

A note on presupposition accommodation

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We provide evidence that presupposition accommodation occurs even when there is no threat of presupposition failure. If the evidence is correct, it argues against the view that accommodation is a form of context repair, supporting the view that it is computed by a formal system that has no access to contextual information.

1 Background: Context Satisfaction and Context Repair

Several theories of presupposition projection (eg. Karttunen (1974), Stalnaker (1974), Heim (1983), Beaver (2001), Schlenker (2007, 2008, 2009)) are committed to the following assertability condition:

Context Satisfaction If sentence ϕ presupposes proposition p , then ϕ may be used in context c only if c entails p .

We will label theories committed to this condition ‘common ground theories of presupposition,’ for they all derive predictions about projection by making reference to the context of use, c , and employ certain felicity conditions between LFs and c from which the principle of Context Satisfaction is derived.¹ Competing the-

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¹Some other theories of projection, namely, various versions of trivalent systems, also incorporate the Context Satisfaction condition, but do so not through their projection component (which makes no reference to the context), but as an additional conversational principle (see eg. Stalnaker (1978), Soames (1989), Beaver and Kraemer (2001), von Stechow (2008), Fox (2008) for discussion). It is a choice point for such systems what the right assertability condition should be. As such, we do not intend to include them as instances of ‘common ground theories.’

ories of projection (eg. Gazdar (1979), Karttunen and Peters (1979), van der Sandt (1992), Geurts (1999)) compute presuppositions without making reference to the context, c . Their associated assertability conditions also avoid imposing any constraints on the prior context that would entail Context Satisfaction. Given their encapsulation from the context, we will label such theories ‘modular theories of presupposition.’ These two approaches make different predictions concerning the relation between the context and the presuppositions of sentences: for common ground theories, presuppositions should never be informative in the context of use (given Context Satisfaction), whereas for modular theories, presuppositions are just additional pieces of information that are unrelated to the prior context, and so nothing prevents them from sometimes being informative.²

A common criticism of the common ground approach is the observation that communication seems to succeed just fine even when the condition of Context Satisfaction is not met, i.e. the observation that presuppositions are often informative.³ The response (since Karttunen (1974) and Stalnaker (1974)) has been to postulate a pragmatic repair strategy, so-called presupposition accommodation (Lewis, 1979), that can sometimes rescue the conversation from the predicted infelicity. If ϕ is used in a context c that does not entail its presupposition p , the hearer may (at their discretion) enrich the context to a new one, c' , that does entail p . In talking about this process, we will say that some proposition q has been accommodated, but the reader should keep in mind that the theory is only concerned with the resulting context c' , and not with the accommodation of any particular proposition. By appealing to this strategy of context repair, then, common ground theories can be made consistent with the fact that presuppositions can sometimes be informative.

It was pointed out as early as Heim (1982) that this repair process need not be minimal, in that proposition $q \neq p$ can sometimes be accommodated in response to ϕ_p , so long as $c \cap q$ entails p .⁴ For example, while (1a) below presupposes (as a matter of projection) that if Lyle flies to Toronto he has a sister, what is accommodated out of the blue when we hear (1a) is that Lyle has a sister, whether or not he flies to Toronto. Similarly, (1b) presupposes that Bernie believes Lyle has been cheating on his wife (see, eg., Heim, 1992), but what we spontaneously accommodate in response is not only this projected presupposition, but also the

²For Karttunen and Peters (1979) presuppositions should not be controversial, but nothing in their system prevents them from being (contextually) informative.

³See von Stechow (2008) for extensive discussion and pointers to the relevant literature.

⁴More pedantically, accommodation is often not minimal in that the new context resulting from accommodation, c' , is often a strict subset of $c \cap p$.

proposition that Lyle has in fact been cheating on his wife.

- (1) a. If Lyle flies to Toronto, his sister will pick him up from the airport
- b. Bernie hopes Lyle has stopped cheating on his wife

In this note, we will not be concerned with why or how accommodation turns out to not be minimal in this sense.⁵ We will simply take for granted that when accommodation does occur, it can be non-minimal.

