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# When satisfaction is not enough\*

## Comments on Schlenker's '*Be articulate*. A pragmatic theory of presupposition projection'

ROB VAN DER SANDT

### 1. Prelude

Philippe Schlenker has written a provocative and intriguing paper, firmly taking sides with E-type proponents in their attack on dynamic semantics. After stating that an E-type approach to donkey-anaphora is essentially correct, he boldly claims that the fortune of dynamic semantics now largely rests on the second motivation for dynamic semantics, the analysis of presupposition. After a general criticism pertaining to the 'explanatory adequacy' of Heim's account he returns to a line of theorizing that was prevalent in the seventies. The name of this revival is Transparency Theory, an account which aims to capture the Karttunen/Heim predictions (and is for this reason taken to be 'descriptively adequate'), does so in a static fashion and is thus argued to supersede the current dynamic accounts (both the Heim and the DRT-based versions) in being 'explanatory adequate'.

### 2. The unsatisfied analyst

Schlenker's theory correctly mimics Karttunen's (1974) and Heim's (1983) account (the satisfaction theory for short) in predicting that (1a) through (1c) presuppose that France has a king.

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- (1) a. The king of France is bald.  
 b. The king of France is not bald.  
 c. If the king of France is bald, he wears a wig.

He also correctly predicts that none of (2a) through (2d) presupposes that France has a king.

- (2) a. France has a king and the king of France is bald.  
 b. It is not true that France has a king and the king of France is bald.  
 c. If France has a king, the king of France is bald.<sup>1</sup>

Furthermore, he manages to do so without making any stipulations with respect to the heritage properties of the logical connectives.

The major virtue of the satisfaction theory is its elegance and simplicity. However, as is well known from the literature, it is beset by a host of empirical problems. In unmodified form its predictions are too strong.<sup>2</sup>

- (3) a. It is not the case that the king of France is bald: France is a republic.  
 b. Either the king of France or the president of France opened the exhibition.  
 c. It is possible that France has no king but it is also possible that the king of France is in exile.  
 d. If I realize later that I have not told the truth, I will confess it to everyone.

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<sup>1</sup> The predictions are actually slightly stronger. If the antecedent of a conditional entails a presupposition of the consequent clause (or the first conjunct of a conjunction a presupposition of the second) the presupposition of the full sentence trivializes to a tautology. Heim (1983) explicitly defends this and takes the fact that Gazdar predicts preservation of the presupposition as a decisive counterexample. I disagree. Consider

- (i) If John has grandchildren, his children will be happy.  
 (ii) They always wanted to have offspring.

The first sentence has a presupposing reading. Note that the pronoun in (ii) picks up the referent for the children that makes after processing the first sentence is accommodated in the main context. I add that (i) also has a non-presupposing reading. A theory of presupposition should thus allow both interpretation possibilities.

<sup>2</sup> The reader may consult Gazdar's discussion (1979) for a thorough overview.

The basic rules wrongly predict substantial presuppositions for each of (3a) through (3d).

In other cases the predictions are too weak.

- (4) a. If baldness is hereditary, the king of France is bald.
- b. If baldness is hereditary and the king of France is bald, he wears a wig.
- c. Either baldness is not hereditary or the king of France wears a wig.
- d. It is possible that baldness is hereditary and that the king of France is bald.

The prediction is that none of (4a) through (4c) presupposes that France has a king but instead that they have the conditionalized (5) as their presupposition.<sup>3</sup>

- (5) If baldness is hereditary, there is a king of France.

When we consider multiple embeddings the situation tends to get worse at each further embedding. Thus (6a) is predicted to presuppose (6b).

- (6) a. If baldness is not hereditary, then Pfizer will develop a cure and the king of France will sell his wig.
- b. If baldness is not hereditary, then if Pfizer will develop a cure, there is a king of France.

The problem is quite general, has become known as the proviso problem and is extensively discussed in Geurts (1999).

Satisfaction theorists have answers to both problems. With respect to the examples under (3) they invoke a mechanism of local (or more general non-global) accommodation. Since their theory relies on (a succession of) intermediate contexts this is a viable option.<sup>4</sup> For Schlenker's theory which does not allow for such things as intermediate contexts, it is not.

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<sup>3</sup> Note that we may continue each of (4a) through (4d) with e.g. 'He is a proud man'. The possibility of pronominal uptake is hard to explain unless the incoming context contains a referent for the king of France. Cf. footnote 1.

