

”Only” as a Mirative Particle

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1 Mirativity

The concept of **mirativity** was introduced in typology by DeLancey (1997) for certain ”tenses”. DeLancey refers to earlier traditions in ”Balkan Linguistics”. Malchukov (2003) uses it in a typological overview of contrastive markers for the origin of certain contrastive markers. A mirative marker indicates that whatever it marks is surprising.

The fact that one can express surprise does not need a special explanation, but the fact that one can do it with a range of grammaticalised expressions in a whole range of languages does. The explanation has to make a connection with a tendency in interpretation to go for the unsurprising. The same tendency is assumed in probabilistic disambiguation, where one tries to interpret the linguistic expression by giving it the meaning that is most plausible in the context (this is just the most rational way to disambiguate, if other resources do not lead to a unique reading). Another well known instance is to go for stereotypical interpretations. That means that interpreters will avoid the surprising unless told not to —which would be precisely the aim of the mirative marker. Mirativity is useful because it protects surprising content from correction by interpreters.

In English, one can find the markers *even*, *still*, *already* and *only* that seem to be mirative (another group of mirative devices are the adversative markers: these are not discussed here). In all four cases, they are specialised mirative markers, they express surprise at the large size of a quantity (*even*), surprise at the small size of a quantity (*only*), surprise at the early time of some event or the advent of some state (*already*) or at the long continuation of a state (*still*). Surprise would be a question of conflict with an expectation. Together this gives the following table:

even:	more than expected
only:	less than expected
already:	earlier than expected
still:	later than expected

It is relatively simple to state the semantics of the four particles informally in a uniform way.

(1) Bill is still in Paris

(1) states or reconfirms that Bill is in Paris at the moment of speaking and presupposes that he was expected to have left from there before the moment of speaking. The point of the utterance is to assert that the presupposed expectation is false.

(2) Bill is already in Paris

(2) states that Bill is in Paris but presupposes him being elsewhere with the intention of going to Paris and the expectation that he would not be in Paris yet.

The point of the utterance is to assert that the presupposed expectation is false.

(3) Even Bill is in Paris

The sentence states that Bill is in Paris and presupposes an expectation that others but not Bill would be in Paris.

The sentence asserts that the presupposed expectation is false.

(4) Only Bill is in Paris

(4) states that it is Bill who is in Paris and presupposes an expectation that "more than just Bill" would be in Paris. It asserts that the presupposed expectation is false.

This is a simple approximation to the semantics of the mirative particles if they are the outermost operator in an assertion and the point of the utterance is to express the surprise. In the case of "still", "already" and "even", the host itself states new information, expected to be false. *Only* is special because the information stated by the host is expected to be the case: the expectation was "Bill and more", and this includes Bill.

The semantics of mirativity seems straightforward and can be isolated from the other aspects: a presupposed expectation is asserted to be false.

It is tempting to think of the mirative markers as correction markers. And not entirely wrong because they can be used in this role.

- (5) A. Bill must be back home.
B. No, he is still in Paris.
A. [At a meeting in London.] Where is Bill?
B. He is already in Paris.
A. [Idem] Bill must be here.
B. Even Bill is in Paris.
A. The whole sales team is in Paris.
B. Only Bill is.

But —as it turns out— the expectation can be much weaker than the belief of the interlocutor (or the common ground, or a second speaker) and can even be vanishingly weak: a mere suggestion or what somebody might think. Especially in subordinate occurrences of *only*, the expectation can almost disappear.

Examples like (6) should therefore not be taken too seriously as counterexamples to a mirative analysis. It seems enough that the alternative to the presupposed expectation of the speaker or everybody is also under consideration in the context.

- (6) [I/everybody expect only John to come.]
If only John comes, we will have enough to eat, but if he
brings his son...

The weakening of presupposition in particles is a general phenomenon and can be related to the "semantic weakening" and "pragmaticisation" that is attendant on grammaticalisation. In the case of mirative particles, Fong (2003) reports that "already" in Singapore can function as a perfective marker (without mirativity) and Östen Dahl (1985) takes it that there is a general tendency of the *already*-type particles to become perfective markers. Fong describes the process by which "already" can mark perfectivity as a case of semantic epenthesis: "already" normally marks two semantic features: surprise and perfectivity. In the perfective uses, surprise is still marked by "already" but it does not become part of the final interpretation that the hearer reaches and was never a part of the interpretation that the speaker intended the hearer to reach.

While this is an interesting way to look at what is going on here, there is another avenue: weak presupposition. The presupposed expectation can be common ground (before the speaker had the new information), they can be the speaker's or the hearer's, but they can also be the expectation of a third party or of a possible third party. The weakest expectation is "there might be somebody who might think that A". The presupposition resolution mechanism tries to find the weak presupposition in the common ground and in the opinions of highly activated persons, but also allows suggestions and attitudes by other people as antecedent and can in the last resort just assume that the weak presupposition is somehow thinkable.

The outcome of presupposition weakening and semantic epenthesis is nearly the same. The weakening approach finds confirmation in what one finds as "presupposition" in the weaker versions of "wel" or "doch": in the strong versions they are correction particles, in the weaker versions, the presupposed proposition that they confirm is merely suggested or even completely absent Hogeweg (2005), Zeevat (2004), Karagjosova (2003). In fact, the strength of the presupposition antecedent is the key factor in keeping the different meanings of these particles apart in a context (and the factor that determines the intonation, the other clue for disambiguation: overt antecedents lead to contrastive intonation). It is well-known that "even"-type particles are a source for the non-mirative additive particles (Malchukov (2003)). One may speculate that "still" may be a source for progressive marking. *Only* has a tendency to turn into an adversative

particle, as in Dutch or English and in Hungarian¹.

