

Projective meaning and implicature cancellation*

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Abstract

It has been a matter of recent debate what is the relationship between different levels of meaning and what interactions between them are possible (Potts 2005, Roberts et al. 2008). This paper deals with these interactions as far as implicature cancellation is concerned. We aim to show that canceling amounts to addressing a new question under discussion, which predicts that only at-issue meaning, but not projective meaning (Simons et al., 2010) can be a meaning canceler, and which restricts cancellations to contexts where adding a new QUD is the right discourse move.

1 Introduction

In recent literature about the so-called levels of meaning (Potts 2005, Roberts et al. 2008), there has been an ongoing debate about what is the relationship among them (that is, among at-issue meaning, Conventional Implicatures, presuppositions, etc.). Are they completely independent from each other? Are they constrained in the way they can interact? For instance, it is not clear to what extent anaphora binding across levels is possible, as shown in (1). While in (1-a) the binding between the pronoun and a noun phrase inside a Conventional Implicature (CI henceforth) is possible, in (1-b) a similar interaction, with the pronoun inside a CI, it is not.

- (1) From Roberts et al. (2008)
- a. Stan, who took an exam_{*i*}, passed it_{*i*} with flying colors.
 - b. *No reporter_{*i*} believes that, as he_{*i*} wrote, Ames is a spy.

The goal of this paper is to contribute to this debate by analyzing the properties of implicature cancellation, an operation in which different levels of meaning are involved. Our main claim is that canceling amounts to addressing a new question under discussion (QUD henceforth). This proposal has two main consequences. The first one is that only at-issue meaning, but not projective meaning—that is, presuppositions and CIs (Simons et al., 2010)—can be a meaning canceler. The second one is that cancellations are restricted to contexts where adding a new QUD is the right discourse move.

2 Data

One of the paradigmatic properties of conversational implicatures (ConvI henceforth), as originally described by Grice (1975), is that they can be canceled by subsequent discourse, as shown in (2). Namely, in (2-a), the ConvI, triggered by *pretty* that the boy is not extremely tall is

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cancelled, while in (2-b), the cancelled ConvI, triggered by *some*, is that not all students came. Both examples are instances of scalar implicatures (Horn, 1972) in which the use of an item in an ordered scale conversationally implicates that the sentence is false with a stronger item.

- (2) a. I went to the movies with the pretty tall boy that Peter had introduced me. In fact, he was extremely tall.
 b. Some of my students came to the party. In fact, I believe that all of them came.

In the examples in (2), the cancellation was carried out by means of an assertion. In contrast, other types of meaning cannot carry out this operation, as shown in (3). In (3-a), the presupposition, triggered by the factive verb, that all the students came cannot cancel the implicature associated with *some*. In a similar way, implicature cancellation cannot be carried out by a conventional implicature, such as a non-restrictive relative clause (Potts, 2005). Example (3-b) shows that the CI meaning according to which the boy was extremely tall cannot cancel the conversational implicature that he was only pretty tall, and not taller.

- (3) a. Presuppositional canceller
 # Some of my students came to the party. In fact, I regret that all of them came.
 b. CI canceller
 # I went to the movies with the pretty tall boy that Peter had introduced me, who in fact was extremely tall.

The same can be shown for less well-known cases of ConvIs. (4) is an example of the Catalan emotive particle *Déu n’hi do* (which we gloss as ‘DND’).

- (4) a. Déu n’hi do que alt que és en Joan! De fet, és extremament alt.
 ‘DND how tall John is! In fact, he is extremely tall.’ Assertion
 b. # Déu n’hi do que extremament alt que és en Joan!
 ‘DND how extremely tall John is!’ Presupposition/CI

DND takes a *wh*-clause and conveys that the true proposition in the set is unusual. Unlike the emotive predicate “it’s amazing”, DND implicates that the extreme values in the set do not hold (see Mayol and Castroviejo (2009) for a full analysis). The first sentence in (4-a) asserts that John is tall to a high degree, and implicates that he is not tall to an extreme degree. This implicature is cancelled by the second assertion. In contrast, in (4-b), it is not possible to cancel the implicature by means of the adverb “extremely” within the *how*-phrase. This adverb in a *how*-clause has been analyzed either as a presupposition (D’Avis, 2002), or as a non-restrictive modifier, and hence a CI (Castroviejo, 2008). Regardless of the analysis we may adopt for “extremely”, the data in (4) point to the same direction as (2) and (3). While assertions can cancel an implicature, presuppositions and CIs cannot.

