that he brings. (6b), on the other hand, has as an implicit domain the set of events in which Paul brings flowers for someone. Given this domain, (6b) states that it is his wife he brings flowers for.

Besides these adverbs, quantificational determiners (as every or some), generics, counterfactuals or verbs of desire display the same behavior and are treated as instances of free association with focus (cf. Beaver & Clark 2008:52).

The last type of association with focus is the ‘strongest’ interaction of an operator with focus and the one that is talked about most in papers on focus sensitivity. Conventional association can be found, for instance, in focus particles as only mentioned above. The dependence of only on the sentence focus is lexically triggered and makes an assertion on alternative answers to the ‘current question’. This current question (or ‘question under discussion’) can be thought of as the question that is answered with the current utterance. Consider the sentence pair in (7) for illustration: (7a) with a focus on salad answers a question like ‘What does George eat?’. (7b) on the other hand gives an answer to ‘What does George do with salad?’:

\[(7)\]
\begin{enumerate}
\item George only eats [salad]$_F$.
\item George only [eats]$_F$ salad.
\end{enumerate}

According to these different underlying questions, there are different sets of alternative answers, i.e. alternatives to the focussed element. The set for (7a) could be \{cake, salad, soup, ice cream, sandwiches\}, the one of (7b) would contain alternatives to to eat such as \{eat, grow, like, buy\}.

This distinction between three types of association with focus proves highly valuable as it accounts for different characteristics of focus sensitive expressions.
Considering sentence adverbs, we want to analyze by which mechanism they are focus sensitive. Where do they fit into the QFC-model of Beaver & Clark (2008)? And do modal adverbs behave different from evaluative adverbs? In what way does this focus sensitivity result from their semantics? These questions will be examined in the following sections.

3. Analysis

To analyze whether a sentence is conventionally associating or quasi associating, there is mainly one crucial question: Does the item in question require a stressed element within its scope? I mentioned above that focus sensitive expressions differ in this respect. Beaver & Clark (2008) claim that conventional associating items do need an intonationally highlighted element, quasi associating items do not.

This can be examined on almost all levels of linguistic analysis. First, we will test sentence adverbs on the phonological level by analyzing sentences with second occurrence focus and leaners, i.e. sentences without a stressed element in the adverbs’ scope. As we will see in section 3.1, however, this is only in part applicable for sentence adverbs.

The same question can also be approached on the syntactic level by moving the stressed constituent out of the operator’s scope to test whether the sentence is still acceptable. There are of course different movements of this type. We will, amongst others, discuss topicalization and inverted cleft constructions in section 3.2.

Finally, it was observed that some focus sensitive expressions can also associate with presuppositions. This observation can be used as a test on the semantic-pragmatic level: A presupposition will be inserted into the sentence to see if the focus sensitive item alternatively associates with this inference.

These tests serve as a first indication to how strict the interaction between sentence adverbs and the focus of the sentence is.

3.1. Phonological level

In general, theories for focus sensitivity can be divided into semantic and pragmatic theories. Semantic theories analyze focus sensitivity as a lexical feature of an expression. They claim that a phonologically stressed element in the syntactic scope of the focus sensitive expression is a grammatical necessity.

Pragmatic theories of focus sensitivity, on the other hand, do not assume such a requirement for a stressed element.

The question whether an assumed focus sensitive expression requires a focus in its scope, therefore, is also relevant for the competition between semantic and pragmatic theories of focus. For a semantic approach that claims that a stressed element generally is necessary, it would be hard to justify why, when looking at examples, some expressions ask for such a stressed item and others do not. What is plausible then, is rather that there are different mechanisms for the association with focus, some semantic, others pragmatic. We will follow this idea in section 4.

In the course of this discussion, the phenomenon of second occurrence focus (SOF) attracted a lot of interest in the recent years (cf. Krifka 1995, Jäger 2004, Beaver et al. 2007, Büring 2008, Féry & Ishihara 2009). Second occurrence focus is the appearance of focus in a sentence which is merely repeated after a prior occurrence. Consider (8) for illustration:
A: Everyone already knew that Mary only eats vegetables.
B: If even Paul knew that Mary only eats vegetables, then he should have suggested a different restaurant.
(Beaver & Clark 2008:143, original Hajičová et al. 1998)

The SOF in B’s utterance is not prosodically highlighted again, but still, only associates with vegetables. The focus here, thus, is phonologically invisible. This could be a very convincing argument for pragmatic theories for focus sensitivity.

It was, however, claimed several times that there IS a phonological marking, it is just a weak one (cf. Beaver & Clark 2008, Beaver et al. 2007). The question whether focus sensitive expressions can associate with non-stressed items, therefore, is still not answered.