- (7) Peter is erg aardig. Je moet alleen oppassen als hij gedronken heeft.
Peter is very nice. But/Only you must take care if he has been drinking.

There is an almost universal agreement that *only* means "to the exclusion of others". Barwise and Cooper (1981), Rooth (1992), van Rooy and Schulz (2005), Horn (1969), Ippolito (2006).

- (8) Only Bill is in Paris
Nobody but Bill is in Paris.

The discussion is then about what to do with the "prejacent", the host of *only*. For some, it is asserted, others defend that it is presupposed, or that its topic "x is Paris" is existentially presupposed. Ippolito even lets the presupposition be "If somebody is in Paris, Bill is". van Rooy and Schulz (2005) makes the prejacent an implicature. A healthy exception is Atlas Atlas (1993).

Zeevat (2007) notes the following puzzle about *only*. In Rooth (1992), an assertion like "John likes SUSAN", with focus on "Susan" turns out to mean the same as "John likes only SUSAN". But, intuitively, the meaning is not the same. My conclusion in 1994 was that *only* meant "less than expected" or that related to widening of the domain, but I did not see my way to a full treatment of *only* based on that view². The same puzzle arises in question-answer pairs.

- (9) A. Who showed up?
B. Only John.

B is already expected to give an exhaustive answer to the question. The addition of *only* would then be superfluous. The mirative view makes it easy to understand: more people were expected to show up and only John came.

Umbach (2005) has a similar and beautiful example (10) for this phenomenon.

- (10) (Things have changed in the Miller family.)
a. Yesterday, RONALD went shopping.
b. Yesterday, only RONALD went shopping.

In (10a), Ronald went instead of Susan (he would not normally come along), whereas in (10b), one understands that he normally goes with Susan. In

¹Gyuris, unfortunately only published in Hungarian

²My main reason for taking this up again was reading part of an earlier manuscript of Beaver and Clark (2008). The position of this paper is close to the final version but different in not attributing exclusivity to the semantics of *only*, but to the exhaustive interpretation of the host forced by *only*. The proposed "semantics" of mirativity and the treatment of *only if* are new elements. I would claim that the treatment provided here makes it easier to see the relation with the other mirative particles and to deal with the grammaticalisation of *only*.

both cases, Ronald goes alone. If *only* just meant exhaustivity, the contrast cannot be explained. We arrive at the different interpretations by constructing the expectation that is violated in (10b) : Ronald always goes shopping with Susan. In (12a) it is not necessary to construct an expectation that a larger group than just Ronald goes shopping. In fact, it is difficult to get a reading where "Ronald" contrasts with "Ronald and Susan", presumably because *only* is required for expressing that reading.

I want to defend the following four theses in this paper.

1. the semantic contribution of *only* is only low quantity mirativity: less than expected.
2. other aspects—in particular exhaustivity—are an effect of "focus": the host has to be interpreted as the exhaustive answer to its topic question.
3. *only* forces the host to have that interpretation.
4. except for (2) and (3) an *only*-sentence means the conjunction of *only* and its host.

(4) would be the ideal for particle semantics and seems viable for most particles with negation particles and floating quantifiers the exception. The host means whatever it means, the particle adds something.

(1) denies the received view: *only* does not mean "to the exclusion of others". That *only*-sentences entail exhaustivity is the effect of disambiguation: the interpretation as the exhaustive answer to the question corresponding to its topic (2) is a possible meaning of the host, forced by the presence of *only* (3). *Only* itself has a different task, denying an expectation.

Section 2 develops the meaning of *only*, section 3 discusses weak presupposition as an analysis of expectation, section 5 applies these ideas to the logic of *only if* and the conclusion contains a brief discussion of "association with focus" and the other mirative particles.

2 The Meaning of "Only"

The first point to be made has to do with quantity mirativity. If *only* occurs in a host, it can only express quantity mirativity if the host specifies a quantity. This forces an interpretation on the host that turns it into an exhaustive answer to a quantity question. It is clear what the question is: it is obtained by leaving out the focused element from the host and replacing it by a suitable wh-element. Schematically the host is then $H(C)$ with C the focused element. The question is then $?xH(x)$ and its exhaustive answer is C .

The second point to be made is that surprise at a low quantity presupposes the expectation of a higher quantity: somebody must expect the exhaustive answer to $?xH(x)$ to be "C together with other persons or things".

This can be provisionally notated as $exp(H(C + O))$. An *only*-sentence then confirms the expectation that C belongs to the answer and denies that O is part of it. *Only* therefore presupposes $exp(H(C + O))$. It asserts that anything

below O lacks the property H : $\forall x \subseteq O \neg H(x)$.

Let's apply this to the Umbach example (11):

(11) Yesterday, only Ronald went shopping.

The presupposed expectation is that, last Saturday, others O would have gone shopping with Ronald. Given the setting, O must resolve to the singleton $\{s\}$ consisting just of Ronald's wife Susan. This gives the representation (12) (I will write the presupposition before ":" and the assertion after it.).

