

Association with focus or association with presupposition?

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Abstract

According to alternative semantics, focus has the weak semantics of introducing alternatives. But in some association with focus constructions, assuming a semantics of existential presupposition would give us an independently motivated account of the semantic focus effect. I review two such cases. I then give arguments against an existential-presupposition semantics for focus based on flexibility in the licensing of focus.

Architecture for focus interpretation

I will assume the architecture for focus interpretation discussed in Rooth (1992). In the example below, $[_{NP}\text{John}]$ is marked with a focus feature, and this focus is interpreted at the S level by a focus interpretation operator \sim .

- (1) $[_S [_S \text{John}_F \text{ solved problem three}]] \sim C$

The focus interpretation operator adds a constraint on a free variable C . In this case, the constraint is that C is a set of propositions of the form ‘ x solved problem three’ containing ‘John solved problem three’ and some other proposition. We think of this as the specific set of alternatives picked up from a specific discourse context or constructed pragmatically in a specific situation.

In this paper, I want to reconsider the question whether the semantics of focus is as weak as is maintained in my earlier work. In particular, would it be possible to say that the focus expresses an existential presupposition, in combination with a characterization of alternatives? That is, does (1) presuppose that someone solved problem three?

Given a set of alternatives as described above, an existential presupposition amounts simply to the requirement that some alternative be true. So, there is no technical barrier to adding such a presupposition to the semantics of \sim . If we made this change, we could keep the architecture of alternative semantics intact. In particular, there would be no need to revise our notion of the logical form of focus.

The question, then, is whether we should make this revision in the semantics of \sim .

Cleft comparison

My main technique will be to compare intonational focus to clefts, the assumption being that clefts do introduced an existential presupposition. Below, we do have a presupposition that someone solved problem three, in combination with the assertion that John solved problem three.

- (2) a. It's John who solved problem three.
- b. presupposition: someone solved problem three.
- c. assertion: John solved problem three (+ exhaustiveness)

In addition to the existential presupposition, clefts have an assertion or implicature of exhaustive listing. For the bulk of the paper, I will ignore this part of the meaning of the cleft.

My strategy now is to investigate whether focus might express an existential presupposition by substituting clefts into a number of association with focus constructions.

Dretske counterfactual environment

Dretske's marriage scenario, slightly modified from Dretske (1972), runs as follows. Clyde has been carrying on an intermittent affair with Bertha, an archeologist who is out of the country most of the time, something he is quite satisfied with. But since he finds out that he will inherit a lot of money if he weds before the age of 30, he arranges to marry her, with the view of carrying on their relations as before. Marrying someone else would have involved too much of a commitment.

In these circumstances, the examples in (3) seem true, while those in (4) seem false.

- (3) a. If he hadn't [married]_F Bertha, he wouldn't have qualified for the inheritance.
- b. If he hadn't married [Bertha]_F, he would have been making too much of a commitment.
- (4) a. If he hadn't [married]_F Bertha, he would have been making too much of a commitment.
- b. If he hadn't married [Bertha]_F, he wouldn't have qualified for the inheritance.

Because of syntactic restrictions, a cleft can be smoothly substituted only in the NP focus examples. In these cases, it is clear that the semantic effect of focusing is preserved, and even strengthened.

- (5) a. If it hadn't been marriage that he undertook with Bertha, he wouldn't have qualified for the inheritance.
- b. If it hadn't been Bertha that he married, he would have been making too much of a commitment.
- (6) a. If it hadn't been marriage that he undertook with Bertha, he would have been making too much of a commitment.
- b. If it hadn't been Bertha that he married, he wouldn't have qualified for the inheritance.

Converting the focus on *married* to a cleft requires a clumsy circumlocution. But it seems clear to me that the truth-conditional effect of focus is preserved.

The second point I want to make about the Dretske counterfactual environment is that counterfactuals have been independently discussed as interacting with presupposition. The following example is a variant of one from Heim (1992). Heim assumes that, mediated by indexing, *too* in second sentence of (7a) introduces the presupposition that Mary is in the elevator. This is asserted by the first sentence, and so the presupposition is satisfied. In the terminology of the compositional semantics of presupposition, it is filtered.

- (7) a. Mary₁ is in the elevator. John_F is in the elevator too₁.
b. Filtered presupposition: Mary is in the elevator.

Now let's look at the interaction with counterfactuals. Without information about the context, the first sentence below strikes one as vague—it isn't clear whether we are to consider counterfactual situations where John is in the elevator together with Mary, or alone, or both kinds of situations.

- (8) Mary is in the elevator alone. If John were in the elevator, the weight limit would be violated.
(9) Mary₁ is in the elevator alone. If John were in the elevator too₁, the weight limit would be violated.

