

Satisfied or Exhaustified

An Ambiguity Account of the Proviso Problem

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The presuppositions inherited from the consequent of a conditional or the (second) disjunct of a disjunction oscillate between a conditional and a non-conditional inference, depending on the context; the so-called ‘proviso problem’ (Geurts 1996 a.o.). The general solution to this problem is assuming that both presuppositions are generated and that some mechanism selects between them. We discuss data for which this mechanism makes the wrong predictions. Similar data have been taken by van der Sandt (1992) and Geurts (1996) to motivate the DRT-approach to presuppositions. Schlenker (2011), however, has raised various arguments against such an approach. We propose an alternative analysis within a ‘satisfaction’ approach to presuppositions, which doesn’t run into these problems. In our analysis, the differing presuppositions are the result of a systematic ambiguity involving exhaustification: a non-conditional presupposition obtains with exhaustification, and a conditional one without. Independently motivated plausibility considerations decide which reading is chosen with no direct selection of presuppositions needed. We discuss how this approach deals with the cases of proviso and the predictions it makes for biconditional sentences.

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The proviso problem Conditional/disjunctive sentences with a presupposition trigger in their consequent/second disjunct, schematised as *if A, B_p* and *not-A or B_p* respectively, exhibit an interesting pattern of projection. Descriptively, they sometimes appear to simply inherit the presupposition of their consequent/second disjunct *p*, as in (1) and (2). But sometimes they appear to allow a weaker conditional presupposition, $A \rightarrow p$, as in (3) and (4) (adapted from Perez-Carballo 2010).

(1) If John isn’t tired, he’ll read his bible.	(3) If John is catholic, he’ll read his bible.
(2) John is tired, or he’ll read his bible.	(4) John isn’t catholic or he’ll read his bible.
(a) \nrightarrow If John isn’t tired, he has a bible	(a’) \rightsquigarrow If John is catholic, he has a bible
(b) \rightsquigarrow John has a bible	(b’) \rightsquigarrow John has a bible

Existing solutions Existing accounts of the proviso problem are based on two mechanisms. The first is a strengthening mechanism which creates the candidate presuppositions: the conditional and the non-conditional presuppositions in (a)-(b’) above. The second is a mechanism for selecting a candidate over the other(s). Importantly, the selection mechanism is constrained by a measure of plausibility or some related notion (Lassiter 2012, Schlenker 2011, Singh 2008, van Rooij 2007, von Stechow 2008 a.o.) and this is essentially the reason why it will not extend to the data to be discussed below. As a concrete example, we briefly illustrate the gist of Lassiter’s account. Roughly, the selection mechanism takes into account whether the truth of the presupposition of the consequent/second disjunct is likely to be dependent on the truth of the antecedent/(negation of the) first disjunct or whether it is more plausible that they are independent. For instance, it is implausible that John’s having a bible is dependent on him being tired. Thus a non-conditional presupposition is selected for (1)/(2). On the other hand, John having a bible is plausibly dependent on him being catholic. So the conditional presupposition can be selected for (3)/(4).

Problematic data In addition to the classical proviso data above, there are examples like those in (5)-(8) adapted from van der Sandt 1992 and Geurts 1996, which are generally not discussed in the proviso literature. In these sentences, the antecedent/negation of the first disjunct strictly

entails the presupposition of the consequent.¹ These examples are relevant to the proviso literature because they appear to be associated with either a tautological conditional inference (c)/(c') or, crucially, a non-tautological unconditional one (d)/(d'). So one might expect that the selection mechanism mentioned above would be at work here as well. But all of the accounts above only predict the conditional presupposition. For instance, in Lassiter's account (we will discuss the others in the talk), the presupposition of the consequent/second disjunct is necessarily dependent on the antecedent/(negation of the) first disjunct, as the latter entails the former (e.g., *all students left* entails that *my best student left*). That is, learning the truth of the antecedent/(negation of the) first disjunct changes the degree of belief in the presupposition of the consequent/second disjunct, given the entailment relation. Therefore, the unconditional presupposition is predicted to be unavailable. Yet, e.g., *Hey, wait a minute. I didn't know John went to Europe* (von Fintel 2006) is a felicitous reply to (5)/(6). This suggests that (5)/(6) can have the unconditional presupposition that John went to Europe. The same argument can be made for (7)/(8). Van der Sandt 1992 and Geurts 1996 offer a DRT-account of the examples in (5)-(8). Schlenker 2011, however, has raised three problems for this approach coming from conditional presuppositions, semi-conditional presuppositions and quantifiers (see below). We propose a novel unified account to (5)-(8) and (1)-(4), within a satisfaction approach, which doesn't suffer from these problems.