(12) $exp(S(r + s)) : \neg S(s)$

The utterance implicates that Ronald is the single person from the Miller family who went shopping yesterday—that part of the expectation is not denied. It is properly denied that Susan went shopping with Ronald. The denial involves a correction of the expectation: Susan was expected to go, but didn't.

If the utterance is denied as in (13) the nature of the expectation changes. The information that the utterance illustrates how the Miller family habits changed makes it impossible to assume that Susan and Ronald had a habit of shopping together on Saturdays. It seems that a sociological fact of couples normally doing the shopping together on Saturdays will now have to underpin the expectation.

(13) Last Saturday not only Ronald did the shopping.

$exp(S(r + s)) : \neg\neg S(s)$

The result of the negation is that the expectation is implicated to be true: the Miller couple did the shopping together last Saturday, since this is the evoked and uncorrected expectation. There is another expectation involved here: the expectation that Ronald would be shopping alone, presumably based on an opposite habit. This expectation is evoked by the negation: without that expectation, there is no reason for denying that Susan did not go.

While this is an approximation and explains the intuitions about who it is that accompanies Ronald in (13), it is too weak. Both the positive and the negative example seem to entail that Ronald went shopping, whether by himself or in company and not just to implicate it. Also the analysis fails to exclude a situation where a relevant other person, different from the expected Susan went along shopping with Ronald, e.g. his mother in law. And this is intuitively ruled out in the positive case.

The problem is that we only dealt with *only*, treating the host sentence merely as a convenient source for semantic material to slot into the semantics of *only*. This semantics can be given abstractly as: *only* $\alpha(c)$ presupposes an x that is expected to have the property α together with the disjoint c^3 and denies α of x .

³Here and elsewhere, $x + y$ is used for a sum of disjoint entities. This is not a restriction: if x and y are not disjoint, one can take $y \setminus x$ instead of y .

$$(14) \quad x, \text{exp}(\alpha(c+x)) : \neg\alpha(x)$$

What does the host sentence contribute? The use of *only* does not make sense on a host $\alpha(c)$ unless $\alpha(c)$ is interpreted as determining the "quantity" c as the exhaustive answer to the question "wh- among the C has the property α ?". If $\alpha(c)$ merely gave a non-exhaustive answer to that question without a further claim that that is the full answer, no quantity mirativity could sensibly attach to it. If c is merely one of the true answers to the question, c could not be less than expected, since the other answers are unknown and maybe add up to the expected quantity. An exhaustive answer can be seen as a non-exhaustive answer together with the statement that other answers, disjoint from c or exceeding c are false. This can be written as follows.

$$(15) \quad : \alpha(c), \forall x(x \not\subseteq c \rightarrow \neg\alpha(x))$$

The two semantic representations can be combined into (16).

$$(16) \quad x, \text{exp}(\alpha(c+x)) : \neg\alpha(x), \alpha(c), \forall x(x \not\subseteq c \rightarrow \neg\alpha(x))$$

Now a simplification is possible. $\neg(\alpha(x))$ is a consequence of $\forall x(x \not\subseteq c \rightarrow \neg\alpha(x))$ and so it can be dropped.

But also the status of $\alpha(c)$ changes, since it is part of the expectation. This leads to another simplification which however needs a closer look at expectation.

The operator "expected" is only correct for the positive Umbach example, where the expectation based on our take of the habits of the Millers is a full-fledged member of the common ground. But already in the negative example the expectation is much weaker. Do we really expect that couples do the shopping together on Saturday? This is just a tendency and far too weak to put any money on Susan and Ronald going together especially when they have a habit of not doing so. The expectation is much better analysed as weak presupposition, needed anyway in the analysis of many particles. In the examples, weakly presupposed shopping by Ronald and Susan could pick up both a habit of the Millers of shopping together or the general habit of couples shopping together on Saturday. These problems are better addressed by weak presupposition: the common ground should contain a reason for thinking that p is true given, where p is the expectation. There may be reasons for thinking both that p and that $\neg p$, and there may be a reason for thinking that p even if there is more reason for thinking that $\neg p$. Weak presupposition in addition seems to be independently required for the meanings of other particles, for negation, for questions and for intonation.

3 Weak Presupposition

Weak presupposition has been around for a long time, especially in areas like negation and questions. What makes it weak is that the weakly presupposed

material does not need to hold in the common ground or in the common ground extended with local information such as normal, strong presupposition requires. The weak presupposition may be in the common ground as such, but it can equally well be in the common ground as a suggestion, as an opinion of somebody or merely as a plausible inference. The claim is that negation weakly presupposes the opposite opinion in the context (which then gets denied) and that *wh*-questions weakly presuppose the truth of the corresponding existential statement (which is enough for making it plausible that it can be answered). Some maintain that the difference between positive and negative polar questions can be explained by weak presupposition: positive polar questions weakly presuppose the negative answer and negative polar questions weakly presuppose the positive answer. Weak presupposition is not important for the formal semantics of questions and negation, but from the perspective of discourse and dialogue coherence, it is hard to overrate it. The weak presupposition that finds a proper antecedent for a question or negation will give vital clues about why the question arose and how it should be interpreted and related to the speaker's intentions or to what exactly it is that the interlocutor is denying.