These contrasts are surprising since ConvIs are usually regarded as constituting a very weak meaning, which appear or disappear depending on contextual factors. If this is so, why should they resist cancellation in (3) or (4-b)?

3 Previous work

Although cancellation is used as one of the main tests to identify a ConvI, there is surprisingly little work on the properties of the cancellation mechanism itself.

Gazdar (1979) argues that different types of meaning are added in a particular order to the semantic computation. In particular, his proposal is that ConvIs are added to the meaning computation before presuppositions, and only the presuppositions compatible with the existing ConvIs survive. That is, presupposition can never cancel an implicature because they are added

last to the meaning computation, which explains the unacceptability in (3-a). In contrast, Gazdar’s account has nothing to say about CIs, that is about why (3-b) is not acceptable.

Other than this lack of coverage, Gazdar’s proposal is unsatisfying on two other counts. First, as noted by Beaver (2001), it is counter-intuitive that presuppositions be the last things added to the computation, since they are usually thought as preconditions for felicitous utterance interpretation. Second, the account crucially relies on a stipulated ordering between ConvIs and presuppositions and not on a principled explanation.

4 Proposal

In this paper we attempt a more intuitive analysis that accounts for the facts and that explains the properties of implicature cancellation. Our analysis can be summarized as follows: (i) the operation of canceling requires the generation of a new QUD and (ii) since projective meaning (presuppositions and CIs) cannot generate a new QUD, it cannot carry out a canceling operation.

We assume Robert’s (1996) formalization of the discourse topic as the QUD as well as the relationship that she establishes between the QUD and the focus of the sentence. More specifically, we adopt Robert’s Question-Under-Discussion constraint on Focus, which states that any utterance of B has the presupposition that the **last** QUD denotes the set of propositions which constitutes the focus semantic value of B, as shown in (5).

- (5) The Question-Under-Discussion constraint on Focus (Roberts, 1996)
 An utterance B whose logical translation is of the form β or $?\beta$, where β is a formula, is felicitous only if $\llbracket \beta \rrbracket^f = \text{last}(\text{QUD}[\llbracket B \rrbracket^o])$.

Our second assumption has to do with our ontology of meanings. We take there to be three major kinds of meanings: at-issue, projective and ConvIs. Along the lines of Potts (2005), at-issue meaning is the descriptive content contributed by an assertion. Following Simons et al. (2010), projective meaning includes CIs and presuppositions, which share one core property: they do not address the QUD. The main distinction between the two is that whereas presuppositions convey preconditions for a successful context update, CIs represent side comments by the speaker which do not need to hold true prior to the update with the sentence containing the CI. Finally, ConvIs do address the QUD. In fact, they are at-issue strengtheners, since they force a stronger reading of the asserted content.

In this paper we propose a definition of the operation of cancelling. We claim that it represents a context update of the cancelling sentence q on the previous context c (i.e., $c + q$), where q entails the previous assertion p ($q \subseteq p$), but not its ConvIs ($q \not\subseteq \text{ConvI}(p)$). This is to say that when we make an utterance that entails the at-issue content of our own previous assertion but not its ConvI, then we are making a cancellation. Furthermore, this operation is compliant with the constraint we phrase as (6):

- (6) The QUD constraint on Cancellation
 The operation of canceling presupposes a QUD $?q$, such that $\text{QUD } ?q \neq \text{last}(\text{QUD})$.

That is, for an utterance to be able to cancel, the current QUD needs to be different from the previous one; there needs to be a change of QUD. In what follows, we illustrate cases of felicitous and infelicitous cancellations, and show how (6) is able to correctly derive the judgments.

4.1 At-issue cancellations

In (7) we see an instance of a felicitous cancellation.

- (7) a. Who has two cars?
 b. [I_F] have two cars.
 c. Actually, I have [$three_F$].