Another approach to the same question, i.e. whether a focused element is necessary, is to analyze sentences containing leaners (unstressed pronouns). Beaver & Clark (2008) discuss this for only and always; sentence (8) proves that always can do without a focus, while the same does not hold for only:

(9) Content: You had many discussions with Sandy, but what I want to know is the extent to which you talked about Fred. Of all the times you talked with Sandy, how often was Fred the person you talked about?
I always discussed him with Sandy.
‘Whenever I discussed someone with Sandy, it was Fred.’
(Beaver & Clark 2008:150)

Transferring the same test to sentence adverbs causes problem as can be seen in the following two examples:

(10) a. [Definitely]F she discussed’im with Sandy.
b. ?[Possibly]F she discussed’im with Sandy.

(11) A: Charlotte always discusses people with Olivia but they never talk about George.
    But yesterday they did.
B: #Yes, yesterday Charlotte [surprisingly]F discussed’im with Olivia.

(10) as well as (11) are hardly acceptable. Why is this?

The test is not perfectly applicable for sentence adverbs, as it requires that the adverb itself is stressed. But not all adverbs can be stressed – for different reasons: Weak modal adverbs cannot be intonationally highlighted for matters of plausibility. If the speaker is not sure whether something is true or not, it is not likely that he strengthens this uncertainty.

Evaluative adverbs, on the other hand, cannot be stressed as they operate on a different level than on that of descriptive meaning. They are expressive devices (cf. section 4) and expressions on this level of meaning usually cannot be stressed (cf. for instance German modal particles).

So, the test requires that the SADV itself is stressed as explicitly no other entity in the sentence should be focused. Everything apart from the sentence adverb is supposed to be given information. Strong modal adverbs can be stressed, weaker ones cannot and evaluative adverbs neither (only when contrasted with another evaluative adverb). Consequently, this test on the phonological level cannot be used for sentence adverbs.
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3.2. Syntactic level

The same idea to judge the strength of focus sensitivity an item reveals, can be brought to the syntactic level. To test whether an item is as strictly focus sensitive as focus particles and thus requires a stressed entity in its c-command domain, we can simply move the focused constituent out of the scope of the adverb. If the sentence is no longer acceptable, this proves a strong dependency on focus.

A strong hypothesis may be formulated as in Tancredi's (1990) ‘Principle of Lexical Association’:

‘An operator like only must be associated with a lexical constituent in its c-command domain.’ (Tancredi 1990:39)

This hypothesis accounts perfectly for the ungrammaticality of a sentence like (12):

(12) *[George,] he only sees ti.

When considering a sentence adverb, however, we do not get such a clear result. A conversation as in (13), with the evaluative adverb surprisingly in B’s answer, is marked but still acceptable:

(13) A: Do you know whether Paul ate anything during the party?
   B: ?Well, yes! [Chocolate cake]F I think Paul surprisingly ate t, although he always tells me that chocolate makes him put on weight!

The reading where surprisingly is focus sensitive would thus be: ‘I think that it was chocolate cake that Paul ate and I was surprised that it was chocolate cake’, which can be drawn from sentence (13). It is, however, not the preferred word order. The sentence would be unmarked if the focused constituent was inside surprisingly’s scope.

For a comparison, the same sentence is given with possibly and typically:

(14) A: Do you know whether Paul ate anything during the party?
   B: Yes, [chocolate cake]F I think Paul possibly ate t.
(15) [Chocolate cake]F I think Paul typically eats t.

Usually, the SADV would associate with a constituent in its c-command domain, but as the verb is already mentioned in A’s question, it constitutes background information. The reading where probably associates with chocolate cake, which is focused but moved outside the adverb’s scope, is readily available in answer B in (14). In the case of surprisingly in (13), however, this reading is much less easily available, although not impossible. Sentence (15), then, is completely acceptable. The desired readings ‘I think that it was possibly chocolate cake that Paul ate and nothing else’, and respectively ‘What Paul typically eats is chocolate cake and nothing else’ are unproblematic to get.

Inverted cleft constructions and topicalization yield the same results:

(16) [Beer]F is what I think Mary probably/?surprisingly wants to drink t.

The modal adverb probably readily associates with the focus, while the version with the
evaluative adverb is marked: Again there is a clear preference for a different word order.

Finally, as a last piece of evidence, we want to consider whether the adverbs can associate with ellipsis. Sentences (13) and (14) are fully grammatical which is not self-evident as the same does not work for a focus particle like only (cf. (15)):

(17) Olivia probably ate [the fish] because George definitely did.
(18) Olivia ate [the fish] and George fortunately did (as well).
(19) Kim only SALUTES because Sandy only does.