We would like to focus our attention instead on the assumption that this inference is a form of context repair made in response to the threat of presupposition failure. Common ground theories predict that if the context satisfies the presupposition of the asserted sentence, the relevant assertability condition is met, which should deactivate the process responsible for accommodation. Modular theories are not predicted to be sensitive to the context in this way. Support for the common ground approach's context-sensitivity comes from texts like the following, modified from Heim (1992, 2006):

- (2) a. If Lyle flies to Toronto, he has a sister. Moreover, if he flies to Toronto, his sister will pick him up from the airport
- b. Bernie believes that Lyle has been cheating on his wife, and (since he likes him) he hopes that he'll stop

We do not take away from (2a) that Lyle has a sister, and we do not take away from (2b) that Lyle has in fact been cheating on his wife. This is entirely as expected from the perspective of common ground theories. Since the first sentence in each text serves to satisfy the presupposition of the second, there is no threat of presupposition failure, hence no accommodation. Thus, there is nothing to license the inferences that were attested in out of the blue contexts like in (1a,b). Modular theories, on the other hand, provide no obvious handle on the contrast between (1) and (2).

2 Ignorance Inferences Block Accommodation

We believe there is a confound in examples like (2a,b). To see what we have in mind, consider the oddness of the following texts:

⁵There is a growing literature on this so-called proviso problem (Geurts, 1996, 1999). See Beaver (2001, 2006), Heim (2006), Pérez Carballo (2007, 2008), van Rooij (2007), Singh (2007, 2009), von Stechow (2008).

- (3) a. #Lyle might have a sister. His sister is from Montréal.
 b. #Lyle has two or more hamsters. His two hamsters are big.

A plausible account of the oddness of these texts is that the first sentence in each introduces ignorance inferences which would be in conflict with accommodation of the presupposition of the second sentence. For example, (3a) implies that the speaker is ignorant about whether or not Lyle has a sister. This prevents later accommodation of Lyle having a sister, for the result would lead to an inconsistent context. Similar remarks apply (*mutatis mutandis*) to (3b).

Let us suppose, then, that there is a principle that prevents accommodation of p if doing so would contradict an earlier ignorance inference that the speaker is ignorant about whether p .⁶

- (4) Ignorance Inferences Block Accommodation: Accommodation of p is disallowed if doing so would contradict an earlier ignorance inference that the speaker is ignorant about p .

Returning to (2a,b), this principle provides an alternative account for the lack of inference to Lyle having a sister in (2a), and to Lyle actually having cheated on his wife in (2b). Under certain theories of implicature (eg. Gazdar, 1979), the first sentences in each of (2a, b) give rise to ignorance inferences about these propositions,⁷ hence blocking any later attempt to accommodate them. Some evidence in support of Gazdar's predicted ignorance inferences here comes from the fact that the following texts, like the ones in (3a,b), are also odd:

- (5) a. #If Lyle flies to Toronto, he has a sister. His sister is from Montréal.
 b. #Bernie believes Lyle has been cheating on his wife. Lyle's mistress is from Montréal.

If the oddness of (5) (like the oddness of (3)) is due to the principle in (4), then the fact that we don't find (non-minimal) accommodation in (2) is no longer an argument in favor of the common ground theory's prediction that there is no accommodation-like inference when there is no threat of presupposition failure. This is because (4) prevents accommodation of these enriched propositions. For

⁶See Gazdar (1979), Geurts (1999), Heim (2006) for more discussion, and possible variations and generalizations of this statement.

⁷That is, they give rise to the inference that the speaker is ignorant about whether Lyle has a sister, in (2a), and that the speaker is ignorant about whether Lyle has exactly two hamsters, in (2b). There are additional ignorance inferences and scalar implicatures here, which are irrelevant to the current discussion.

example, since the first sentence of (2a), *If Lyle flies to Toronto he has a sister*, gives rise to an ignorance inference about Lyle having a sister, (4) prevents accommodation of this proposition in response to the second sentence of (2a), *If Lyle flies to Toronto his sister will pick him up from the airport*.⁸

To test the common ground theory's prediction, then, what we should like is to be able to set up a context that does indeed satisfy the presuppositions of (1a) and (1b), without generating ignorance inferences that would prevent non-minimal accommodation as we suggest may have happened in (2a) and (2b). The following texts seem to satisfy these desiderata (in both cases, assume that Lyle works for Company X):⁹

- (6) a. Every man who works for Company X and flies to Toronto has a sister. **Moreover**, (since his family is rumoured to be quite close, I expect that) **if Lyle flies to Toronto, his sister will pick him up from the airport**.
- b. Bernie believes that every man who works for Company X has a mistress, and he knows for sure that half of them have been cheating for quite some time. (Since he likes Lyle quite a lot), **he hopes he'll stop cheating on his wife**.

