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### Citation for published version

Kapogianni, Eleni (2018) Ironic implicature strength and the test of explicit cancellability. *Intercultural Pragmatics*, 15 (1). pp. 1-27. ISSN 1612-295X.

### DOI

<https://doi.org/10.1515/ip-2017-0028>

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# **Ironic implicature strength and the test of explicit cancellability**

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## **Abstract:**

In this paper, the Gricean notion of explicit cancellability (Grice 1975, 19781) is used as a testable characteristic, able to indicate different degrees of strength for different types of (ironic) implicatures. According to the definition adopted for this analysis, implicature strength is determined by the likelihood of retrieval of an implicature in a specific context and, essentially, by the degree of certainty that the hearer maintains about the correctness of the inferred interpretation. Ironic implicature strength is considered to be the product of various factors (“factors of implicature strength”), some of which are always present (such as the type and strength of assumptions on which a derivation is based) while others are optional and appear in tandem with specific irony strategies. Irony strategies are categorised into two general types (meaning reversal and meaning replacement), which are expected to show different degrees of implicature strength, being influenced by different factors. For the experimental testing of the hypotheses, subjects were presented with the task of judging the acceptability of the explicit cancellation of various implicated (ironic, as well as non-ironic) meanings. Findings show significant differences between irony types in terms of cancellability (measured as acceptability of cancellation – AC), under the influence of (i) type of syllogism and associated assumptions, (ii) co-textual cues, and (iii) humorous framing.

**Keywords:** irony, explicit cancellability, implicature strength, humorous framing, oxymoron

## **1 Introduction**

Since Grice’s proposal of five basic characteristics for implicatures (cancellability, non-detachability, calculability, not being part of the expression’s conventional force, and independence from truth conditions – Grice 1975:57-58) many theorists have tried to use them in order to distinguish between implicated and nonimplicated meaning. Cancellability, in particular, has been the focus of discussion and debate, as far as its effectiveness in discerning implicatures is concerned, even if Grice himself made it clear that his five characteristics were not intended as tests (Grice 1978:114-115).

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<sup>1</sup> Grice’s original spelling is “cancelability”.

In “Further notes on Logic and Conversation” Grice (1978:115-116) defines cancellability as follows:

A putative conversational implicature *p* is explicitly cancelable if, to the form of words the utterance of which putatively implicates that *p*, it is admissible to add “*but not p*”, or “*I do not mean to imply that p*”, and it is contextually cancelable if one can find situations in which the utterance of the form of words would simply not carry the implicature.

Despite the fact that cancellability does not seem to be a sufficient condition for the presence of conversational implicatures (Grice 1978:116; Sadock 1991:373) it has been widely used as a test (Horn 2004). A number of studies have questioned the validity of cancellability as a test and even its validity as a unifying characteristic of implicatures (Weiner 2006; Burton-Roberts 2006, 2013; Borge 2009; Capone 2009; Jaszczolt 2009; Geurts 2011:18-21; Feig 2013; cf Blome-Tillmann 2008, Dahlman 2012, and Åkerman 2014 for using the test with revisions/caveats). Among other arguments, these current approaches point out the dual nature of the characteristic, which is clear in the Gricean definition quoted above, but had not received enough attention in the past (Carston 2010).

As Jaszczolt (2009: 60-68) points out, contextual cancellability, i.e. the inability of a meaning to arise in certain contexts, is not even real act of cancellation, since there is no meaning to be cancelled in an imaginary context in which the implicature would simply not arise. However, even as a thought experiment, the search for such a context can be both helpful and informative: the inability of finding contexts that prevent a potential meaning from arising should be a very strong indication that this meaning is not implicated.

Unlike the contextual cancellability thought experiment, which seems to work in a fairly straightforward way, explicit cancellability is a much more debatable criterion. The most

important feature of explicit cancellability, which is at the same time the main cause of disagreement among theorists, is the fact that it can only be applied inside the context of the utterance<sup>2</sup>. This means that we cannot approach and assess this characteristic by separating an utterance from its full context, i.e. the discourse situation, including the speaker, the hearer(s), and their common and individual assumptions. Keeping in mind that the two facets of the Gricean cancellability belong to different levels of language description (Jaszczolt 2009:262), an intriguing challenge arises when examining explicit cancellability and its potential formulation as a test for implicatures.

The aim of the present study is to demonstrate the usefulness of explicit cancellability as a measure of (ironic) implicature strength. It is proposed, that is, that the strength of an implicature can be reflected on a scale of acceptability of explicit cancellation. This approach, however, cannot be justified unless we first draw some crucial distinctions: (a) explicit cancellability from the speaker's versus the hearer's perspective and (b) speaker-intended implicatures versus putative implicatures. After treating these theoretical issues, we will turn to the phenomenon of verbal irony in order to discuss the notion of ironic implicature strength and formulate a set of testable hypotheses.

