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Pragmatic Considerations in the Interpretation of Denying the Antecedent

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ABSTRACT: In this paper I am concerned with the analysis of fragments of a discourse or text that express deductive arguments suspected of being denials of the antecedent. I will first argue that one needs to distinguish between two senses of ‘the argument expressed.’ Second, I will show that, with respect to one of these senses, given a Gricean account of the pragmatics of conditionals, some such fragments systematically express arguments that are valid.

KEYWORDS: conditional perfection, denying the antecedent, fallacy, Grice, implicature

1. INTRODUCTION

In this paper I am concerned with the analysis¹ of fragments of discourse or text (*utterances*, in general), which contain deductive arguments suspected of being denials of the antecedent (DA from now on). I will focus on *pragmatic* aspects of argument analysis with respect to the identification of the premises of the argument. I will first argue that one needs to distinguish between two senses of ‘the argument expressed.’ Second, I will show that, with respect to one of these senses, some such fragments express arguments that are valid, and do not instantiate DA. I will appeal to a Gricean account of the pragmatics of conditionals in order to support my conclusion. Finally, I will discuss and reject an objection to my thesis.

2. THE FALLACY OF DENYING THE ANTECEDENT

Some deductive arguments instantiate the fallacy of *denying the antecedent*, which is to say that they have the form: *If p, q. ¬p. Therefore, ¬q.* The arguments that instantiate this form are usually materially invalid, which is to say that the premises can be all true and the conclusion false. However, not all such arguments are materially invalid. Due to

¹ See Ralph Johnson (2000 p.40) for the distinction between two aspects of the study of argument: the descriptive and the evaluative one. The former is the subject matter of the Theory of Analysis, the latter, of the Theory of Appraisal.

semantic entailments, or due to the fact that they instantiate another valid logical form, some of them are materially valid.²

Material validity is defined in terms of truth. So, if deductive arguments can be evaluated for validity they must have structural elements that are capable of bearing a truth-value. I will take these elements, such as p and q above, to be *propositions*.³ So, I will assume a deductive argument has in its structure a set of propositions $P = \{p_1, \dots, p_n, c\}$, where p_1, \dots, p_n are the premises and c the conclusion. This is not a definition of argument. It is no more than a tool useful for reconstructing and evaluating deductive arguments. Identifying such a set of propositions as the logical structure of a deductive argument is compatible with defining deductive argument in terms of *criteria* most proper for their evaluation, as Erick Krabbe does. He writes that by ‘deductive arguments’ he means “(single) arguments that invite an evaluation in terms of deductive criteria, even though they may not exclude the use of other criteria.” (Krabbe 2003, p. 1)

The Theory of Analysis deals with the problem of how to identify and reconstruct an argument that is put forward in a text or oral discourse. Its aim is then that of *interpreting* a fragment of a text or discourse or a contribution to a dialog. With respect to deductive arguments, and with respect to the issue of their evaluation for validity, the problem comes down to identifying, among all the propositions a fragment of text or discourse conveys, the propositions that constitute the set P of the argument.

3. PRAGMATICS ASPECTS OF INTERPRETATION

In order to approach the problem of how to identify P , I will mention briefly some points that have been traditionally made about the interpretation of *any* discourse or text, be it argumentative or not.

First of all, one useful concept is that of *what is said*, a concept introduced by H. P. Grice (1989, p. 25). This is the proposition *literally expressed* by the sentence uttered. This characterization may not be accurate: in uttering ambiguous sentences more than one proposition is literally expressed. In that case what is said is not only the proposition literally expressed (because more than one is literally expressed), but also the one *intended* by the speaker. To identify this proposition as the relevant one the hearer appeals to information about the *context* in which the sentence was uttered. Contextual information is also relevant in interpreting indexical or demonstrative expressions, as well as in ellipsis and anaphora resolution.

The context also plays an essential role in getting at other propositions that speakers communicate apart from *what is said* by their utterances. Speakers may make use of irony, suggestion, metaphor, presupposition, and so on. Grice has called some of the propositions that speakers *mean* by their utterances ‘implicatures.’ Implicatures always differ from what is said, but may be *entailed* by what is said, or merely *suggested* by it. *Conversational* implicatures are those implicatures that depend heavily on the details of the context in which an utterance is made. With respect to these implicatures,

² See Godden & Walton (2004, p. 222) for examples and a discussion of such cases.