In the area of particle semantics, weak presupposition seems to be even more unavoidable. A correction marker requires a statement to be corrected, an adversative marker, something that is "adverse" to it, an additive marker something that it is in addition too, a confirmation marker something that it confirms. And quite systematically one finds that the corrected statement does not need to be entailed in the local context of the marker (one can correct Harry's beliefs just as well as the interlocutor's or one's own), that the adverse information is not directly given but must be inferred by plausible inference, that additive antecedents are embedded under operators like *perhaps* or even *Bill dreamt that* and that confirmation markers can confirm information that is given under a similarly wide range of operators .

Not that anything goes. Negative contexts (like negation and doubt) do not provide good antecedents (but their negations may be picked up). Also proper contexts for antecedents can be blocked by denying the truth of the antecedent or casting doubt on it.

- (17) Mary doubted that she would pass. ??She did indeed./She failed indeed.
 John thinks that Mary is in Spain. Bill is in Spain too.
 John thinks that Mary is in Spain, which cannot be true/which I doubt ??Bill is in Spain too.

The conditions on what is a good antecedent are also not uniform for the different markers.

- (18) Bill dreamt that Mary was in Spain. She is indeed.
 Bill dreamt that Mary was in Spain. ?Susan is there too.
 Bill dreamt that Mary was in Spain in June. ??She is there again.

One can try to develop a single operator that generalises over all possible operators (see Zeevat (2004) for an attempt) but in the light of the different acceptability of the examples in (18) this seems misguided and at best only partly correct. There is also a default when different resolutions are possible: one needs to go for the "most accessible" one and this default is obscured by having a single operator that lumps all the possibilities together.

Another problem with such an account can be illustrated by the following pair.

- (19) Hij komt WEL.
Hij komt wel.

The first example needs a proper antecedent with an overt negation and is a correction of the opinion expressed by the negated sentence (it can be the correction of the belief of a person different from speaker or hearer):

- (20) Piet denkt dat Jan niet komt.
Hij komt WEL.

The second example means something like, Don't worry. In my opinion, he will come. This is similar to *WEL* in presupposing the negation of the host, but this time it can be an unexpressed thought which is attributed to the audience. The way in which the antecedent is given seems to be decisive for the ambiguity between a proper correction, based on what the speaker believes to know and the much weaker disagreement with the negation expressed in the other case.

It would seem that the different degree of toleration for weak antecedents can be much better understood as the outcome of a natural historical process⁴ in which proper lexical presupposition triggers lose descriptive meaning in favour of a linking and distinguishing function, acquire more toleration for inaccessible antecedents and lose their ability to force accommodation.

The property of non-accommodation (also here a question of degree) is the third property that sets weak presupposition apart from strong presupposition. If weak presupposition cannot be resolved to the discourse context, as a last resort they can be assumed to hold under an operator like *it might be thought that*. This would deal with the cases of negations and questions where no antecedents seem to be around or with the "extremely grammaticalised" uses of particles like *wel*.

The three properties of weak presupposition are connected. Little lexical content means that the presupposition will not end up in a predication that must be true in the local context of the trigger, which allows it to have antecedents that do not need to exist or be the case in that local context. Linking and distinguishing to discourse elements that one first has to accommodate does not

⁴A much more systematic argument for differentiation by a historical process can be developed here by comparing the distribution of classes of particles. For example, *only*, *but*, *just*, *merely* are all exclusive particles and *exclusively* is an adverb with exclusive meaning, but they vary substantially in their distribution. As another example, the Russian particles *i*, *tozhe* and *takzhe* are all three additive but have completely different syntactic and semantic properties.

seem useful, quite apart from the fact that signaling that the discourse context has certain components when it does not, sits badly with the intuition that the discourse context has common ground status.

The notion of weak presupposition can be implemented by a variant of the proposal of van der Sandt (1992) for strong presupposition. The weak presupposition is provisionally represented at the site of the trigger. The accessible contexts are then searched in the normal order, with two additional options. The first is a recursive search in the content of their subordinate contexts which are introduced by positive attitude and modal operators. The second option is inference: does the context offer a reason r for thinking that p . This comes down to searching with a search term $[r, \textit{normally if } r, p]$ and requires an axiomatisation of "normally if". Instead of failing or normal accommodation when the antecedent cannot be found, the most tolerant class of weak triggers can just add the always uncontroversial: *it might be thought that p* to the outermost context, as a last resort.

The most tolerant class of weak triggers —to which *only* belongs— is constituted by questions, negations and confirmation and correction markers. Additive markers are more restricted in the range of operators under whose content can be searched and do not allow the last resort reading. Adversative markers seem similarly restricted. This is not say that these classes of particles are homogeneous. This paper is however not a place to engage in a proper study of the fine structure involved.

The application to *only* is to replace the notion of expectation by weak presupposition of the kind that can take antecedents from any kind of positive context and from inferential processes and as a last resort can add "it might be thought that p ". In this, it would be comparable to *wh*-questions, negation or to particles like *indeed*.

This makes the meaning of *only* into (21).

$$(21) \quad x, \textit{weak}(\alpha(c + x)) : \neg\alpha(x)$$

And the meaning of the combination of *only* and its host $\alpha(c)$ into (22).

$$(22) \quad x, \textit{weak}(\alpha(c + y)) : \alpha(c), \forall x(x \not\subseteq c \rightarrow \neg\alpha(x))$$

I.e. $\alpha(c)$ is both weakly presupposed and asserted. This is a strange status: as an assertion $\alpha(c)$ should be new, as a weak presupposition, it is given. Assertions that are not new are normally marked by confirmation markers such as *indeed*, unaccented *doch* and the like. It seems natural to claim *only* is a confirmation marker with respect to prejacent.