Adding the presuppositional operator *too* in the if-clause resolves some of the vagueness: we consider counterfactual situations in which both John and Mary are in the elevator. Consequently, (9) might be true by virtue of Mary's and John's combined weight exceeding the weight limit.

So, presupposition interacts somehow with the semantics of counterfactuals. Extending the terminology used for focus, I will call this a phenomenon of association with presupposition. Given the existence of this phenomenon, we might view the semantic effect of the cleft in (5) and (6) as a matter of association with presupposition. And provided that this works out in detail, we might investigate whether what we earlier thought of as an association with focus effect in Dretske's examples might not more fundamentally be a matter of association with presupposition.

Adverbs of quantification

The association with focus effect for adverbs of quantification is illustrated below. Mary taking Tom to the movies is a counterexample to the first generalization but not the second; Sue taking John to the movies is a counterexample to the second generalization but not the first.

- (10)a. Mary always takes [John]_F to the movies.
b. [Mary]_F always takes John to the movies.

As with the counterfactuals, this truth conditional interaction works just as well with clefts.

- (11)a. It's always John that Mary always takes to the movies.
b. It's always Mary that takes John to the movies.

And as with counterfactuals, there is an independent literature on association of adverbs of quantification with presupposition; see van der Sandt (1989) and Berman (1991) for discussion and references. The following example of the effect was suggested to me by Hans Kamp. Judging by the examples below, *Hans answer the phone* presupposes the phone ringing, since the putative presupposition projects through the negation and the conditional.

- (12)a. Hans didn't answer the phone.
- b. If Hans answered the phone, then he knows about the picnic.

Below, the presupposition of *answer* interacts with *always*, contributing a restriction understood as conjoined with the when clause. The understood meaning is that when he's in his office and the phone rings, Hans always answers it.

- (13) When he's in his office, Hans always answers the phone.

Analyses of this effect put the presupposition into the restriction of the adverb by either a semantic or a discourse-syntactic mechanism; for details, see the above references. Given an account along these lines, one would want to consider the possibility of viewing the effect of the cleft in (11), and perhaps also the association with focus in (10), as fundamentally a matter of association with presupposition.

Analyses of the Dretske counterfactual environment

I will sketch an alternative-semantics analysis of the Dretske counterfactual environment suggested by the discussion of counterfactuals in von Fintel (1994). The idea is that the operator *would* has a position for an implicit restriction, and that the union of the alternative set constrained by focus interpretation can fill this position. This allows us to assume the following logical form:

- (14) $[_s \text{ would}_{\cup C} [\text{if} [\text{not} [[\text{Clyde marry} [\text{Bertha}]_F] \sim C]]] [\text{not} [\text{he qualify for the inheritance}]]]$

C is the set of propositions of the form 'Clyde marry y '; $\cup C$ is then 'Clyde marry someone'. The above logical form is then equivalent to the following:

- (15) If he had married someone and not married Bertha, he wouldn't have qualified for the inheritance.

This sentence is certainly false in the Dretske scenario—Clyde would have qualified no matter who he married. So, this gives us an account of the association with focus effect.

As for association with presupposition, consider a semantic rule for counterfactuals from Heim 1992, a rule stated in file change semantics:

- (16)a. $c + \text{if } \phi \text{ would } \psi = \{w \in c \mid \text{Sim}_w(\text{rev}_\phi(c) + \phi) + \psi = \text{same}\}$
- b. $\text{rev}_\phi(c)$, the revision of c for ϕ , is $\cup \{X \subseteq W \mid c \subseteq X \wedge X + \phi \text{ is defined}\}$
- c. $\text{Sim}_w(c)$: the worlds in c maximally similar to w .
- d. $d + \psi = \text{same} : d + \psi = d$

The rule is a presupposition-sensitive version of Lewis' semantics for counterfactuals. Given a context c , the proposition $\text{rev}_\phi(c)$ is the weakest proposition containing c and

satisfying the presupposition of ϕ . Consider how this works out in the example discussed earlier.

- (17)a. John is in the elevator too₁
- b. definedness condition (presupposition): Mary is in the elevator
- c. assertion: John is in the elevator

The presupposition of the restriction [John were in the elevator too₁] in (9) is that Mary is in the elevator. If c entails that Mary is in the elevator, $rev_\phi(c)$ is the proposition ‘Mary is in the elevator’. Hence $rev_\phi(c) + \phi$ consists of worlds where both Mary and John are in the elevator. Since counterfactual worlds considered in the definition above are drawn from $rev_\phi(c)$, this accounts for the observed effect of the presuppositional operator.

For the cleft example, I assume the following logical form.