(Cannot mean: ‘Kim salutes (and does nothing else) because Sandy salutes (and does nothing else).’ (Beaver & Clark 2008:177))

In general, therefore, it is possible for a sentence adverb not to have a focused constituent in its scope. What we observe in these cases of the focus being moved out of the adverb’s scope, however, is that there is a difference between different types of adverbs. It is not a difference in grammaticality, but rather a subtle difference in markedness: the sentences with the quantitative adverb typically are completely acceptable, probably is unmarked as well, but the evaluative adverb obviously is not as flexible with respect to the placement of focus.

3.2. Semantic-pragmatic level

In this part, we still follow the same question (i.e. Does the adverb necessarily associate with the focus of the sentence?), but from a different perspective: from a semantic-pragmatic point of view.

A number of approaches to focus sensitivity claims that association with focus actually is association with presupposition (cf. Cohen 1999, Rooth 1999, Geurts & van der Sandt 2004). This can be illustrated with the case of always: The implicit restrictor argument that plays a role in the interpretation of sentences like (6), is determined contextually, i.e. it can be seen as presupposed. The strong version of this claim is that all instances of focus sensitivity are cases of association with presupposition:

‘It has been argued that adverbial quantification is not sensitive to focus, but rather to presuppositions [...]. These sentences [sentences containing adverbial quantification, S.D.] can be understood as quantifications over situations that satisfy their presuppositions.’
KRIFKA 2001:3

This approach, however, does not always provide the right predictions (cf. Rooth 1999, Beaver 2004) as can be seen in (20). B’s focus on John does not presuppose that someone borrowed the badminton racket, although this would be predicted:

(20) A: Did someone borrow my badminton racket?
   B: I don’t know. If [John] borrowed it, you can forget about getting it back in one piece. (Rooth 1999:241)

Association with presupposition cannot account for all cases of focus sensitivity. Still, this theory is important for the recent analysis. It is useful as it can be used to test whether focus operators can associate with something else than the focus. The claim is that expressions that are strongly focus sensitive, such as focus particles necessarily associate with an focused
item. They would not associate with a presupposition instead, even if the sentence contains one. But 'weaker' focus sensitive operators may be free to chose the presupposition.

Sentence (21) contains a presupposition triggered by the verb to fail, i.e. that the police tried to find Paul's car:

(21) The police probably/surprisingly failed to find Paul’s [car].

According to our hypothesis, two readings are available: The adverb may associate with the presupposition (‘It is probable/surprising that the police, if they searched for Paul’s car, did not find it’) or with the focus on car (‘It is probable/surprising that what the police failed to/didn’t find, was Paul’s car and nothing else’).

In general, both of these readings are possible. The context is crucial: a preceding context like ‘Tell me some news!’ would facilitate the first reading. When talking about stolen things of Paul, on the other hand, the association with focus reading is much more plausible, as Paul's car is contrasted with a number of alternatives.

A further example is given in (22):

(22) a. Charlotte probably took [someone] to the movies.

b. #Charlotte surprisingly took [someone] to the movies. (Beaver & Clark 2008:205)

In this case, the reading where the adverb associates with the presupposition results in a completely uninformative proposition we can paraphrase like this: ‘The person that Charlotte probably/surprisingly took to the movies was someone’.

We would expect the sentence to be unacceptable. (22a), however, is completely acceptable. This is due to the fact that probably associates with the presupposition (Charlotte went to the movies) here, which results in the reading: ‘It is probable that, when Charlotte has gone to the movies, she took someone there’.

So, in (22), probably associates with the sentence’s presupposition, while surprisingly associates with focus. Possible explanations for this difference will be considered in the next section.

To sum up what we know to this point, we can state that modal and evaluative sentence adverbs can associate with a constituent outside their scope and they can also associate with a presupposition instead of the focus. They are, thus, no conventional associating expressions. A discussion of the adverbs’ semantics is supposed to clarify whether they are quasi or free associating with focus.

4. The adverbs’ semantics

Modal and evaluative adverbs differ in some important aspects. While modal adverbs are non-factive and do not presuppose the truth of the proposition, evaluative adverbs do that: If a speaker uses unfortunately to express his attitude towards a state of affairs, he presupposes at the same time that this state of affairs holds.