## **2 What kind of meaning can be cancelled?**

Burton-Roberts (2006) argues that cancellation of Particularised Conversational Implicatures (henceforth PCIs) is impossible in context: if a meaning was intended it is impossible for the speaker to retract it and, if a meaning was not intended, it is simply not an implicature. Therefore, according to this line of thought (an earlier version of which appears in Capone 2003, also revisited in Capone 2009), what looks like a cancellation phrase is in fact a

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<sup>2</sup> Blome-Tillmann's proposal that the test can also be valid if applied inside a context C', similar to the original context C of the utterance does not seem justifiable enough (Jaszczolt, 2009:65-66)

clarification phrase, aiming to repair an infelicitous inference. This viewpoint emphasises that it is impossible for an implicature to arise independently from the speaker's intentions. It is, however, possible to talk about "putative implicatures" (in Grice's terms) or "potential implicatures" (contra Burton-Roberts 2013) and this is where a shift is required from the perspective of the speaker to the perspective of the hearer and the utterance itself<sup>3</sup>. This distinction between perspectives is compatible with the distinction between "utterer implicature" and "audience implicature" (Saul 2002; Horn 2012; Haugh 2013).

Consequently, there needs to be a distinction between the following statements that concern the production and retrieval of pragmatic (inferential) meaning and involve the speaker and the hearer(s):

- (1) a. The speaker intends to convey a meaning *m* by producing the utterance *U* in the context *C*.
- b. The utterance *U* conveys meaning *m* in the context *C*.
- (2) a. The hearer retrieves meaning *m* by hearing the speaker produce the utterance *U* in the context *C*.
- b. The utterance *U* has the potential of giving rise to meaning *m* in the context *C*.

There is an obvious difference between (1b) and (2b), which is related to taking the speaker's or the hearer's perspective, in a pragmatic theory which is concerned with intentions and recovery of intentions. It is clear that an analysis from the point of view of (1), would concentrate on the meanings that were intentionally conveyed through the utterance, while

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<sup>3</sup> Note that, according to Burton-Roberts (2013), Generalized Conversational Implicatures (GCIs) would count as "potential implicatures" and would therefore be cancellable. The present analysis, however, focuses on potential implicatures that are context-dependent, i.e. that are linked to the utterance rather than the sentence.

any interpretations and inferences that the hearer(s) may draw from the utterance, if not intended by the speaker, would be considered incidental and/or irrelevant to the analysis.

On the other hand, examining an interaction from the point of view of (2) leads to an utterance-based rather than intention-based analysis: taking the hearer's perspective (and assuming that there are no problems in the transmission of the utterance, such as being misheard), it is reasonable to consider possible for an utterance to give rise to various inferences within a certain context, some of which may have not been intended (implicated) by the speaker (see also Sanders 2013).

The question, of course, is whether some of these inferences can be considered as "potential implicatures" of the utterance in a specific context, regardless of the speaker's actual intentions. Among the many inferences that hearers draw from an utterance (e.g. inferences about the assumed common ground, the described events, and the speaker's attitudes), there are inferences concerning the speaker's primary and secondary intended meaning(s) (see Jaszczolt 2009; Haugh and Jaszczolt 2012). These are the inferences that can be classed as potential/putative implicatures. In other words, a meaning (proposition) that can reasonably be attributed to the speaker's communicative intentions, given the content of the utterance and the context, can be classed as a potential implicature.

The present analysis approaches the semantic and pragmatic characteristics of the utterance through a parallel examination of its actual as well as its possible functions in a specific context, taking into consideration not only the successful and optimal interactions, in which the hearer recovers all and only the intended implicatures, but also complex interactions, in which both speaker and hearer negotiate the additional meanings of an utterance through pre-emptive cancelling, speculative interpretations and repairs (see also Haugh 2008, Haugh 2013). Under this perspective, each utterance is viewed as potential bearer of various implicatures, which may or may not be retrieved and/or cancelled.

The argument that studying inferential strength (of potential implicatures) does not necessarily involve taking the speaker's perspective can receive further support from the fact that it is possible for the speaker to have fuzzy intentions. There is such a great variety of factors that influence the speakers' and hearers' thought processes during interaction, that every such process is always in a dynamic relationship with the ever-changing context and assumptions related to it (also pointed out in Jaszczolt 1996). Ambivalence of intentions can be due to different reasons, such as multiple and possibly incompatible goals or simply lack of certainty about the aims of what is communicated (see Jaszczolt 1996:706 discussing an example originally found in Sperber & Wilson 1986).