A technical proposal to deal with material that is both weakly presupposed and asserted is to make it both strongly and weakly presupposed. The weak presupposition forces a search for the material and if it turns out to be present in the accessibility path of the trigger, this is the antecedent for both the weak and the strong presupposition. If the search for weak antecedents however leads

to a weak antecedent, the accommodation attendant on strong presupposition will add the material to a context on the accessibility path of the trigger, nl. at the point of the operator on the weak antecedent.

This comes down to the statement that $\alpha(c)$ is either resolved to an accessible antecedent, or resolved to an inaccessible antecedent with a further accommodation in an accessible context. The further accommodation in case the resolution is to an inaccessible attitude or suggestion is a confirmation of that attitude or suggestion. In neither case, it can be new focal material of the only-sentence that can be in the scope of a negation.

The technical proposal is presumably the correct analysis of confirmation marking. (23) is correct in identifying the assertion with the weak presupposition, but it would correspond to an instruction to identify p in the context (including the non-accessible parts under a positive operator) followed by an update with p . But if p is found in the accessibility path of *indeed*, this would lead to a spurious update with p , i.e. garbage with the potential of generating confusion.

(23) *indeed*(p)
weak(p) : p

So the correct view is as in (24) which avoids spurious updates. The ideal for particle semantics is to see *indeed*(p) as the conjunction of the assertion that p and the fact that p is given. But this is self-defeating: proper assertions are supposed to assert new material. Marking p as a given presupposition solves the problem.

(24) *weak*(p), p :

The conclusion is that question whether the host in an *only*-sentence is a presupposition, an assertion or an implicature is a false trilemma. It cannot be a proper assertion since it is marked as given: it is however confirmed. It cannot be a proper presupposition since it can be tied to inaccessible material outside the common ground, it is however a weak presupposition. It cannot be an normal implicature since it cannot be cancelled. The status of a given presupposition seems the way out.

The proposal hardwires the impossibility of negation as in (25) taking scope over the statement "Ronald did the shopping": it is given and presupposed. But even if that statement is thought of as part of the assertion, the assertion would be improper, since it is a partial confirmation of the weakly presupposed statement that Ronald and others went shopping. The antecedent of the weak presupposition is not in the scope of the negation.

(25) It is not the case that only Ronald went shopping.
 Not only Ronald did the shopping.

The proposal makes the representation of *only*-sentences still simpler, as in (26).

(26) $\alpha(c), \text{weak}(x, \alpha(c+x)) : \forall x(x \not\subseteq c \rightarrow \neg\alpha(x))$

Notice that this version deals with the problems noted above. Ronald's shopping becomes entailed by any successful interpretation of the positive and negative case, Ronald's mother in law is excluded from accompanying him in the positive case and weak presupposition allows Susan's presence to be more unexpected than expected in the negated case.

One can continue to be unhappy about the negated case. In the Umbach example, the result of pure mirativity was that the expected Susan was indeed asserted to be the person who was with Ronald when he did the shopping. The combined version merely entails that Ronald went shopping with someone other than himself. This is perhaps right, with it being an implicature that it was Susan due to the setting: the sentence gives an explanation of a change in the Miller household and this points towards Susan.

Compare (27) on this point. Speaker A has noticed that John did not take the danish rolls at an occasion he was offered bagels and danish rolls. Speaker B knows better: he also eats chocolate croissants. B has not entailed that John eats danish rolls when he finishes the first part of his correction.

(27) A: John only eats bagels.
B. No, John does not only eat bagels. He also eats chocolate croissants.

It has been noticed in the literature (Horn (1969)) that one can fairly felicitously correct on the prejacent in the positive case, but that this becomes almost unacceptable in the negative case.

(28) Only Ronald did the shopping but I am not sure that he did indeed go.
(??) Not only Ronald did the shopping, but I am not sure that Ronald did indeed do the shopping.

The asymmetry can be connected to the analysis. Somebody who makes the positive statement exploits the weak presupposition and makes the exhaustive assertion of the host that goes with it. He can then correct himself on the point of Ronald really doing the shopping. This is quite comparable to saying (29), using the strategy of saying something stronger and then taking back some of it: nobody else went shopping and perhaps not even Ronald.

(29) Everybody came. Except John.

In the negative case, the weak presupposition is not denied but confirmed. So here the speaker would come out as both affirming and denying the weak presupposition and it would not be an instance of the strategy of overstating and taking back some of it employed in the last example. Moreover, it seems unfortunate to first focus on the others (taking Ronald for granted) and then coming back to Ronald and to express one's doubts.

Finally, the real challenge for those who want to maintain that the host is presupposed is to explain why it cannot be cancelled under negation, as is predicted to be possible under almost any view of presupposition. Presuppositions under negation can be easily cancelled as shown by examples like (30).

- (30) The king of France is not bald. There is no king of France.
 What your generalisation captures is exactly nothing.

But (31) is completely out.

- (31) ???Not only Ronald did the shopping. He never went near a shop.
 ???It is not the case that only Ronald did the shopping. He never went near a shop.