Modal adverbs, moreover, operate on the level of descriptive meaning and can be accounted for with modal logic. One approach that takes a grading of certainty into account, is the one by Kratzer (1991). She defines possibility and necessity as two basic notions to grasp different “shades” of certainty of the speaker with respect to the truth of the proposition. Necessity is defined as follows:
‘A proposition p is a necessity in a world w with respect to a modal base f and an ordering source g iff the following condition is satisfied: For all \( u \in \bigcap f(w) \) there is a \( v \in \bigcap f(w) \) such that \( v \leq g(w) u \) and for all \( z \in \bigcap f(w) \): if \( z \leq g(w)v \), then \( z \in p \).’ (Kratzer 1991:644)

This quote states that a proposition p is a necessity if and only if it is true in all worlds that are close to the ideal world. The ideal world is determined by the ordering source. From this, the definition of a possibility is deduced:

‘A proposition p is a possibility in a world w with respect to a modal base f and an ordering source g iff \( -p \) is not a necessity in w with respect to f and g.’ (Kratzer 1991:644)

These two basic terms, then, can be graded to weak necessities, good possibilities, slight possibilities, etc. An adverb like probably, for instance, would be a weak necessity according to Kratzer: ‘p is a better possibility than \( -p \) in w with respect to f and g’ (Kratzer 1991:644). The modal base f and the ordering source g, thus, are used as parameters for the judgment of sentences:

(23) \([\text{probably } \alpha]_{f,g} = \{w \in W : [\alpha]_{f,g} \text{ is a weak necessity in } w \text{ with respect to } f \text{ and } g\}\)

Evaluative adverbs, on the other hand, are an instance of expressive meaning: they express the speaker’s attitude and operate on a different level than descriptive meaning. One approach to deal with expressive meaning, is to treat it as conventional implicature (cf. Potts 2003, 2005, 2007).

Conventional implicatures, according to Potts (2003), are comments upon the at-issue content of an utterance, but we won’t be able to go into detail about that here.

So, at first glance, the two types of adverbs seem to be rather different. What we are interested in is how their focus sensitivity arises.

Beaver & Clark (2008:52) claim that ‘free association affects operators which perform quantification over, or comparison within, an implicit domain.’ As described above, this type of association with focus occurs for expressions with implicit arguments: a free variable in the logical form is tied to a contextually salient value, as in (24):

(24) Peter always brings flowers in e.
    \( \forall e \in \sigma, \)
    \( \text{where } \sigma \text{ is a set of events} \)

This idea can be transferred to modal adverbs. For them, an epistemic modal base serves as an implicit argument, i.e. the modal base is the set of possible worlds compatible with the speaker’s belief. The adverb then quantifies over the set of possible worlds, as illustrated for definitely in (25):

(25) \([\text{definitely } \Phi] (w) = 1 \text{ iff} \)
    \( \text{For all } w' \in B(w): \)
    \( \text{There is a } w'' \in B(w) \text{ with } w'' \leq_w w' \)
    \( \text{and for all } w''', w'' \leq_w w'': [\Phi] (w''') = 1 \)
    \( \text{(where } B(w) \text{ is the modal base for } w \text{ and is } \leq_w \text{ the ordering source for } \Phi) \)

Can the same assumption be made for evaluative adverbs? Yes, it just needs a minor
adjustment. Evaluative adverbs compare alternatives to the focused constituent, i.e. they express that the chosen entity is e.g. better or worse than some alternative. We can grasp this by a bletic modal base, so the possible worlds are more or less ‘desirable’. (26) shows how this intuitively should look like:

(26) [fortunately Φ] (w) = 1 iff

There is a w′∈B(w) such that w′ <good w).

5. Discussion

5.1. Deducing the focus sensitive reading

The paragraph above shows how to deduce the adverbs’ focus sensitivity from their semantics. But there is a more basic question we want to address: Is it necessary to assume a specific property such as focus sensitivity to account for the reading in which the adverb’s meaning applies to the focused constituent?

In general, there are two possibilities how the focus and the operator interact. They can be described as follows:


b. [SADV ] ([... [FOK] ...]) = [[... ]p] + [SADV ][FOK]

Either the meaning of the adverb applies to the whole proposition and the focus is computed in a independent step (27a) or the sentence adverb interacts directly with the focus (27b).

Does the order of application matter? To answer that question, we will spell out both versions.

The first idea is to assume that probably is focus sensitive. So, in (28), probably associates with the focus on white wine, which can be illustrated as in (29):


(29) ∀x ∈ ALT (white wine): [Peter spilled x <p Peter spilled white wine],

where x ∈ ALT (white wine), x ≠ white wine.

The reading that we get is: ‘It’s more probable that what Peter spilled was white wine than any other alternative’. This one is a straightforward approach for focus sensitive expression, using alternative semantics.