³ Johnson (2000, p.168) defines *argument* in terms that make no reference to propositions, premisses or conclusion. Other authors are less radical in eschewing talk of propositions. Robert Pinto writes: “A set of propositions constitutes a set of premisses and a conclusion p if and only if someone puts them forward as premisses for p in the course of arguing for p .” (Pinto 2001, p.1)

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Grice argues that they are always *derivable*, which means that a hearer should only interpret a speaker as implicating a proposition if she is in the position to infer the proposition implicated from *what is said*, other information available in the context of utterance, and the assumption that the speaker acts according to the conversational maxims of rational and cooperative behaviour. Grice writes:

The final test for the presence of a conversational implicatures has to be, as far as I can see, a derivation of it. One has to produce an account of how it could have arisen and why it is there. And I am very much opposed to any kind of sloppy use of this philosophical tool, in which one does not fulfil this condition. (Grice 1981, p. 187, quoted in Neale 1990)

Stephen Neale refers to the requirement that Grice places on interpreters as the Justification Requirement (Neale 1990, p. 78). The inferential schema behind the requirement can be summarized as follows: a hearer is justified in taking a speaker to conversationally implicate that proposition which the speaker must be assumed to believe in order to preserve the assumption that the speaker is adhering to the conversational maxims. In order to avoid violations of conversational maxims, the speaker must be taken to intend to communicate more than *what is said* by her utterance.

As Deirdre Wilson and Dan Sperber make clear, the inference behind the Justification Requirement “plays little if any role in the recovery of implicatures” (Wilson & Sperber 1986, p. 378). Getting at *what* proposition a speaker implicates is a question of hypothesis formation, which is usually dealt with *intuitively* by interpreters. It was not among Grice’s aims to clarify this process. His aim was *rational reconstruction* of speaker’s communicative intentions. The Justification Requirement plays an essential role in the latter, but not in the former. I will come back to this point later.

4. TWO CONCEPTS OF ‘THE ARGUMENT EXPRESSED’

Rational reconstruction of what is implicit in a text or discourse that is suspected of putting forward a deductive argument is relevant to the Theory of Analysis of arguments, given that utterances need to be interpreted for the deductive argument to be identified. Explicitness is an important value in argumentation, as well as in communication in general.⁴ But there is no reason to restrict the interpretation of a text or discourse merely to what is explicitly stated, excluding implicatures or presuppositions from the interpretation. Suppose we restrict the interpretation only to *what is said* by each of the utterances of the discourse or text. Appealing to argument indicators, as well as to metalinguistic indications (if available) about what the speaker intends to do and how, we would then obtain a set P of propositions, one of which is the conclusion, the other the premisses of an argument. Let us call the argument that has this structure *argument-w* (‘w’ from what is said). Similar considerations, but this time taking into account also the propositions meant but not literally expressed, would lead to what we can call the *argument-m* (‘m’ from meant) conveyed. So ‘the argument expressed’ can be understood in at least two senses: the argument literally expressed by the sentences uttered; and the argument speaker-meant, which includes in P implicatures and presuppositions.

⁴ For the value of explicitness for argumentation, see Adler (2002, pp. 86-91)

Whether it is more important to focus on argument-w or on argument-m is a question that I do not want to settle here. I do not even know whether it has *one* answer, or whether the answer depends on our purposes as evaluators. What I claim is that, in as much as reconstructing the argument-m that a speaker conveys is important, attention should be paid to pragmatic elements involved, and especially to implicatures.

5. CONDITIONAL PERFECTION

In what follows I will focus on one kind of implicature that has been studied extensively, and which serves to interpret certain linguistic phenomena. What is usually called ‘Conditional Perfection’ (CP) is a phenomenon that consists in the tendency that people have in certain conditions to treat utterances of ‘If p then q ’ as expressing not only that p is a sufficient condition for q , but also that it is a necessary condition. That is to say, people tend to treat ‘If p then q ’ as expressing q , *if and only if* p . This phenomenon is independent of whether the context is one in which arguments are given and evaluated, or not. For example, when dad says to the son ‘If you mow the lawn, I will give you five dollars’ he may be taken to have asserted that *only if* the kid mows the lawn he will give him 5\$. One of the first to have observed this phenomenon was Oswald Ducrot (1969), followed by M. Geis and A. Zwicky (1971), who rediscovered it.⁵ In the terminology of the latter, the utterance of ‘If p (then) q ’ literally expresses *if p , (then) q and suggests, or invites the inference to q , only if p* , which can be better expressed as *if not- p then not- q* .⁶