An explanation of this impossibility should show that local accommodation in the scope of the negation is not possible for the non-exhaustive version of "Ronald did the shopping". In the view of Van der Sandt, cancellation under negation is local accommodation under the negation. For "Ronald did the shopping" there are two possibilities. Either it resolves to the same antecedent as the weak presupposition "Ronald and others did the shopping". In that case, it cannot be locally accommodated under the negation. The other possibility is that "Ronald and others did the shopping" finds a weak antecedent in a context originating from an accessible context *C* of *only*. In that case, the proper accommodation site for "Ronald did the shopping" is *C*, again well outside the local context of the negation. In this perspective, the fact that the weak presupposition of *only* entails the prejacent is responsible for the absence of accommodation of the prejacent under negation.

4 Context-sensitivity of *only*

Low quantity mirativity is a label that hides considerable complexities. To be surprised at a low quantity one needs: a set of quantities for comparison, an ordering over them and an orientation. Before a quantity was a set in a set of sets ordered by inclusion and the orientation was from small to large.

But quantities can be objects, weights, chunks of matter, sizes, numbers, professions, propositions and other things, with an order and orientation derived from the topic question, the goal behind it and the elements themselves.

(32) is ambiguous⁵ as can be seen by the utterances it may correct.

- (33) Seven boys can lift this piano./20 boys can lift this piano.
 No, only 12 boys can lift the piano.

⁵Notice that this example is fine in English but translates badly into Dutch or German.

- (32) A. 20 boys can lift the piano.
 B. ?Slechts/alleen/maar 12 jongens kunnen de piano optillen.
 B. ? Nur 12 Jungen koennen das Klavier aufheben.

If one corrects on "seven boys", the question is "how many boys can lift this piano" and one denies that the answer "seven boys" is correct. The true answers form an interval $[n, \omega]$ of the natural numbers. The smaller cardinalities $1 \dots 11$ are denied by the exhaustive interpretation. When "20 boys" is corrected, the question must be different: if 7 or 12 boys will do, also 20 boys will do. The question in this setting is "what is the least number of boys that can lift the piano". The set of numbers that give a true answer is now just $\{n\}$ and the contribution of *only* is limited to the negation of the expectation that is normally—but not here—entailed by the exhaustive interpretation.

The following examples show that the ordering for the interpretation can derive from non-logical and non-mathematical factors.

(34) Only Bill is in Paris.

Assume Bill is there on a business trip, Bill is the best salesman in the company, but his boss the best negotiator and Bill is there for important negotiations. The issue addressed is whether there is a good negotiation team and only Bill is less good than could be expected. If one changes the setting to a sales visit and the issue to whether the company has sent the right team, the use of (34) will become inappropriate.

What seem to be going on here is some mapping from the possible answers to the quality of the team for the job they are supposed to do. Adding the boss to the negotiation team would make it better. Adding the boss to the sales team would not make much difference.

One way of thinking about cases like this would be as another question hiding behind the official question "who is in Paris?". Something like: "how good is our company team in Paris for the negotiations?" This is the question resolution mechanism discussed by Ginzburg (1995).

Something similar is going on in the following example. Suppose A has organised a voluntary question hour before the test for his course. He now reports (35).

(35) Only John showed up.

He may in fact be disappointed about the number of students who showed up without the fact that John was the exception having any special role in his expectations. He expected 5 students to show up. *John* is just a special way of answering the question with *one*.

Mechanisms of question resolution and domain restriction as part of question resolution have an important part to play. The structure of the set of possible answers to the question determines the meaning of exhaustivity (the denial of the answers not entailed by the host) and so influences the meaning of an *only*-sentence. In the mirative theory of *only* this part of the account of *only*-sentences is not related to *only* as such: it belongs to the explanation of scalar implicatures and other exhaustivity effects.

5 Only if

The assumption that the semantic function of *only* is to express low quantity mirativity on top of the semantics of the host runs into trouble with a famous use of *only* in logic: the *only if ... then*-connective normally claimed to mean to reverse of the connective *if then*.

- (36) if p then q: $p \rightarrow q$
only if p then q: $q \rightarrow p$

It is directly clear that this should be an exception to the view on *only* developed in this paper and to all other views that hold that the host is entailed, presupposed, implicated or otherwise true if the *only*-sentence is. The logical view makes things easy: $q \rightarrow p$ just does not entail $p \rightarrow q$, so the *only*-sentence can be true without the host being true.

One may perhaps think for a brief moment that this is an artefact of the logical tradition: one has been trained to understand it the logician's way. But this is not plausible, since there are similar ways of connecting material that have the same property and that play no role in logic.

- (37) John visits Mary on Sundays.
In Paris, John drinks wine.
When it rains, John takes an umbrella.

The most accessible interpretations of these sentences is as a soft universal quantification: this is what John does on a Sunday, this is what he takes for his drink in Paris (at his meals perhaps), this is what he does when it rains.

Compare these with the following cases.

- (38) John visits Mary only on Sundays.
Only in Paris, John drinks wine.
Only when it rains, John takes an umbrella.

Here clearly, the soft universal reading is not present. John may visit Mary only very rarely on a Sunday. It may have been a single time during many long visits to Paris that John took some wine and the occasions on which it rained and John took an umbrella may be few in comparison with the cases in which he went into the rain without one. So from a linguistic perspective, the problem of *only if* arises at other places and it cannot be an artefact of logic, in which sentences such as these are rarely discussed.

