

## Are Presuppositions Accommodated Globally by Default?

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### 2. Background of the topic:

Presupposition projection is one of the key areas of research for theoretical semantics and pragmatics. The phenomenon can be illustrated by considering the implications of (1):

1. The Martian geologists did not realise that elephants are mammals

The intuition is that (1) implies that elephants are mammals while this is not an entailment of the sentence. The intuition is often explained in terms of a process whereby the sentence embedded under negation (*[The Martian geologists realised that elephants are mammals]*) presupposes the implication that elephants are mammals and where presuppositions are not affected by negation. Thus the complex, negated sentence acquires the presupposition of the embedded sentence and implies that elephants are mammals. When sentences felicitously presuppose information that is not already actually taken for granted in the context, it is said to be ‘accommodated’.

Generally, when sentences that intuitively contain presuppositional expressions (like ‘realise’) are embedded in complex sentences, the presuppositions of the resulting sentences seem more or less to systematically depend on the properties of the embedding constructions. Exactly how and why these dependencies arise is the problem of presupposition projection and there are currently two popular kinds of approach to this problem: one ‘dynamic’ semantic and one pragmatic. Dynamic semantic approaches explain projection phenomena by an elaboration of the rules of semantic composition (Heim 1983, van der Sandt 1992) while pragmatic approaches would explain any projection of presuppositions by an application of the same principles of conversation that account for implicatures (see Stalnaker 1974, Schlenker 2008).

One challenge for any theory of presupposition projection arises from the fact that implications like that discussed for (1) can disappear. Consider for example that the complex sentence in (2) does not strike us as contradictory in spite of the fact that the presupposition of the first clause is contradicted by the second:

2. The Martian geologists did not realise that elephants are reptiles because elephants are not reptiles!

The notion in the literature is that the ‘normal’ implication of the first clause of (2) has disappeared or been ‘cancelled’. Dynamic approaches account for the reading of (2) by allowing presuppositions to be satisfied or bound locally at levels below that of the root clause. In this case, it should allow for the presupposition to be satisfied inside the scope of negation. On the pragmatic account there is simply no pragmatic implication.

There is an interesting question for either approach whether the theory should predict that there is normally a preference for global accommodation in this kind of case. In the literature, the tendency

has been to account for this preference in terms of the rules that explain projection phenomena (see Gazdar 1979). However, it is conceivable to adopt a dynamic semantic theory which just allows one to derive an interpretation with the presupposition satisfied at any level and to say no more. In that case, the question of where our preferences for global accommodation come from would fall into the domain of parsing or processing. Alternatively, one could set out one's semantic rules so that they derive the preferred reading first, and only apply other rules leading to local satisfaction where context requires that. Similarly with a pragmatic approach, one could adopt a conservative strategy and argue that presupposition projection only occurs where warranted by the conversational context, and explain the intuition that there is a preferred reading in terms of parsing or processing strategies; or one could follow the lead set by Levinson (2000) and propose that global projection is the default in the sense that the inference is generated irrespective of context and only cancelled where necessary. While both kinds of strategy are open to both kinds of theory, dynamic semantic accounts tend to be set out to predict the preferred readings, while the null hypothesis for any pragmatic account would be to not build defaultness into the theory but to rely on processing considerations to explain any apparent preferences.

Recently, Chemla & Bott (2010) use a paradigm adapted from Bott & Noveck (2004) to explore the processing implications of the two competing positions, the dynamic theory of Heim (1983) and the pragmatic theory of Schlenker (2008). They use embedded presupposition triggers with false presuppositions (as in (3)) and looked at the time taken to respond 'True' and 'False':

### 3. The Martian geologists did not realise that elephants are reptiles

C&B argue that the dynamic theory predicts faster global accommodation and the pragmatic view predicts faster local accommodation. They found faster False than True responses to (3). Thus they argue that the global-first theory is vindicated and the pragmatic theory disconfirmed.