Why is (7-c) felicitous? First, observe that the assertion in (7-b) matches with the (explicit) QUD in (7-a). By the QUD constraint on Focus, it follows that the corresponding QUD should be precisely the one spelled out in (7-a). Now, as we proposed in the previous section, the cancellation in (7-c) entails the assertion in (7-b), but not its ConvIs (i.e., having three cars entails having *at least* two cars, but not having *exactly* two cars). If we apply the QUD constraint on Focus to (7-c), it follows that a plausible QUD would be something along the lines of “How many cars do you have?”. Since the QUD of (7-c) does not coincide with the QUD in the previous utterance, the QUD constraint on Cancellation is satisfied, and the result is a felicitous cancellation.

Now, let us look at an instance of infelicitous cancellation, such as the one illustrated in (8).

- (8) a. How many cars do you have?
 b. I have [two_F] cars.
 c. # Actually, I have [$three_F$].

As in (7-a), (8-a) spells out the QUD that (8-b) is an answer to (the focus on “two” yields a QUD that inquires about amounts). By the same token, in (8-c), the QUD constraint on Focus predicts that the QUD be (8-a), too. Hence, the QUD of (8-c) coincides with the QUD in the last utterance. Therefore, the QUD constraint on cancellation is not satisfied. Certainly, (8-c) *per se* is not infelicitous, but it is only possible as long as we interpret it as a self-correction or as an afterthought. However, it is not a *bona fide* implicature cancellation.

4.2 Impossible projective meaning cancellations

So far, we have shown that the QUD constraint on Cancellation derives the desired judgments for the two cases we have examined. However, we have only discussed cancellations carried out by at-issue content. Now it is the turn to explain why projective meaning cannot cancel a ConvI.

We have argued that in order for an utterance to be a meaning canceller, it has to generate a QUD that does not coincide with the QUD of the previous utterance. This condition will never be met by projective meaning; presuppositions and CIs cannot introduce a new QUD. As it happens, they cannot even address the current QUD, as observed by Simons et al. (2010), since its discussion function is to introduce either a precondition or a side-comment. The fact that projective meaning cannot address the current QUD is illustrated in (9) and (10).

- (9) A: Who came to the party?
 B: #It’s odd that John came.
- (10) A: How do you feel about your neighbor?
 B: #I just saw that bastard John.

The inability of projective meaning to generate a new QUD is related to the fact that only (certain) speech acts can generate one, to begin with. Furthermore, projective meaning does not constitute a speech act by itself, but depends on the content of an assertion or a question (which are speech acts). In other words, there is not a speech act of presupposing, but a presupposition is triggered by certain lexical items, and accompanies the speech act of asserting or questioning. The same is true for CIs.

Take for instance the possible QUD generated by B’s assertions in (9) and (10). In (9), the presupposition (i.e., that John came) is triggered by the assertion of the factive predicate *it’s*

odd. The QUD Constraint on Focus forces that the QUD that the answer in (9) is addressing is “What do you think about John coming?” ((11-a)), and not a QUD generated by only the embedded presupposition. In other words, the question-answer pair in (9) is not congruent: the question would require an answer with *John* in focus, unlike what happens in the answer.

Turning now to (10), even though the meaning conveyed by the expressive *bastard* can be treated as a second assertion of the sort “The speaker holds a negative attitude toward the addressee.”, the properties of projective meaning prevent it from generating its own QUD. It cannot be used to answer an inquiry about the speaker’s feelings. On the other hand the sentence the CI is embedded in, which constitutes at-issue meaning, does generate its own QUD, shown in (11-b).

- (11) a. (9) \rightsquigarrow QUD: What do you think about John coming?
 b. (10) \rightsquigarrow QUD: Who did you just see?

To summarize, the projective meanings contained in an utterance (such as factive presuppositions and CIs) cannot generate their own QUD and, thus, cannot be used to address one. In consequence, the QUD constraint on Cancellation will never be satisfied: projective meaning cannot cancel an implicature because it can never change the QUD.

4.3 Naturally-occurring examples

Our discussion has used so far constructed examples. In this section, we will discuss naturally-occurring examples. These examples were found by searching markers which can be used to introduce an implicature cancellation, such as “actually” or “in fact”. Most examples seem to comply with the QUD constraint on Cancellation. Consider (12) to begin with.