These other cases turn out to give the key to the solution to the problem with *only if*: it is possible to set up the context so that the universal quantification becomes an existential one, as in (39).

- (39) A. John never visits Mary on a Sunday.
 B. Well, he does visit Mary on Sundays. Only not very often.
- A. John never drinks wine in Paris.
 B. Well, he does drink wine in Paris. But he also has beer when he is there.
- A. John never takes an umbrella.
 B. Well, when it rains, John takes an umbrella. But not always.

And another way (40) of forcing these interpretations.

- (40) A. When does John visit Mary?
 B. He visits Mary on Sundays. Only not very often.
- A. When does John drink wine?
 B. He drinks wine in Paris. But he also has beer when he is there.
- A. When does John take an umbrella?
 B. When it rains, John takes an umbrella. But not always.

And this is precisely what is needed. The view on *only* in this paper was given as follows.

1. the semantic contribution of *only* is only low quantity mirativity: less than expected.
2. other aspects—in particular exhaustivity—are an effect of "focus": the host has to be interpreted as the exhaustive answer to its topic question.
3. *only* forces the host to have that interpretation.

According to (3), *only* forces an exhaustive interpretation on these examples as in (38) as an answer to a question as in (40).

The pattern is the same when one uses the corresponding *if . . . then*-sentences.

- (41) John visits Mary, if it is Sunday.
 John drinks wine, if he is Paris.
 If it rains, John takes an umbrella.

Applying this to a well-known example (42), it gives three things.

- (42) Only if you behave, you will get a cookie.

The first is an expectation that indifferent as well as proper behaviour will lead to a cookie. The expectation is quite likely founded in the behaviour of the addressee. The expectation is denied.

”if you behave” should be an exhaustive answer to the topic question, here: ”when will you get a cookie?”. It is not completely obvious what exhaustivity means in this context but this may be safely left for future research⁶.

But property (3) is really the important one. It forces an interpretation on *only if*-sentences where the host is an exhaustive answer to the question ”when does the consequent hold”. And this gives —as shown above— an existential reading: there are cases in which the condition and the consequent both hold.

Applied to our example, it is clear that it does not amount to a promise. But there is hope: some lines of proper conduct will lead to a cookie.

Normal *if...then* sentences are universal, just like the examples in (39) . They typically answer questions of the form (43).

- (43) What happens, if
What follows, if

And the causal and logical order are such that this assigns universal force. If the answer is based on causality or logic, it will invariably (or *ceteris paribus*) follow from the antecedent.

Unfortunately, in the case of (42) it does not suffice to add an earlier *never*-sentence or to make a *when*-question explicit to get the host to have this reading. B’s contribution cannot —or only with the greatest difficulty— be interpreted existentially, i.e. without given it the force of an a conditional promise.

- (44) A. When will I get a cookie?
B. If you behave, you will get a cookie.
A. So I will not get a cookie under any circumstance?
B. If you behave, you will get a cookie.

In fact, this prompted Saeboe (1986) to the conclusion that the host of *only if*-sentences must contain a hidden *can*. I prefer a different formulation of this insight: *can* must be inserted when *only* is removed since just removing *only* makes the existential reading non accessible. The *can* is not a hidden operator, but an (obligatory) marker of the (modal) existential interpretation of the conditional (a disambiguating device).

There are two kinds of *if . . . then*-sentences: one where the condition describes many (possible) events and one in which the condition describes a single possible event. The existential reading is different in both cases: with many events, the conditional states that some of these events are accompanied by the consequent, with the singular event that it may be accompanied by the consequent. For a condition of many events, the existential reading can be forced by inserting *sometimes* (an optional marker). *Only* also forces this reading. But there are quite a number of contexts (bare plural, bare singulars, unanchored past,

⁶The intuitive generalisation of the semantics given earlier on is not bad however: the possible lines of conduct which are not special cases of ”behave” do not have the property that a cookie will be awarded at the end of them. But this lacks logical sophistication.

omitted arguments etc.) in which an existential interpretation does not need to be overtly marked and it is unsurprising to find another cases of the same phenomenon, i.e. the case that the conditional is the answer to a *when*-question or the case that it denies a *never*-statement. The existential reading on conditionals in which the condition describes a single event can be forced by modals like *can* or by *only*. But the possibility interpretation cannot remain unmarked, since it is not the default: that is the statement that the consequent will happen or hold when the condition happens or holds. So what happens in a singular event conditional hosting *only* is that when *only* is removed, it reverts to the non-existential default interpretation.

The counterargument to the view of this paper based on *only if* turns out on a closer look to be more an argument in its favour. The disambiguation of the host by the presence of *only* is even more spectacular than in the case of *if . . . then*-sentences than in the case of simple sentences like "only Ronald did the shopping". This reading of "if"-sentences has been noticed before by Saeboe (1986) and Kratzer (1979). The latter discusses the case that the *if*-clause associates with an adverbial like *sometimes*, and this gives the same reading. The presence of an existential adverbial is however not necessary for the reading, as I hope to have shown.

6 Conclusion

The considerations above make it possible to avoid association with focus, even in the minimal sense of Rooth (1992). *Only* expresses that an exhaustive answer to a *wh*-question falls short of the expectation. The meaning can be characterised in terms of that question and its answer. Since the host normally has the intonation of such an answer, stress is on the element that corresponds with the *wh*-phrase.