- (18) would [if [not [it is Bertha that Clyde married]]] [not [he qualify for the inheritance]]

ϕ is the if clause, with *not* operating on the cleft. Since negation is a presupposition hole, the presupposition of ϕ is that Clyde married someone. Assuming that c entails that Clyde married, as it does in the Dretske scenario, $rev_\phi(c)$ is the proposition that Clyde married someone. So $rev_\phi(c) + \phi$ consists of worlds where Clyde marries someone, but not Bertha. This predicts equivalence with (15). Assuming that there is no presupposition in the if-clause of (15), $rev_\phi(c)$ is the set of worlds W . Then $rev_\phi(c) + \phi$ is:

$$W + \text{Clyde marry someone} + \text{not}[\text{Clyde marry Bertha}]$$

This again is the set of worlds where Clyde marries someone other than Bertha.

Analyses of adverbs of quantification

Von Stechow gives the following logical form for adverbs of quantification, rendering the analysis of Rooth (1985) in notation of Rooth (1992):

- (19) $\text{always}_{uc} [{}_s [{}_s \text{Mary takes John}_F \text{ to the movies}] \sim C]$

What this amounts to depends on our semantics for the adverb. For Rooth (1985), it would mean that every time of Mary taking someone to the movies is a time of Mary taking John to the movies. For von Stechow, it means that every minimal situation of Mary taking someone to the movies is part of a minimal situation of Mary taking John to the movies. This extends a semantics for adverbs of quantification due to Berman (1987); see also Heim (1990).

As mentioned above, according to association-with-presupposition analyses, a presupposition of the scope of an adverb of quantification is written into the restriction, either semantically or representationally. Though I will not go into a precise formulation, I believe a presupposition-sensitive rule could be stated in terms of Heim’s *rev* operator. The result would be to fill in the information in the box below by a semantic mechanism. Van der Sandt proposes doing the same at the level of discourse representation.

- (20) $\text{always}(\text{he's in his office} \wedge \boxed{\text{the phone rings}}, \text{Hans answers the phone})$

Especially in the more intricate Berman/von Stechow semantics, there is some work to do in formulating the semantic rule and checking that it gives the desired results. But assuming

this is as straightforward as I assume it is, we are left with a working account of association of adverbs of quantification with presupposition.

What can we say in general about these analyses of association with focus and association with presupposition? None of them is particularly impressive, since they all have a stipulatory character. In the association with focus accounts, we would like to have a better understanding of what makes the union operator available. And Heim's rule for counterfactuals in effect extracts and manipulates a presupposition. This strikes me as running counter to the general context-change program for the compositional semantics of presupposition.

My question in this paper, though, is different. We certainly need a general account of association with presupposition, and we can regard the semantic rules discussed above as approximations to this. Given a general account, we automatically have an account of association with clefts, since this is just a special case. The possibility then presents itself of analyzing what we thought of as association with focus effects in the Dretske environment and with adverbs of counterfactuals as a manifestation of association with presupposition. From the viewpoint of the general theory of focus, this might be quite attractive. As I just said, the requirement of writing in a union operator gives existing association with focus analyses of these constructions an unpleasantly stipulative character.

So, looking just at counterfactuals and adverbs of quantification, it seems that giving focus a semantics of existential presupposition might be attractive. Is there any reason not to make this move?

Discourse focus effects

In this section, I will argue that a systematic semantics of existential presupposition is too strong in certain cases where focus has a discourse-contrastive function.

Here is the argument I would like to make. If focus introduced an existential presupposition 'someone borrowed A's badminton racket' in (21,) it would project through the conditional, resulting in incompatibility with the first sentence "I don't know" in B's response.

- (21)a. A: Did someone borrow my badminton racket?
 b. B: I don't know. If [John]_F borrowed it, you can forget about getting it back in one piece.

My assumed logical form is the following, where focus is interpreted at the level of the if-clause.

- (22) If [_S [_S [John]_F borrowed it] \sim C], you can forget about getting it back in one piece.

This argument would be a good one, were it not for the fact that a cleft can be substituted into the discourse (21):

- (23) B: I don't know. If it's [John]_F who borrowed it₂, you can forget about getting it back in one piece.

The discourse is still fluent, and so, whatever our account of what is going on here, we can't use (21) as an argument against including existential presupposition in the semantics of focus.

I conjecture that the possibility for a cleft in (23) reduces to the possibility for a rhetorical structure more complex than simple information update. In the next example, I try to control for this by making logical relations explicit in syntax. In my department, a football pool is held each week, where people bet on the outcomes of games. It is set up so that at most one person can win; if nobody wins, the prize money is carried over to the next week.

- (24)a. A: Did anyone win the football pool this week?
- b. B: Probably not, because it's unlikely that [Mary]_F won it, and she's the only person who ever wins.
- c. B: Probably not, because it's unlikely that it's [Mary]_F won it, and she's the only person who ever wins.