Most authors have argued that the tendency to perfect conditionals is to be explained as an essentially *linguistic* phenomenon. Given that these authors take ‘if’ as lexically unambiguous, largely for the reasons that Grice (1989 pp.47-49) put forward against multiplying senses by postulating ambiguities, it is natural to expect a pragmatic explanation of CP. The phenomenon is usually treated as involving *pragmatic strengthening* of the content of the utterance, in the sense that the invited inference is to be explained as an implicature. However, not all authors agree on the details of the explanation.

Geis and Zwicky argue that, “what we have called ‘invited inferences’ constitutes a special class of ‘implicatures,’ although they are clearly distinct from the ‘conversational implicatures’” (Geis & Zwicky 1971, p. 5). More recent authors, such as J. van der Auwera (1997) and L. Horn (2000), consider that CP is due to a *scalar conversational implicature* that is triggered by the utterance of the conditional. They assume that the literal meaning of ‘if’ is such that it introduces a sufficient condition for the consequent to be the case. However, they differ in their account of the scalar implicature. Van der Auwera considers the scale of propositions S as involved in deriving the implicature. The proposition at the bottom constitutes what is said by dad’s utterance. The higher propositions in the scale have not been uttered. They are composed propositions that include reference to other sufficient conditions for the truth of q . Given that the upper ones entail the lower ones they are more informative.

⁵ For a history of the successive rediscoveries of CP, see van der Auwera (1997).

⁶ Horn points out that it has been observed that ‘ q only if p ’ is better paraphrased by ‘If not- p then not- q ’ (which is the *inverse* of the conditional) than by ‘If q then p ,’ or by ‘ p if q ,’ at least when p and q have different temporal and causal implications. I will follow this suggestion.

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- (S) ...
if p, q and if r, q and if s, q
if p, q and if r, q
if p, q

Van der Auwera explains the Gricean derivation of the implicature that p is a *necessary* condition:

Standard scalar implicatures arise as negations of the higher assertions, and this is also what we find here... when one supplies only the one sufficient condition p , one conversationally implicates that there is no second - and no third, etc. - sufficient condition. (van der Auwera 1997, p. 262)

Given the presumption that the speaker observes the maxim of Quantity (in particular, the first submaxim, which requires that the speaker make her contribution as informative as is needed for purposes of the exchange), and given her utterance of 'if p, q ,' the audience in the position to infer that r or s are not sufficient conditions for the truth of q . So only p is, which means it is a necessary condition as well. If r and s had been sufficient conditions for q , the speaker would have violated the maxim by not mentioning them. So they are not. Thus, 'One is allowed to sit in this seat if one is disabled or if one is older than 70' implicates that there is no other sufficient condition for being allowed to seat in that chair.

Other accounts of CP consider other scales. I will favor in what follows van der Auwera's scale S because it takes into account the contextual nature of CP. CP does not occur *always*, but only when other conditions are at least in principle possible. If no other conditions except p are in principle *possible*, we are not dealing with pragmatic enrichment, but logical relations. The variables s and r stand for other possible conditions that are relevant in the context. Given that the speaker does not mention them, the hearer is licensed to infer that they are not sufficient conditions.

6. CASE STUDIES

Keeping in mind van der Auwera's account of the scalar implicature involved in CP, let us go back to the issue of interpreting utterances that convey deductive arguments. Consider the case of a child uttering:

- (1) 'If I finish my homework, my dad will let me play basketball. I will not finish my homework. So, he will not let me play.'

Suppose the child's utterances are part of a conversation with a friend of hers. Suppose also that the child's father had told her: 'If you finish your homework you are allowed to play basketball.' The presence of 'so' indicates that the child intends to put forward an argument. Consider the distinction made above between the argument-w and the argument-m that a fragment of discourse may express. The argument-w expressed by her utterance has the form: *if H, P. ¬H. Therefore, ¬P*. So the argument-w instantiates DA. Given that there are no meaning relations between the terms used that would make this argument a case of semantic entailment, we should conclude that the argument is invalid.