(5) If John is in Berlin, he is happy that he	(7) If all students left, the janitor didn't realize
went to Europe.	that my best student left.
(6) Either John isn't in Berlin or he's happy	(8) Either not all students left or the janitor
he went to Europe.	didn't realize that my best student left.
(c) \rightsquigarrow <i>If John is in Berlin he went to Europe</i>	(c') \rightsquigarrow <i>If all students left, my best student left</i>
(d) \rightsquigarrow <i>John went to Europe</i>	(d') \rightsquigarrow <i>My best student left</i>

Assumptions of the new account Our account is based on four ingredients. The first is the mechanism of exhaustification in (9a): EXH asserts the preadjacent and negates its excludable alternatives, defined in (9b) (Chierchia et al. 2012, Fox 2007 a.o.). Second, we assume that a disjunction *A or B* has the standard alternatives in (10) (Sauerland 2004 a.o.), and that the conditional *if A, B* has as alternative *B whether or not A*, as in (11) (Ducrot 1969, Matsumoto 1995, van der Auwera 1997; see also Franke 2011). Given these assumptions, EXH applied to *A or B* gives rise to the exclusive *A or B and not both*, while applied to *if A, B* yields the conditionally perfected *A if and only if B*.

- (9) a. $\text{EXH}(\mathcal{A}lt(p))(p)(w) = p(w) \wedge \forall q \in \mathcal{E}xcl(p, \mathcal{A}lt(p))[\neg q(w)]$
b. $\mathcal{E}xcl(p, \mathcal{A}lt(p)) = \{q \in \mathcal{A}lt(p) : p \not\subseteq q \wedge \neg \exists r[r \in \mathcal{A}lt(p) \wedge (p \wedge \neg q) \subseteq r]\}$
- (10) $\{A \text{ or } B, A, B, A \text{ and } B\}$ (11) $\{if A, B, (if A, B \wedge if \text{ not-}A, B)\}$

Third, we assume a trivalent semantics: if the presupposition *p* of sentence ϕ_p is not met in world *w*, ϕ_p has the third value # in *w*. We also assume a Strong Kleene semantics for the connectives (e.g.

¹These types of examples go back to Soames 1979 and have been used against theories like Gazdar 1979, because they have a reading associated with a weak, in fact tautological, conditional presupposition, (c)/(c'), which such theories do not predict (cf. Heim 1990).

Beaver and Krahmer 2001, Fox 2008, 2014, George 2008, Peters 1979), according to which if the classically-valued arguments of a connective would suffice to determine a classical truth value, then the sentence as a whole has that value; otherwise it has the third value. In other words, the principle determines how # projects. As we show below, in this system exhaustification can influence the projection properties of its prejacent (and we will show, the same is true in Schlenker’s 2008 and 2009 approaches). Finally, we make the rather uncontroversial assumption that in an ambiguous sentence a reading is not available if contextually implausible. For instance, Winter (2001) (12) appears scopally unambiguous given that the surface scope reading is pragmatically implausible.

(12) Some cat is sitting inside every box. (#some < every; every > some)

Exhaustification and presupposition projection Consider the disjunction *not-A or B_p* in (13) with a presupposition *p* in the second disjunct *B_p*. The Strong Kleene principle tells us that the third value # of *B_p* projects to the whole disjunction only if the first disjunct *not-A* is 0: if *not-A* is 0, then the presupposition *p* of *B_p* better be 1 or the whole sentence is #. If on the other hand, *not-A* is 1, the whole disjunction is 1 regardless of *B_p*. The predicted presupposition for the disjunction is thus the conditional *A → p*. A parallel reasoning applies to the conditional case. Exhaustification as in (14), on the other hand, affects the projection properties. $\text{EXH}[\text{not-A or } B_p] = (\text{not-A or } B_p) \wedge \neg(\text{not-A and } B_p)$. This time if *not-A* is 1, the whole disjunction will be 1 if only if *B_p* is 0, which requires that its presupposition *p* be 1. In other words, the third value # of *B_p* always projects. This means that the predicted presupposition is simply *p*. Again, the same holds for the conditional case, given the assumptions about alternatives in (11).