- (12) Some things about trekking in Nepal.
 The “Everest Base Camp” trek as well as the “Around Annapurna” trek are regarded some of the best trekking routes in Nepal and actually all over the world.
 (<http://guyshachar.com/content/blog/1997/trekking-in-nepal/>)

This sentence is produced by a blogger who posts about “Some things about trekking in Nepal.” From the context, we accommodate that a possible QUD for the utterance could be (13-a). In contrast, the QUD of the utterance of the second conjunct (“and actually all over the world”) could be something along the lines of (13-b).

- (13) a. QUD₁: What are the best trekking routes in Nepal?
 b. QUD₂: Are these treks considered the best only in Nepal?

Note that the kind of implicature that gets cancelled has to do with the width of the comparison class relevant to the expression “best trekking routes”. The literal meaning of the sentence would be “the best trekking routes considering Nepal as the smallest comparison class” and the implicature that is generated would be an exact reading of the sort “the best trekking routes considering Nepal as the exact comparison class.” By uttering “and actually all over the world”, the speaker prevents the addressee from interpreting the sentence with the exact reading.

In (14), we have an explicit question that is answered by a complex sentence that contains a cancellation.

- (14) What are some baroque, classical, and romantic compositions that are dark and moody?
 Mahler Symphony No. 10 – actually, all of the Mahler symphonies have dark sections.
 (<http://answers.yahoo.com/question/index?qid=20100630180022AAtmG3w>)

Hence, we know that the first clause is answering the QUD in (15-a). Crucially, the second clause is not a reply to (15-a) but to a different, implicit QUD that could have the shape of (15-b).

- (15) a. QUD₁: What are some baroque, classical, and romantic compositions that are dark and moody?
b. QUD₂: How many of Mahler's symphonies have dark sections?

The fact that we have two different QUDs is what enables the interpretation of the second clause as an implicature canceller. Here, the implicature that the addressee could generate would be one where "Mahler Symphony No. 10" is the only dark and moody work by Mahler. Otherwise, the speaker would have provided more information. To prevent this kind of reading, the speaker adds a follow-up introduced by "actually" that points out that all of Mahler's symphonies have these properties.

Finally, consider example (16). This is a case where the "in fact" clause cancels a possible exact reading of the phrase "quite interesting".

- (16) Yeah, I admit I do find Putin quite interesting.. in fact very interesting if not fascinating.
(<http://www.russianwomendiscussion.com/Forum/index.php?topic=8091.905;wap2>)

The first clause is clearly the answer to a yes/no question. From the context of this utterance, which appears in an internet forum, we learn that it is an answer to (17-a). On the other hand, the "in fact clause" is not replying the same QUD, but rather (17-b). This makes this sentence a proper implicature cancellation.

- (17) a. QUD₁: Do you find Putin interesting?
b. QUD₂: How much interesting?

As many naturally-occurring excerpts as we have found that abide by the QUD constraint on Cancellation, we have also found challenging cases such as the one in (18), where it is not obvious that the second conjunct answers a different QUD than the first one.

- (18) One night in Beijing. Well actually two.
(<http://www.puddingandchopsticks.com/2010/12/06/one-night-in-beijing-well-actually-two>)

Two comments are in order. First, this sentence is the headline of a post in a blog. It is a matter of debate whether headlines also represent answers to QUDs. If this were not the case, then the QUD constraint on Cancellation would not apply. Second, it is probably the case that the speaker (the blogger) is playing with the violation of the constraint on cancellation as a rhetorical device. (Note that the option of considering the "actually" clause an afterthought is less plausible since we are dealing with a piece of written language, although not in a formal register.)

To sum up, an informal search of naturally-occurring examples of cancellation indicates that most examples comply with the QUD constraint on cancellation. We leave it for future work to perform a more thorough corpus study of cancellation markers.

5 A competing theory

Before presenting our conclusions, we would like to briefly consider a competing theory to the QUD constraint on Cancellation, which we will call the “Focus constraint on Cancellation”.¹ This theory could be summarized as in (19):

- (19) The Focus constraint on Cancellation
Linguistic material in a Focus position cannot be cancelled.