There are cases in which the premises are true and the conclusion false. There may be other sufficient conditions for the child to be allowed to go play basketball.

Let us consider now the argument-m. Given her dad's utterance, it is reasonable for the child to think that doing the homework is a *necessary* condition for being allowed to go play. That is, her dad's assertion invited the child to 'perfect' the conditional, and the child did so in interpreting his utterance, and consequently in her own utterance of it in (1). In this case we are justified in interpreting *both* the father and the child as implicating the revered conditional. Scale S can be used to derive the implicature that there are *no other sufficient conditions* relevant in the context, and so that the condition of finishing the homework is *necessary* for the truth of the consequent. If there were other conditions (maybe cleaning her room, mowing the lawn, or taking the dog for a walk, which play the role of *r* and *s* in the scale) the father is expected to have mentioned them, in as much as he is presumed to observe the first submaxim of Quantity.

If this is so, we should take the child to interpret his father's utterance as communicating a necessary condition for the truth of the consequent, not merely a sufficient one. Given that the child merely reproduces the utterance, it is also reasonable to interpret the child's utterance in the same way. Even if the argument that results from considering only *what is said* by the child's contribution, is invalid, the argument-m, that considers the propositions speaker-meant as well, is valid. If the implicature is that *only if I finish my homework, my dad will let me play basketball*, which is better expressed as *if I do not finish my homework, my dad will not let me play basketball*, the argument-m has the form: *if $\neg H$, $\neg P$. $\neg H$. So, $\neg P$* . This is a valid *modus ponens* argument. Of course, the argument-m also has the premiss explicitly stated, *if H, P*. But this premise does not influence the validity of the argument.

Whether this argument is *the* argument the speaker expressed, or whether it is the only one that should interest us, are further questions that I have no intention to settle now. However, I take it that there are strong reasons to think that this argument-m is of certain interest, reasons which have to do with the general interpretative strategies of speaker-meaning that I mentioned in section 2. Given that conditional perfection is in this case justified, *in a certain sense*, a sense related to argument-m, no fallacy has been committed.⁷

7. A FEW CLARIFICATIONS

A few clarifications are needed. First, my reason for treating the child's utterance as not expressing a fallacious argument-m differs from some reasons that have been given in the literature for a similar conclusion. Thus, Michael Burke (1994) argues in favor of interpreting utterances similar to (1) as not expressing a fallacious argument. His strategy is based on the claim that a non-fallacious interpretation is always preferable "unless the

⁷ One could say that in this case the argument *superficially* is of a DA form, but *actually* it is a modus ponens. David Hitchcock analyses a fragment of text somehow similar to (1) and writes: "there is a valid form of argument, which can superficially look like the predicate-logic analogue of denying the antecedent" (Hitchcock 1995), although it is not of that form, according to his interpretation of the text. However, I want to avoid talking about *the* argument expressed. It is not clear to me that we should always focus on the argument-m, and that this is *the* argument expressed. It may be useful in a context of argumentation to focus on the argument-w, and consequently to attribute fallacy to the speaker. This may contribute to enhancing explicitness.

balance of textual, contextual, and other evidence” (Burke 1994, p. 24) favours the fallacious interpretation. And so, he suggests that one should take the conditional as not being asserted with the intention of making it a premise in the argument, but only for rhetorical or dialectical reasons. He holds that this is a possible interpretation, and that it should be preferred on the grounds of a weak *charity* principle (what he calls ‘fairness’ in interpretation). D. Godden and D. Walton reply that in all such cases “there is a very good reason to suppose that the stated conditional claim is part of the argument: namely, that it is stated.” (Godden & Walton 2004, p. 226) My reasons for rejecting fallacy attribution in (1) have nothing to do with charity considerations. I have not argued that the speaker must have meant by the conditional a bi-conditional just for the reason of avoiding attributing a fallacy to the speaker. Instead, I have offered a Gricean justification for believing that the inverse of the conditional has also been conveyed.⁸ If it has been conveyed within the fragment of discourse that contains the argument we should treat it as part of the argument. The fact that we also treat both the conditional and its inverse as premises of the argument-m will not affect the validity of the argument.