(13) [not-A or B_p]/[if A, B_p] $\rightsquigarrow A \rightarrow p$ (14) EXH[not-A or B_p]/EXH[if A, B_p] $\rightsquigarrow p$

The account The present proposal makes the sentences in (1)-(8) ambiguous: they receive a conditional presupposition when unexhaustified, and the stronger unconditional one when exhaustified. However, as mentioned, we assume that contextually implausible readings of ambiguous sentences are absent or very hard to get. This explains why (1)/(2) is interpreted exhaustified as in (15), given that its unexhaustified version in (14) is implausible. On the other hand, (3)/(4) are ambiguous as both the unexhaustified (16) and the exhaustified reading (17) are plausible. Similarly, (5)-(8) are ambiguous as both readings (18) and (19) are plausible. Notice that the selection is only among possible readings, with no specific mechanism for selecting the presuppositions involved.

(14) *If John isn’t tired, he has a bible and he’ll read it if he isn’t tired.*

(15) *John has a bible and he’ll read his bible if and only if he isn’t tired.*

(16) *If John is catholic, he has a bible and if he is catholic, he’ll read it.*

(17) *John has a bible and John will read his bible if and only if he is catholic.*

(18) *If all students left, my best student left and if they left, the janitor didn’t realize that my best student did.*

(19) *My best student left and the janitor didn’t realize that he left, if all the students left.*

Geurts’ case Geurts (1996) suggests that the fact that (20a) only has the conditional presupposition in (20d), regardless of its pragmatic implausibility is a problem for satisfaction theories. This is straightforwardly predicted in our account: it is easy to show that neither global (20b) nor local exhaustification (20c) can give rise to anything other than the conditional inference in (20d).

- (20) a. Sue knows that If John isn't tired, he has a bible.
 b. EXH[Sue knows that If John isn't tired, he has a bible]
 c. Sue knows that EXH[If John isn't tired, he has a bible]
 d. \rightsquigarrow *If John isn't tired, he has a bible*

Schlenker's cases Schlenker discusses various problems for the DRT-account of the proviso data. First, this account relies on local accommodation for (3)/(4)'s conditional inference, which should thus not project like a presupposition. If (3)/(4) is further embedded, the conditional inference, however, does project. This is not a problem for our account, as all inferences are presuppositional. Second, the DRT-account has a problem with sentences like (21a), which tends to suggest the "semi-conditional" inference in (21b). Assuming that alternatives can be contextually pruned, based on contextual plausibility of alternatives, we can account for the reading in (21b) in our approach. Third, in the DRT-account presuppositions bound into by a quantifier are accommodated below the quantifier. So (22b) is not predicted as a presupposition for (22a). Our approach, instead, correctly predicts the presuppositional inference in (22b) if (22a) is exhaustified.

- (21) a. If John is 64 and is aware of our hiring policies, he knows we cannot hire him.
 b. \rightsquigarrow *if John is 64, we cannot hire him*
- (22) a. If I don't give an exam, none of my students will realize that he is incompetent.
 b. \rightsquigarrow *Each of my student is incompetent*

A new prediction In our account, exhaustification changes the projection of presuppositions by changing the meaning of the sentence. In parallel, an overt paraphrase of the exhaustified readings is predicted to give rise to the same effect. While the judgements are delicate, the biconditionals in (23b/c) appear to more strongly give rise to the unconditional inference than (23a).²

- (23) a. If John is a scuba diver, he will bring his wetsuit.
 b. John will bring his wetsuit, if and only if he is a scuba diver.
 c. If – and only if – John is a scuba diver, will he bring his wetsuit.

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²Notice that the prediction about biconditionals holds independently from our proposal given a trivalent account.

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