That is, this theory simply states that the implicature triggered by an item in a Focus position cannot be cancelled. An equivalent way of expressing this idea would be to say that an item on focus does not trigger implicatures, but only asserted content, which, by definition, cannot be cancelled.

This theory can explain the contrast between (7) and (8): in (7) the implicature associated with the numeral *two* can be cancelled because the numeral is not on focus position, while in (8), since the numeral is on focus position, its implicature either cannot be cancelled or this meaning is asserted to begin with (and is, therefore, not cancellable).²

In order to tell the two theories apart, we would need either (i) to find a case of a felicitous cancellation in which the implicature is triggered by material in focus and there is a change of QUD or (ii) a case of an infelicitous cancellation in which the implicature is not triggered by material in focus and there is no change of QUD.

The first type of examples seem, unfortunately, impossible to construct: we cannot have a discourse in which there is both a change of QUD and a cancellation of an implicature triggered by material in focus. To mention a specific case, consider the implicature triggered by a numeral (i.e., the exact reading). If the numeral is focused, by the QUD constraint on Focus, the first QUD will be of the shape “how many x ?”. If the assertion is followed by a cancellation of the exact-reading implicature (such as “Actually, I have three” (cf. (7-c))), the QUD of this utterance will also necessarily be of the shape “how many x ?”. Thus, the shape of the two QUDs is the same, there is no change of QUD and, therefore, the QUD constraint on Cancellation will never be satisfied.

Fortunately, it is possible to construct the second type of discourses. In fact, the Focus constraint on cancellation seems to run into problems precisely with cancellations carried out by projective meaning. That is, this theory would predict that if the item that triggers the implicature is not on focus, it can be cancelled, regardless of whether the canceller is at-issue or projective meaning. However, this does not seem to be the case, as shown in (20). Although the numeral is not part of the focus, it cannot be cancelled by presuppositional material, since presuppositions cannot trigger a QUD change.

- (20) a. Who has two cars?
b. # $[I_F]$ have two cars. In fact, I regret having three.

To sum up, in this section, we have considered a competing theory, according to which implicatures triggered by material in focus cannot be cancelled. Although both the QUD constraint on Cancellation and the Focus constraint on Cancellation make the same predictions to a certain extent, the former can readily explain why it is not possible to cancel non-focal material when the meaning canceler consists of projective meaning, while the latter cannot.

¹We thank Maribel Romero for bringing to our attention this other plausible approach to the cancellation data.

²We address the interested reader to Geurts (1998) and subsequent work for a discussion on how the two readings evoked by numerals arise.

6 Conclusions

In this paper we have taken a close look at the phenomenon of implicature cancellation: we have discussed what properties it has and, more importantly, what restrictions it obeys. We have proposed that implicature cancellation is subject to the Question-Under-Discussion constraint on Cancellation. In a nutshell, a cancellation is carried out by a sentence that presupposes (and answers) a different QUD from the previous utterance. The intuition behind this proposal is that a cancellation is a legitimate move only if the cancelled content was not really the main point of the speaker's previous move. Otherwise, why would the speaker have chosen to produce an implicature only to cancel it in the next utterance? In contrast, if the speaker's main goal was something else, he can later change the orientation of the discourse to address the implicated meaning.

In addition, we have pointed out that since projective meaning (presuppositions and Conventional Implicatures) does not have the potential to address the QUD (Simons et al. (2010)), it cannot presuppose a new QUD and, thus, cannot cancel conversational implicatures.

This work is relevant for the current discussion about the relationship between different types of projective meaning. In particular, we have identified an additional property that presuppositions and Conventional Implicatures share, namely their behavior as far as implicature cancellation is concerned; none of them is able to raise a new QUD, because only at-issue content can.

Since we have focused on the properties of the content that can cancel other content, the natural follow-up of this research is the discussion of which levels of meaning can be cancelled or suspended, as well as what are the differences between cancellation and suspension.

Finally, we expect that experimental data can provide us with additional criteria to be able to choose between the proposal defended here and the competing theory that relies exclusively on the properties of focus to account for the facts.

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