The easiest way to deal with the combination of the semantics of *only* and its host is by means of anaphora. *Only* would presuppose the semantics of the host as an exhaustive answer to a *wh*-question and would pick up both the question and its answer as antecedents, with the additional requirement that if the occurrence is non-elliptical, the antecedents belong to the same clause as *only*. The weak presupposition and its partial negation are derived by structure sharing.

The other mirative particles become easier with the machinery of this paper.

- (45) Bill is still in Paris.
 $weak(Lebp, e < t) : Pbt$

Bill is weakly presupposed to have left Paris before the time of utterance and asserted to be there nonetheless. His being in Paris at a moment of time before his supposed leaving is a lexical presupposition of "leave" and not indicated.

Bill is weakly presupposed to have left Paris before the time of utterance and is asserted to be there nonetheless. His being in Paris at a moment of time before

his supposed leaving is a lexical presupposition of *leave* and not indicated. The fact that this presupposition is not weak can be accounted for by making it a part of the lexical specification of *still*, as proposed by Loebner (1989), Krifka (2000) a.o.

Another option is the hypothesis that lexical presuppositions of weak presuppositions are projected as normal presuppositions of the trigger of the weak presupposition. Within the system of developing presuppositions in auxiliary DRSs at the site of the trigger that is adopted in van der Sandt (1992), the development of a lexical presupposition of the weak presupposition generated by an occurrence of *still* takes place at the same position as the development of the weak presupposition. Resolution or accommodation of the lexical presupposition of *leave* would then have to take place before the treatment of the weak trigger and be confined to the accessibility path of *still*. In (45) this places the information that Bill is in Paris at the time of his weakly presupposed departure in the main DRS.

Notice that in the second option, the ideal of analysing (42) as the conjunction of mirativity and the semantics of the host can be maintained. This is a good reason for adopting this second option. In (46), the first formula, would reduce to the second.

$$(46) \quad \text{weak}(at(t'e), Pbt' : Leb p, e < t) : Pbt \\ at(t'e), Pbt', \text{weak}(Leb p, e < t) : Pbt$$

$$(47) \quad \text{Bill is already in Paris.} \\ \text{weak}(e : Ab p, e > t) : Pbt$$

Bill is weakly presupposed to arrive in Paris after the moment of speaking, but is there nonetheless. His not being in Paris before the supposed arrival is a lexical presupposition of *arrive* and not indicated here. The same remark as above applies to this lexical presupposition.

$$(48) \quad \text{Even Bill is in Paris.} \\ \text{weak}(Px, \neg Pb) : Pb$$

Bill is in Paris while being weakly presupposed to be not there unlike others. It remains to be seen to what extent the usual analysis in terms of scales can indeed be avoided in this way.

These three are simpler than *only*, since all that the particle does is add a weak presupposition to the statement, a weak presupposition that conflicts with the statement itself. They therefore conform to the ideal particle semantics where the particle makes an independent addition to the semantics of the host. In the case of "only" that does not apply, because the statement itself is not a correction of the weak presupposition it conflicts with (the statement follows from the weak presupposition), though its exhaustive interpretation is. The fact that "only" disambiguates its host makes its semantics seem to fall short of the ideal particle semantics where the particle just adds another conjunct.

The conclusions of this paper can be listed as follows.

1. Mirativity is best analysed as denying a weak presupposition. This makes the mirative particles very similar to adversative particles, different only in the fact that where adversative particles weakly presuppose the falsity of the host, the mirative particles in addition presuppose a different value for some entity determined by the host: a moment of time, an object or a quantity.
2. *Only* expresses low quantity mirativity and thereby imposes an exhaustive interpretation on its host with respect to the definition of the relevant quantity.
3. In the case of *only if*, the quantity question becomes *under which circumstances p?*. This imposes an existential reading on the conditional and makes *only* a marker of the existential reading of the conditional.
4. The status of the host (the prejacent) in *only*-sentences is that of a “given presupposition”. It is always weakly presupposed, but not necessarily part of the common ground yet. If it is not, it will be accommodated at a position determined by the weak presupposition. This status comes about by the mirative weak presupposition that makes the host weakly presupposed and makes it impossible to interpret the host as giving new information. In this respect, it is like a confirmation. Given presuppositions are not presuppositions, weak presuppositions, implicatures or assertions and one of the two sources of confusion about *only* is that researchers have tried to choose between assertion, presupposition and implicature.
5. The other source of confusion is the very close relationship between the denial of part of the weak presupposition and exhaustivity. Exhaustivity entails the partial denial of the weak presupposition, but it is stronger, even though, when the weak presupposition is sufficiently vague (e.g. John and others) its denial can amount to exhaustivity. It would seem that the possible implicature that the weak presupposition is true in the case of negative *only*-sentences is important and cannot be reduced to exhaustivity.
6. Presuppositions of weak presuppositions are normal presuppositions. This would appear to be a consequence of the assumptions made in Gazdar (1978) and van der Sandt (1992) and solves the technical problem of capturing the presupposition of *still p* and *already p* (*p* was the case until its weakly presupposed end, *p* was false until its weakly presupposed start) in a natural way. The lexical specification of *still* and *already* becomes much simpler.

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