<sup>4</sup> I should remark that the way Heim implements this, forces us to tinker with the update rules which in fact comes down to postulating a semantic ambiguity in the connectives.

Schlenker claims however that the effects can be ‘emulated’ within the transparency framework:

[...] under duress (e.g. to avoid a very bad conversational outcome, such as the utterance of a contradiction or a triviality), one may assume that the speaker did not obey *Be articulate*.

In his bivalent system this has the effect of leaving us with the ‘unadorned bivalent meaning’ i.e. no presupposition whatsoever. I don’t see how this can count as an emulation *within* Transparency Theory. It strikes me more as the theory-external claim that in the face of threatening counter-examples the theory does not apply.<sup>5</sup>

As to the second problem I remark that for a satisfaction theorist conditional weakening is in a sense natural. Heim for example takes presuppositions to be the (minimal) conditions for the update to be defined. But, so Beaver (2001) adds, the presupposition computed need not be the material that is to be accommodated. In order to account for the intuitive inferences which arise from the material that is accommodated in the main context we may invoke a pragmatic strengthening mechanism to obtain the stronger predictions.<sup>6</sup> Such a strategy may be open to a proponent of a semantic account of presupposition. It is not a reasonable option for Schlenker’s pragmatic emulation. For, how should this work? Should we first derive the weak predictions by means of pragmatic principles and subsequently invoke pragmatics again to strengthen the predictions that have just been obtained by their very means? This would immediately raise a question as to the rationale of first deriving the weak predictions. But Schlenker has an alternative:

[...] we apply Transparency to a simple clause *without* taking into account the syntactic environment in which [it] occurs. [...] instead of computing the *minimum* accommodation to guarantee that *q* is (incrementally) transparent, you decide, somewhat lazily, to just consider *qq'* on his own, and to compute Transparency with respect to this constituent alone. (p. 30)

<sup>5</sup> But see footnote 8.

<sup>6</sup> The formulation may suggest that I subscribe to such a strategy. Nothing could be further from the truth. Limitations of space prevent me to go into this issue here, however.

That is, we ignore the linguistic context and apply the theory to the triggering configuration as if it occurred in isolation. This correctly predicts that all of (4a) through (4d) presuppose that France has a king.<sup>7</sup> But it would also predict that (2c) and each of (3a) through (3d) presuppose that there is a king of France. This holds generally. On this strategy complex sentences always inherit the presuppositions of their parts. Straight-forward application would bring us back to Langendoen & Savin's (1971) cumulative hypothesis which since the observations by Karttunen and others in the early 70s has not been defended by anyone.

This leaves Transparency Theory with two escape routes, each equally powerful.<sup>8</sup> Firstly, if triviality or contradiction threatens, the theory does not apply and no presupposition is predicted. If on the other hand intuition asks for a more substantial presupposition, laziness takes over; we simply ignore the surrounding context and thus predict that the triggered material makes it unmodified to the main context. Depending on the phenomena we thus may choose between total cancellation or total preservation. For a theory that presents itself primarily as superseding others in 'explanatory adequacy' this is somewhat disappointing.

### 3. Explanatory adequacy

Schlenker criticizes Heim's account for lack of 'explanatory adequacy'. Now Heim showed that given her definitions of the context change potential of the logical connectives Karttunen (1974) type inheritance conditions fall out as a side effect of the contextual update. This is right. Sure, Heim slightly overstated her point. As Soames pointed out, we may give alternative dynamic definitions for the connectives which agree with the incremental version on their static truth conditions but show different

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<sup>7</sup> Schlenker's discussion suggests that 'accommodating' the stronger presupposition is licensed because it is 'distinguished as a 'pre-condition' of the meaning' and therefore salient. I don't see how this is supposed to work. Is the proposition that there is a king of France more salient in (4a) than in (2c)? The reverse seems to be the case.

<sup>8</sup> One could imagine an optimality-theoretic elaboration which would tell us what principle applies when. Though this would make the theory predictive it would also raise the question what is the point of deriving the Karttunen/Heim predictions in the first place.

inheritance conditions. An example is  $\wedge^*$  which has the following definedness conditions:

(7)  $C[\varphi \wedge^* \psi]$  is defined if  $C[\psi]$  is defined and  $C[\psi][\varphi]$  is defined.