While we think that C&B's studies have yielded interesting results, we challenge a key assumption that led to their predictions. This is that there is a 'default local accommodation' in the case of the pragmatic view. This is motivated by the fact that, according to the pragmatic theory, global satisfaction is based on a pragmatic inference while local satisfaction requires no pragmatic inference. The key assumption is then made that pragmatic implications are necessarily temporally derived after information is derived on the basis of semantic rules. But this latter assumption is definitely in dispute. While some studies have suggested this might be the case (Huang & Snedeker 2009) many others suggest the opposite (Sedivy 2003, Grodner et al 2010, Breheny et al under review). As discussed in Breheny (forthcoming) these latter results suggest that on-line processing draws on information derivable via semantic rules and pragmatic principles *at the same time*. So, a slower RT for 'True' responders does not necessarily disconfirm a pragmatic approach. Moreover, we think that there is a plausible processing explanation for the results in C&B without any need to assume a default preference for global accommodation: if you give participants out-of-the-blue items then they will use anything in that stimulus to generate a likely context. Breheny et al (2006) show that this assumption is vindicated for implicatures (in their Expt 2). More recently Tian, Breheny & Ferguson (forthcoming) show this for the use of negation in out-of-the-blue experimental items. Based on Tian et al, the pragmatic view would be that in the absence of any other context, participants would probabilistically infer a context (common ground) for these items in which the question at issue (the so-called QUD) would be whether the geologists realised that elephants are reptiles, and thus that it is most likely that the presupposition of the QUD is being taken for granted. Hence, participants would be more likely to accommodate globally for an item like (1). Participants who respond 'True' might have done so for secondary reasons (like a 'principle of charity' – see Katsos and Bishop under review) and this might have led to slower response times.

We think a better way to test the global-first theory is to use a method like in Breheny et al (2006) where we have contexts biasing the presence or absence of the global accommodation. In this kind of study, participants read texts segment by segment (indicated by slashes, '/' below) and reading times for segments are recorded. See (4) for a possible item where the target sentence is, 'The bird could not have stopped flying [adverb]' . The presupposition trigger is 'stop' and the presupposition is, *the bird started flying* (= *q*):

4. A: Has the bird finished flying? (presupposes *q*)

B: /The bird never got off the ground/ (implies *not q*); /so/ it could not have/ stopped flying/ anytime/.

B': /The bird got off the ground just now/ (implies *q*); /so/ it could not have/ stopped flying/ yet/.

For this example, the initial context raises a question which is answered by the critical segment in both conditions. The baseline (B') has the context segment imply *q* in the same way that the experimental item (B) implies *not q*. So the relevant context for deciding about how presuppositions might be satisfied are equally salient. The critical segments are '/stopped flying/' and '/anytime/' or '/yet/'. Note that the second critical segment is only consistent with the appropriate 'scope' of presupposition. The 'default global' approach predicts longer response time in the (B) condition since in that condition the default global accommodation has to be suppressed. The processing account would predict that response time on the critical segments should be comparable, since there is no context accommodation to do and the context is unequivocal as to how to interpret what follows the connective, 'so'.

**Abbreviated References:** Bott, L., & Noveck, I.A. (2004). *Journal of Memory and Language*, 51, 437–457. Breheny (forthcoming) In W. Bublitz and N. Norrick (Eds) *Handbook of Pragmatics: Volume 1 Foundations of Pragmatics*. Breheny, R., Katsos, N., & Williams, J. (2006) *Cognition*, 100,434–463. Chemla, E. & L. Bott (under review) Processing presuppositions: dynamic semantics vs. pragmatic enrichment. Grodner, D.J., Klein, N.M., Carbary, K.M., & Tanenhaus, M.K. (in press). *Cognition*. Heim, I. (1983) In M. Barlow, D. Flickinger & M. Westcoat (eds.), *Second Annual West Coast Conference on Formal Linguistics*, Stanford University, 114–126. Huang, Y.T., & Snedeker, J. (2009). *Cognitive Psychology*, 58, 376–415. Katsos, N. & Bishop, D.V.M. (under review). Pragmatic Tolerance. Schlenker, P. (2008) *Theoretical Linguistics*, 34, 157–212. Sedivy, J. (2003). *Journal of Psycholinguistic Research*, 32, 3-23. Stalnaker, R. (1974) In M. Munitz & P. Unger (eds.), *Semantics and Philosophy*, New York University Press, 197–214. Tian, Y., R. Breheny & H. Ferguson (forthcoming) *Quarterly Journal of Experimental Psychology*. van der Sandt, R.A. 1992. *Journal of Semantics* 9: 333-377.