B knew that Mary had made a silly bet, and since in the past nobody else ever won, B finds it unlikely that there was a winner. In the response (24b), I assume that the focus is interpreted at the level of [_S [Mary]_F won it], evoking alternatives of the form '*x* won it'. In the cleft variant (24c), we get a presupposition that someone one at the same level. Assuming that this presupposition projects through *because it's unlikely*, we predict a conflict with the first part of what B said. In this case, I do find the cleft variant incoherent and contradictory. In contrast, the focus variant is fine. This is an argument against systematically giving focus a semantics of existential presupposition.

Focusing adverbs

A case against giving focus the semantics of the cleft can be based on certain focusing adverbs where a cleft substitution is not possible:

- (25)a. Mary also took John_F to the movies.
 - b. Mary even took John_F to the movies.
- (26)a. #It's also John_F that Mary took to the movies.
 - b. #It's even John_F that Mary took to the movies.

The cleft versions are completely incoherent. Fairly transparently, though, the problem here has to do with an incompatibility between the exhaustive meaning of the cleft and the presupposition introduced by the focusing adverb. The focusing adverbs in (26) introduce a presupposition that someone other than John was taken to the movies by Mary. If so, "John" is not an exhaustive list of people taken to the movies by Mary.

Exhaustiveness can be removed by inserting *in part* or *at least in part*:

- (27)a. It was on Monday that they worked on the proposal.
- b. It was in part on Monday that they worked on the proposal.
- c. It was at least in part on Monday that they worked on the proposal.

With this modification, a cleft is indeed compatible with *also*:

- (28) A: When did they work on the proposal?
- B: On Sunday.
- C: It was also in part on Monday that they worked on it.

I assume that in this example *also* has maximal scope, so that it's argument has an existential presupposition introduced by the cleft.

I conclude that *even* and *also*, though they are incompatible with simple clefts, are not incompatible with existential presupposition. And since they in fact express presuppositions entailing an existential presupposition, it would be quite surprising if they were.

Flexibility of focus licensing

Above, I mentioned that in some cases intuitions about association-with-cleft examples were firmer than intuitions about corresponding association-with-focus examples. This can be turned into an argument against an existential presupposition expressed by focus. In the counterfactual environment, focus can interact with the counterfactual, but it can also be licensed in other ways:

- (29) If he hadn't married married Bertha_F, he would not have qualified, because he would not have married anyone.

Here the focus apparently is licensed by the following "he marry anyone". I would assume a logical form along the following lines:

- (30) If not [[he marry married Bertha_F] \sim C], he would not have qualified, because [would [not [he marry anyone] (= $\cup C$)]]

The stuff at the end impressionistically represents the licensing of the alternative set by the existential 'he marry anyone', though this is not based on a general theory. This licensing replaces writing in $\cup C$ as an argument of the first *would*, as in the representations discussed earlier. An LF with, in addition, $\cup C$ written in as an argument of *would* is presumably grammatically possible, but would be contradictory.

Flexibility in the licensing of focus is predicted by the theory of Rooth (1992), where it is treated as an instance of non-determinism in antecedence for anaphors. The point now is that presuppositions expressed by clefts are not comparably flexible. The following example is contradictory:

- (31) If it hadn't been Bertha that he married married, he would not have qualified, because he would not have married anyone.

This is predicted by the theory of association with presupposition I reviewed, because the existential presupposition is encoded in the semantics of the if clause, and the presupposition is inevitably captured by the semantic rule for the counterfactual.

These examples are a compelling argument against a systematic existential-presupposition semantics for focus. If there was an existential presupposition at the level of \sim in (30), it would project through the negation and interact with the counterfactual, resulting in contradiction.

Conclusion

We are left with conflicting considerations. An existential presupposition would help us explain the compositional semantics of certain association with focus constructions,

though classical association with focus accounts are available as well. But existential presupposition can not systematically be the semantics of focus.

Or so it would appear. David Beaver (p.c.) suggests a flexible interpretation strategy which has the effect of optionally trivializing an existential presupposition. In the example [John_F liked it], my discussion has assumed alternatives of the form ‘ x liked it’, where x is an individual. But suppose that the notion of alternative proposition is flexible, optionally including propositions such as ‘everyone liked it’ and ‘nobody liked it’. Beaver points out that this would follow from optionally treating the focused phrase as a generalized quantifier rather than as an individual. If ‘nobody liked it’ is included as an alternative, the presupposition that some alternative is true is trivialized.

This move would allow us to reduce association with focus in e.g. the Dretske environment to association with presupposition, while maintaining a theory of focus compatible with the flexibility of focus licensing. The an association-with-focus reading would follow from selecting the more restrictive notion of alternative, resulting in a non-trivial existential presupposition. We need to investigate, of course, the impact of such a revision in the notion of alternative on everything we do with alternative sets.

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