Second, I want to point out that my account of why (1) expresses a valid argument-m should be clearly distinguished from an account of whether one is *justified* or not in believing the inverse of a conditional. Although the child has not committed the fallacy of DA in the argument-m she put forward, she may have argued from false or unacceptable premises. She may have not been justified in holding the conditional and/or its inverse. Actually, in (1) the child *is* justified in believing (1), given that she has the information directly from her father. In other cases a speaker may have *inductive grounds* for believing a conditional and its inverse, such as when one believes that both ‘If it has rained the streets are wet’ and its inverse are true.

On the other hand, even if one is justified in *holding* the inverse to be true, it is not clear such inductive grounds can justify one in *perfecting* the conditional, that is, in interpreting an utterance of a conditional as implicating a bi-conditional. Suppose someone utters (2), as in Aristotle famous example, with the purpose of giving an argument:

(2) ‘If it has rained the streets are wet. It did not rain. So, the streets are not wet.’
 The Gricean account of CP appealed to so far does not yield the result that the speaker implicates the inverse of the conditional in (2): in a scale S of propositions (in which *r* and *s* are conditions such as the cleaning of streets with water, a river flood etc), and under the assumption that the speaker observes the first submaxim of Quantity (Make your contribution as informative as is needed for the purposes of the exchange), the hearer might conclude that there are no other sufficient conditions apart from rain. This is what the reasoning schema behind the scalar implicature involved in CP seems to predict. But the hearer knows (and knows the speaker believes) that *there are* other sufficient conditions. Attributing to the speaker the intention to implicate that the condition is necessary would then conflict with the assumption that the speaker observes the first maxim of Quality (Be truthful). So, the Gricean schema for deriving implicatures does not allow for CP in (2). Of course, the hearer may still be highly charitable and avoid

⁸ Such Gricean considerations show that Wesley Salmon was right in his comments on an example similar to (1): “Actually, people often say “if” *when they mean* “if and only if”; if the first premiss is construed in that way, the argument, of course, becomes valid, though it loses some of its rhetorical force.” (Salmon, 1984, my emphasis)

fallacy attribution by taking the speaker to be truthfully holding, on inductive grounds, a modified inverse of the conditional, such as: if the streets are wet, *probably* it has rained. The speaker would then be assumed to observe both maxims mentioned. But the *only* reason for being so charitable is to avoid fallacy attribution. I have not argued in favour of such a move.

One last observation before I pass to consider a possible objection. With respect to the *generality* of the analysis mentioned, the account of (1) given should not encourage drawing the conclusion that all contributions that are such that the argument-w expressed is of DA form, while the conditional *invites* perfection, should be interpreted as cases in which the argument-m is a valid modus ponens. It does not follow from the account of CP presented above that we should conclude this. Gricean accounts of implicatures are not *psychological* hypothesis, so they are not explanations of all *tendencies* to perfect conditionals. As Kent Bach writes:

Grice did not intend his account of how implicatures are recognized as a psychological theory or even as a cognitive model. He intended it as a rational reconstruction. When he illustrated the ingredients involved in recognizing an implicature, he was enumerating the sorts of information that a hearer needs to take into account, at least intuitively, and exhibiting how this information is logically organized. He was not foolishly engaged in psychological speculation about the nature of or even the temporal sequence of the cognitive processes that implements that logic. (Bach 2006, p. 8)

Gricean accounts of CP are rational reconstruction of *some* cases in which people treat sentences of the form ‘if *p*, *q*’ as expressing bi-conditionals; more precisely, of those cases in which a scalar implicature *is* present. They are not reconstructions of all such cases because not *all* of them are rational (i.e. justified) conversions of the conditional. Not in all cases in which there is a tendency of the audience to take a conditional as expressing a bi-conditional, the scalar implicature *is* present. A Gricean account of implicature is compatible with there being cases in which the audience takes the speaker to have implicated something, but the Justification Requirement is not satisfied, so there is no reason to consider that an implicature is present. Similarly, a Gricean account of CP is compatible with there being cases in which we treat the conditional as a bi-conditional, but no scalar implicature is actually present. The above reconstructions explain our tendency to (intuitively) perfect conditionals only in as much as the tendency is *rational*, and so can be rationally reconstructed. But sometimes intuitions are not reliable. As several authors have pointed out, people tend to perfect the conditional especially in cases of promises, threats, warnings, prohibitions or commands. In most of these cases, such as (1), the derivation of the scalar implicature seems possible, so the tendency is usually justified. But sometimes people perfect the conditional when they should not: “Ever since Aristotle pinpointed the temptation to infer *If the streets are wet, it has rained* and *If he's hot, he has a fever*, however, it has also been clear that the conversion or perfection of conditionals cannot be restricted to warnings, threats, or promises.” (Horn 2000, p. 319) That is, CP is sometimes performed when it should not be.