What we have done is changed the way the context satisfies the presupposition of the boldfaced sentences. By using a universal quantifier in the context setting sentences, we are making a general statement about the men who work for Company X, rather than a statement about Lyle. This move allows us to avoid generating any ignorance inferences about Lyle that might conflict with the proposition that Lyle has a sister (in (6a)), and with the proposition that Lyle has in fact been cheating on his wife (in (6b)).¹⁰ The principle in (4) is therefore no longer relevant. If the common ground theory were correct, we would expect there to be no basis

⁸Context Satisfaction can still be met without contradicting the earlier ignorance inference, say, by accommodating the projected presupposition itself.

⁹In the texts that follow, we will write the target sentences in boldface, to distinguish them from the context setting sentences. We place optional material in brackets, in case it helps with naturalness.

¹⁰See Gazdar (1979), Fox (2007a,b), Fox and Hackl (2006), Katzir (2007) for theoretical proposals that would derive this result. What is important for our purposes is that the context setting sentences do not generate ignorance inferences like we saw in (5). Note, for example, that unlike (5a), the following sentence is felicitous (again, assume that Lyle works for Company X): *Every man who works for Company X and flies to Toronto has a sister. Lyle's sister is from Montréal*. This means that the principle in (4) is not operative here.

for inferring from (6a) that Lyle has a sister, and from (6b) that Lyle has in fact been cheating on his wife.¹¹ However, these inferences seem to us to follow quite naturally. To the extent that these inferences are specific to the grammatical system responsible for presuppositions, we think these judgments provide an argument against the common ground theory, and support the modular approach instead.

In the next section we consider two potential lines of response to our observation in (6), and discuss our reasons for thinking that they do not allow the common ground theory to remain consistent with (6). Instead, our alternative hypothesis, viz. that the inferences result from a modular, presupposition-specific system, will be argued to better fit the data.

3 Context Satisfaction and Informative Presuppositions

Can presuppositions be informative even when the principle of context satisfaction is met? Given (6), we believe they can be, and that this fact presents a challenge to common ground theories. In this section, we consider two potential ways of making the common ground theory consistent with the observation in (6). We will argue that neither response succeeds.

3.1 Pragmatic Inferences?

It has sometimes been suggested (eg. Beaver (2001), Stalnaker (2002), von Stechow (2008), Heim (2006), Pérez Carballo (2007)) that accommodation inferences are the result of the pragmatics of common ground update. To account for the data in (6), such proposals would have to remove any connection between accommodation and the principle of context satisfaction. Assuming this could be done, we are nevertheless inclined to think that our alternative proposal, which places the responsibility for these inferences entirely within the grammatical system responsible for presupposition, provides a better characterization of the paradigm.

First, note that the inferences seem to remain under further embeddings, a property generally taken to hold of presuppositions, but not other kinds of inferences (we have embedded the boldfaced conditional in (6a) under *doubt*, and the boldfaced attitude ascription in (6b) under *think*, and a higher question operator):

¹¹Recall from Section 1 that the common ground theory predicts that accommodation is activated only when Context Satisfaction is not met.

- (7) a. Every man who works for Company X and flies to Toronto has a sister. (Since he's rumoured to come from a messed up family,) **I doubt that if Lyle flies to Toronto, his sister will pick him up from the airport.**
- b. Bernie believes that every man who works for Company X has a mistress, and he knows for sure that half of them have been cheating for quite some time. Even though he's still jealous that Lyle got the promotion over him, he probably doesn't wish anyone's family to fall apart. **Do you think he hopes that Lyle will stop cheating on his wife?**

Second, in addition to survival under embedding, the inferences seem to satisfy other diagnostics that have been proposed as uniquely characterizing presuppositional information. For example, the accommodated propositions are entirely felicitous in the *Hey Wait a Minute!* test for presuppositions (eg. Shanon (1976), von Stechow (2004)):¹²

- (8) a. A: Every man who works for Company X and flies to Toronto has a sister. Moreover, (since his family is rumoured to be quite close, I expect that) if Lyle flies to Toronto, his sister will pick him up from the airport.
B: Hey wait a minute! I didn't know Lyle has a sister!
- b. A: Bernie believes that every man who works for Company X has a mistress, and he knows for sure that half of them have been cheating for quite some time. (Since he likes Lyle quite a lot), he hopes he'll stop cheating on his wife.
B: Hey wait a minute! I didn't know Lyle's been cheating on his wife!