When evaluating this ‘conjunction’ we process from right to left, first checking whether the presuppositions of the second conjunct are satisfied and then whether the presupposition of the first conjunct updated with the second one are satisfied. However, the fact that it is possible to define such a connective can hardly count as an argument against a dynamic definition of the logical connectives. For, though  $\wedge^*$  is formally a possible connective, it certainly is not a reasonable one. The simple fact that time doesn’t flow backwards, utterances are processed in time and human cognition developed in a universe where this so happens, definitely discouraged this faculty to process information this way. This excludes  $\wedge^*$ , though not for logical reasons.<sup>9</sup>

Since I don’t want to get involved in a general philosophical discussion on the notion of explanatory adequacy of theories, I just state two reasonable prerequisites for a theory of presupposition. We would like to see an explication of the notion of presupposition which explains why presuppositions have a function in discourse that distinguishes them from mere entailments in a classical logic; and, secondly, an explication of the projection behaviour of the presuppositions. And the latter should be regulated by general principles of a logical or pragmatic nature. Unfortunately Schlenker’s account is not very enlightening on either of these issues. On Schlenker’s picture a presupposition is a part of bivalent meaning, ‘one that strives to be articulated as a separate conjunct’ (p. 3–4). This begs the question. For what semantic or pragmatic feature urges a part of bivalent meaning to struggle for articulation? Worse, this characterisation is – as we will see in a moment – circular in view of the fact that ‘Be articulate’ depends on the notion of presupposition. As to the second question,

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<sup>9</sup> The discussion reminds me of the infamous connective *tonk*. Is a system of natural deduction arbitrary, given that it is possible to define a connective that has the introduction rule of a disjunction and the elimination rule of the conjunction? Of course not. It only shows that we need reasonable constraints on the definition of connectives. And these are not internal to the system but given at a metalevel and motivated in terms of the role they play in the full theory.

the basic intuition is the Stalnakerian one: presuppositional information is – in a sense to be explained – information that is taken for granted and ideally already part of the incoming context at the moment the sentence is uttered. The problem then is to explain why the information induced (the presuppositional part in Schlenker’s terminology) has – in contradistinction to the non-presupposition remainder – the properties that account for this special behaviour.

Schlenker gives an answer to this question as well. His theory is ‘explanatorily adequate’ in the sense that the prediction of projection is fully regulated by pragmatic principles of a Gricean nature. But how Gricean are they? As stated ‘Be articulate’ does not constrain the projection of presuppositions but directly depends on the notion of presupposition (the information triggered). This is worrying since for Schlenker the presuppositional parts of a sentence meaning are simply bivalent meaning components that struggle for articulation. Moreover, the principle invites the speaker to explicitly state (‘articulate’) the presuppositional component, something which – in Schlenker’s bivalent account – seems quite superfluous in view of the fact that this information is already entailed by the inducing sentence. For why should a speaker articulate (1a) as (2a) when ‘Be articulate’ is controlled by ‘Be brief’ and the speaker could convey the same information by the shorter but truthconditionally equivalent non-articulated version (note that ‘Be articulate’ is defeasible and ‘Be brief’ is never violated).

I have problems with Schlenker’s version of ‘Be brief’ as well. It is clearly not a matter of length (which would exclude (2a) and render only its pronominal variant (8) felicitous).

(8) France has a king and he is bald.

And then, the difference in length is often not spectacular or simply non-existent. In the following pair the articulated and non-articulated variant are of equal length.

- (9) a. John knows that he is ill.  
b. John is ill and knows it.

What Schlenker calls ‘briefness’ turns out to be a limited version of what is (non)informativity or semantic redundancy on other accounts. It thus should not be derived from Grice’s Manner as Schlenker suggests but from Quantity 1 and 2.