8. AN OBJECTION REJECTED

Let me discuss now one possible objection to my account of (1) and other similar cases. Jonathan Adler suggests a different interpretation of this case:

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[A]n obvious alternative to viewing the child as fallaciously reversing a conditional is that the child treats his conditional as really a bi-conditional. My claim is that there need be no rivalry between the view that the child meant his conditional as a bi-conditional, and that his reasoning involved a fallacious reversal of the conditional. For the child's meaning by that conditional a bi-conditional, is itself plausibly due to his treating the conditional as reversible. (Adler 1994, p. 227)

If someone treats a conditional as reversible it is either because she *has reasons* to think the sufficient condition is also necessary, and so that the inverse is true, as I have argued the child in (1) does; or, because she does not distinguish between *the meanings* of 'if' and of 'only if.' Adler cannot mean the former, because in that case there is no reason to attribute fallacy to the child. He must mean the latter: the child and people in general are here accused of not having a good grasp of the literal meaning of 'if.' That is, people confuse⁹ *what is said* by a sentence of the form 'if *p*, (then) *q*' in virtue of its literal meaning with the perfected conditional, i.e. with the biconditional.

What I have argued above is that in cases such as (1) in which the argument-w may be DA, the argument-m is not of DA form, but is modus ponens, given that the scalar implicature is a premise in the argument. But the objection goes: the confusion of the child about the meaning of 'if,' which she treated as if it meant *if and only if*, explains why she meant a bi-conditional by her utterance of (1). There are no implicatures involved, but merely confusion about what the first sentence in (1) says. The child misunderstood the sentence she uttered. It is her confusion that explains her reversing the conditional, not the reasoning involved in scalar implicatures. There is no implicature conveyed. All that we have is the argument-w, which is of DA form.¹⁰ Fallacy attribution is then unavoidable.

This objection is not as strong as it may seem. If conditional perfection is *systematically* due to confusing the literal meaning of 'if' for that of 'if and only if,' then it should lead to erroneous results systematically. However, this is not so. As I have pointed out above, it has been argued in the literature¹¹ on CP that people perfect the conditional more frequently in situations in which the condition is indeed *both* necessary and sufficient. And, in those situations, this is a rational thing to do. So it cannot be due to a systematic error about the meaning of 'if,' because it cannot be due to an *error* at all. The explanation of CP embraced in this essay makes of CP a rational thing to do in those cases in which the condition is (and the speaker believes it to be) a necessary one. People may tend to perfect conditionals even in cases such as (2), where the condition is not necessary (and cannot be reasonably believed to be). A scalar implicature is not derivable in those cases, as I have pointed out with (2). Those are indeed to be explained as some sort of confusions, given that the condition is actually *not* necessary. But in cases such as (1), it is reasonable for the child to treat the condition as necessary, so it is reasonable for

⁹ The idea that there is a confusion involved in such cases comes up in the writings of other authors as well: "Perhaps we tend to *confuse* If A, then B with If B, then A because if B follows from A, it is fairly common for A to follow from B also." (Cederblom & Paulsen 2006, p. 165, my emphasis). Also C. Tindale: "It is clear that if we have one form that is valid and another that is very similar to it but invalid, then someone could *confuse* the two. That is why formal fallacies are sometimes called fallacies of resemblance." (Tindale 2007, p. 50 my emphasis)

¹⁰ Adler's words suggest this line of reasoning. However, if my interpretation of his words is incorrect, this objection remains a possible one and needs to be dealt with.

¹¹ See Horn (2000) for a presentation of the empirical results obtained by psycholinguists about which types of conditionals invite perfection systematically.

us, as interpreters, to attribute to her the intention to convey the implicature that the condition is necessary. In such cases, one should not attribute fallacy with respect to the argument-m. This I would like to be the conclusion of my paper.

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[Link to commentary](#)

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