Finally, upon closer inspection, it seems that the general logic of common ground update actually does not seem to license such kinds of inferential leaps at all. To see what we have in mind, consider (6b)-(8b) again. Here we have a situation where Bernie's beliefs are correct about half of the individuals in Company X, but unresolved for the other half. Nothing seems to bias the placement of Lyle in one or the other half, yet the inference of placing Lyle in one of the halves (in this

¹²Under this diagnostic, *Hey wait a minute! I didn't know that p!* should be felicitous only if *p* is presuppositional information. Since the felicity of the *Hey Wait a Minute!* response is what is critical here, we put that in boldface.

case, that half where his beliefs are correct) is made nonetheless. Recall that our claim was that the responsibility for this inference lies within the formal theory of presupposition. If this is correct, we expect that if we set up a similar scenario, but one that does not involve presuppositions at all, inferences that discriminate between two sets will not be found. This expectation seems to be correct, *even if we set up a context that would bias the agent in favor of one of the two sets*:

- (9) Company X is having a party tonight at the other end of town, so everyone has to drive there. Everyone but Lyle has a car, so he'll need a ride. Half of the car-owners drive a BMW, while the other half drive a Ford. The CEO of Company X, Bernie, recently bought a new car, and is driving past Lyle's place anyways, so I hope he will be able to pick him up.

Here again, we have two sets (in this case of car-owners), and we learn that Bernie belongs to the union of this set, along with a built-in-bias (given what we know about CEOs) for placing Bernie into one of these sets, namely, the BMW-owning set. As opposed to (6b)-(8b), however, an inferential leap placing Bernie into one of the piles seems totally unwarranted, despite the obvious bias. If this is true, then appealing to plausibility reasoning will probably not suffice to account for the inferences made in (6b)-(8b). We also expect, then, that the HWAMT will not be applicable in this case:

- (10) A: Asserts the text in (9)
B: # **Hey wait a minute! I didn't know Bernie drives a BMW!**

We also expect that it should be inappropriate to continue the discourse by presupposing that Bernie has a BMW. Again, this contrasts with the inference to Lyle's having a mistress in (6b-8b), where there seems to be no problem presupposing this information in later discourse:

- (11) a. A: Asserts the text in (9)
B: # **Have you seen his BMW?**
b. A: Asserts the text in (6b)
B: **Have you seen his mistress?**

Contrasts such as these make sense under the idea that the inferences in (6)-(8) are presupposition-specific, but are left mysterious under the alternative idea that they arise from pragmatic reasoning concerning the best way to update the common ground.

3.2 *De Re* Readings?

Danny Fox (p.c.) has pointed out to us a potential analysis of the facts not in terms of a modular accommodation system, but rather through scoping mechanisms that generate *de re* readings. For example, if the definite description in the consequent of *If Lyle flies to Toronto his sister will pick him up from the airport* takes wide scope, it is entirely unsurprising that we should accommodate that Lyle has a sister.

While this seems to us an interesting approach, much work would need to be done to substantiate it. First, one would have to provide for *de re* construals for non-DP presupposition triggers like *stop*.¹³ Second, assuming this could be made to work in a general setting, *de re* construals alone would not suffice to account for the observation (eg. Heim (1992), Geurts (1999)) that in response to sentences like *Bernie hopes Lyle has stopped cheating on his wife*, we accommodate two propositions: That Bernie believes Lyle has been cheating on his wife, and that Lyle has in fact been cheating on his wife. While providing for the second of these, a *de re* construal would not provide for the first. A third difficulty is that under standard assumptions about the LFs of conditionals and scoping mechanisms, there seem to be certain accommodations that cannot be generated by *de re* construals. For example, consider cases like the following:¹⁴

- (12) If John is a scuba diver and wants to impress his girlfriend, he'll bring his wetsuit

As pointed out by Geurts (1996), while this sentence presupposes (as a matter of projection) that if John is a scuba diver and wants to impress his girlfriend he has a wetsuit, a possible accommodation (possibly the preferred one) is that if John is a scuba diver he has a wetsuit.

Given these *prima facie* difficulties, we think that an appeal to *de re* construals does not suffice to account for data like (6) within a framework like the common ground theory.

4 Concluding Remark

The principle of Context Satisfaction seems to force one to view informative presuppositions as arising from a process of context repair. If the data in (6)-(8) and

¹³See Heim (1992) for the beginnings of such an attempt, along with reservations.

¹⁴See Geurts (1996) and Singh (2007) for more discussion.

(11b) are correct, they teach us that this view is incorrect, since no repair is needed in these cases. Instead, these facts argue for a view of informative presuppositions under which they are computed without regard to contextual information. This argues against the common ground view, and in favor of a modular approach.

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