#### 4. An historical excursus

Let me draw attention to a simple (but admittedly old fashioned) bivalent alternative that was developed in the early 80s.<sup>10</sup> This account agrees with the intuition of Stalnaker and other theorists that presuppositional expressions contain information that is ideally part of the incoming context. In the absence of further information a cooperative speaker will thus try to interpret such a sentence over contexts that already contain the information invoked. In the default case this will give us the presupposition as a contextual entailment; the presupposition will thus pass unharmed (we would nowadays call it ‘accommodation’). Thus

(10) Either baldness is not hereditary or John’s children are bald.

is predicted to presuppose that John has children. The reason is that (10) can be felicitously interpreted in a context which contains this information as the acceptability of (11) shows:

(11) John has children. And either baldness is not hereditary or his children are bald:

This theory does not try to articulate the induced information as separate conjunct to check whether this conjunct is superfluous and the non-articulated version preferable. Instead it tries to ‘articulate’ this information straightforwardly in the main context, thus mimicking the behaviour of a cooperative hearer. If the interpreter succeeds, the sentence is predicted to be presupposing. But clearly, not any sentence is interpretable in any context. It may be that a sentence is not felicitous in a context which already contains the presuppositional information. This happens if the interpretation of the inducing sentence in a context which already contains the presuppositional information violates Gricean requirements of informativity (let us call this – incremental – efficiency). For example, (12)

(12) Either John does not have any children or all his children are in hiding.

is not acceptable in a context which contains the information that John has children, as (13) shows:

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<sup>10</sup> Van der Sandt (1982/1988), not to be confused with his later anaphoric account.

- (13) John has children. . . . Either he has no children or his children are all in hiding.

The reason is that in the given context (12) is equivalent to its second disjunct:

- (14) John's children are in hiding.

which is certainly a shorter, less redundant and a more efficient way to convey the information that John's children are in hiding (note that this is a more general version of Schlenker's 'Be brief'). The original sentence thus cannot be interpreted in any context which contains the presuppositional material of the second disjunct and this information will consequently be interpreted locally. Put otherwise, the full sentence is not presupposing for the simple reason that the information cannot be accommodated. This is captured in the following simple definition:

- (15) A sentence  $\varphi$  presupposes a sentence  $\psi$  in a context  $c$  just in case
- (i) one of the component sentences of  $\varphi$  induces the presuppositional information that  $\psi$ ; and
  - (ii)  $\varphi$  is acceptable in  $c + \psi$ .<sup>11</sup>

It turns out that constraints of global and local informativity and consistency suffice as constraints on acceptability.<sup>12</sup>

The account just sketched has several vices which it shares with Schlenker's and all other pragmatic accounts. As in Gazdar (1979) it remains unclear what happens to presuppositions in case they don't survive (and why then should this information be invoked to begin with), it is unable to formally capture the notion of accommodation,<sup>13</sup> and it runs into binding problems in intensional contexts.

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<sup>11</sup> The original definition contained an extra (and awkward) clause intended to account for sentences with conflicting presuppositions. This clause turns to be superfluous since contradictory presuppositions are already handled by clause (ii). This was pointed out long ago by Henk Zeevat (p.c.).

<sup>12</sup> See for details Van der Sandt (1982/88) and Beaver (2001).

<sup>13</sup> The problem is that accommodation is an operation on input contexts. Global accommodation expands an input context  $c$  into a richer context  $c'$  which contains the material that is required to process the relevant sentence. On a static account we have no choice but to compute the presupposition and then increment it in the subsequent context. This plays havoc with the defining characteristic of presuppositions. For formally they so end up on a par with assertoric material.

The account is also superior to Schlenker's in various ways. It gives a simple and intuitive notion of presupposition, projection behaviour is regulated by independent Gricean principles (it is thus presumably 'explanatorily adequate' in Schlenker's sense), it captures all of Gazdar's predictions and improves on his account by an incremental account of conjunctions. And – last but not least – it does not run into the proviso problem.

## 5. Postlude

Transparency Theory achieves its primary goal. It derives the Karttunen/Heim predictions without having to specify the heritage properties for the logical connectives. But it does so at the cost of the simplicity and elegance we perceive in its original incarnation. Schlenker gives his account in a static two-valued semantics. However if we want to develop a presupposition theory in a purely pragmatic way it is unwise to first derive the Karttunen/Heim predictions and then to invoke two powerful mechanisms that make the core of the theory superfluous. In its present state Transparency Theory is better not called a theory. For to count as a theory it should at least have predictive power. We might take it to be an intellectual exercise to establish some equivalence results. But that's not the way it is advertised. It is advertised as an exercise in anti-dynamics. I consider the prospects of such an enterprise moot. So here is my final advice: dynamize. And as DRT-versions have shown, this does not necessarily involve a dynamic definition of the conjunction.

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