There is, however, a way to deduce this reading without assuming something like a lexicalized interaction between the sentence adverb and the focus. For this idea, we interpret the sentence’s focus as a free focus which leads to the calculation of a set of alternatives, such as ALT = {white wine, red wine, beer, coffee…}. The free focus on white wine, then, leads to an implicature that what Peter spilled was white wine:

(30) ∀x [Peter spilled x → x = white wine]

The sentence adverb applies to the whole sentence. Either it applies to the conjunction of the proposition and the implicature triggered by the focus (31), or it applies to the proposition first and the implicature is calculated in a second step. The second possibility can be ruled out
as it would lead to the reading ‘It’s probably that Peter spilled white whine, and what he spilled was white wine and nothing else’. This paraphrase involves a factivity which actually is not present. It is not clear whether Peter spilled white wine or not, but the last part implies a certainty about that (32).

(31) probably (Peter spilled white wine \& \forall x [Peter spilled x \rightarrow x = white wine])
(32) probably (Peter spilled white wine), \forall x [Peter spilled x \rightarrow x = white wine]

The reading of the interpretation in (31) is ‘It’s probable that Peter spilled white wine and that what he spilled was white wine and nothing else.’

Basically, this comes close to the interpretation in (29) where probably is interpreted as focus sensitive. Before we discuss the relevance of these two analyses, we will have a short look at an evaluative adverb. We claim that it can be interpreted in the same way:

(33) Fortunately Peter spilled [white wine].

The focus value of white wine could be ALT = \{white wine, red wine\}. Our world knowledge influences the choice of alternatives here, as we know that usually we prefer that nothing is spilled at all, but if something is spilled, something that is easier to clean up is to be preferred.

(34) [Peter spilled white wine] = 1,
\forall x. Peter spilled x \leq_{good} Peter spilled white wine,
where x \in ALT (white wine), x \neq white wine

The interpretation in (34) includes the idea that there has to be at least one worse alternative for the utterance to make sense, and expresses the factivity that is involved.

5.2. Focus Sensitivity

What we can conclude from these observations and possible interpretations, is that focus sensitivity is not an inherent, systematic characteristic of an expression, but rather a term for a range of strengths of association with focus.

When considering the two ways how to deduce the meaning of a sentence like (28), we do not want to claim that these are simply two distinct analyses, but rather that one develops from the other. We can imagine readily that the phenomenon of free focus, which is a purely pragmatic phenomenon, is something like a communicative universal. A prosodic stress signals that there are are alternatives to the chosen expression which explicitly have not been taken.

If a semantic operator occurs in the same sentence as the free focus, then, it can be interpreted as correlating with the focus, e.g. such that the attitude of the speaker towards the state of affairs holds just in case of the chosen expression, but it would not hold for an alternative expression. This correlation between operator and focus has the status of Beaver & Clark’s (2008) quasi association, which is a merely pragmatic inference and corresponds to an interpretation as in (20).

As the result of a longer process, this correlation may become part of the item’s semantics, it becomes “semanticized”. So, whenever the item appears in a sentence, it is necessarily interpreted with respect to the sentence’s focus. More than that: it requires a focus to associate
The focus sensitivity of sentence adverbs

with. This corresponds to the mechanism of conventional association.

Focus sensitivity, thus, ranges from a spontaneous co-occurrence to lexically determined and obligatory association with focus. It is more or less anchored in the semantics of an item, which can be seen as a matter of time of development.

6. Summary

In this paper, we could demonstrate that sentence adverbs are not necessarily focus sensitive but they can be interpreted as such. This means that they do not obligatorily require a stressed element in their scope, but they readily associate with one if present. We analyze them as an instance of free association with focus where a modal base serves as implicit argument (restrictor argument) for the adverb. In the case of modal adverbs, this is an epistemic modal base, for evaluative adverbs it is a buletic on.

Moreover, we noticed in the tests that there are subtle differences concerning the grammaticality of sentences with modal and evaluative adverbs. They are not as strong as affecting the grammaticality of the sentences, they are rather on the level of markedness. We discussed different explanations for them above.

Finally, there remain some open questions. First of all, it appears to be controversial whether the need for a stressed element in the scope can really be used as a criterion for focus sensitivity. It is often used as a test, but it should be rather regarded as a hint to how strongly an item is focus sensitive.

Another question that is not fully answered, is why modal adverbs are more flexible as evaluative adverbs with respect to the placement of focus.

Finally, it would be interesting whether there might be proof for the assumed development of focus sensitivity from a diachronic perspective. All of these open issues are of interest to further research.

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