Let us now return to the question of exploiting explicit cancellability as a test: how and for what purposes can it be used? First of all, as hinted earlier, there are two different possibilities for the case of unintended potential meanings of an utterance (see also Haugh 2013):

- (3) a. The speaker is aware of a potential implicature of her utterance U in the context C, which she does not intend to convey (and may choose to cancel it in advance).
- b. The speaker is not aware of a potential implicature of her utterance in the context C, which she does not intend to convey (and may have to cancel it when/if retrieved by the hearer).

In the present analysis, the second possibility (3b) and, more specifically, the case in which the speaker cancels the retrieved implicature, is what mostly concerns the formulation of explicit cancellability as a test. The fact that a hearer is able to draw an inference based on the speaker's utterance, classifies this inference as a potential implicature of the utterance. In this case, the degree to which the speaker's attempt of cancellation seems plausible/felicitous is what appears to be measurable.

Finally, it is worth addressing the existence of “uncancellable” implicatures, examples of which often come up in the literature (e.g. Weiner 2006 – interestingly arguing for the non-cancellability of an ironic example). It can be argued that, in most of these cases, what is “uncancellable” is the fact that the speaker has meant more than what they said and not the actual content of the implicature (Haugh 2013). Let us revisit a frequently discussed example, originally employed by Sperber and Wilson (1981):

(4) Max: Do you ever speak to Charles?

Ann: I never speak to plagiarists

+> Charles is a plagiarist

a. Max: I didn't know he was a plagiarist

Ann: Charles isn't a plagiarist, but didn't you know his wife is? I would never speak to her, which is why I never speak to Charles either.

b. Max: That's unfair, it wasn't even proved that he plagiarized.

Ann: (??) But I was not suggesting that Charles is a plagiarist, I still speak to him, since I don't believe he plagiarized.

Although convoluted, it is conceivable that Ann could implicate a meaning the retrieval of which relies on some assumed common ground (i.e. that Charles' wife is a plagiarist) as well as some socio-cultural assumptions (something along the lines of: being in no speaking terms with someone's spouse leads to not speaking to them either). The reason for Max retrieving the wrong implicature in (4a) is him not sharing the common ground assumed by Ann. On the other hand, when there are no discrepancies in the shared common ground, it is infelicitous to cancel the implicature (in (4b), the allegation that Charles is a plagiarist is recognised by both speakers as part of the common ground).



The important observation here is that, depending on the context and the amount of shared information, some PCIs are harder to cancel than others. It will be argued that this gradability of cancellability is the observable result of the gradability of implicature strength.

### 3 Verbal irony: a typological approach

In order to explore the applications of the criterion of explicit cancellability for the purpose of reflecting different degrees of implicature strength, it is worth focusing on a phenomenon that consists in a complex interplay of semantic and pragmatic factors. It will be argued that verbal irony employs a variety of strategies for the creation of its rhetorical effect and these strategies, in turn, result in implicatures of variable strength.

The prevalent pragmatic (Gricean/Post-Gricean) approaches to verbal irony (Grice 1978; Wilson & Sperber 1992; Clark & Gerrig 1984; Attardo 2000, among others) tend to focus on specific strategies (often a single strategy, such as “echoic mention/attribution”), without capturing the full range of instantiations of the phenomenon (as demonstrated by Dynel 2013). This study relies on a set of conditions that are considered necessary and jointly sufficient for the presence of irony and contribute to its distinction from similar phenomena such as non-ironic humour or banter (see Kapogianni 2013; 2015; 2016):

- i. Background contrast: the ironic utterance needs to be triggered by some background conflict between ideas, reality and expectations, beliefs etc.
- ii. Incompatibility between some element of what is said and facts, common sense, world knowledge, salient contextual information or contextual expectations.
- iii. Evaluative attitude of the speaker towards some specified target (as noted by Grice 1978).

The next step to understanding and analysing the phenomenon is to examine a wide variety of utterances that fulfil the aforementioned conditions and attempt a categorisation based on semantic/pragmatic criteria. These criteria should cover some important questions concerning the relationship between the expressed and the intended meaning, namely (a) is the intended

proposition semantically and/or logically related to the expressed proposition? and (b) what is the reasoning process that leads from the expressed to the intended proposition?

Let us examine some examples coming from various irony strategies<sup>4</sup>, in order to see what the answer to these questions is for each:

- (5) “This is a great party!” [Intended: This is a terrible party]
- (6) a. “This dress is slightly overpriced!” [Intended: This dress is extremely overpriced]
- b. “This car is going at the speed of light!” [Intended: This car is going really slowly]
- (7) A: I am going to pass this exam!
- B: “And I am the Queen of Romania!” [Intended: Your claim is impossible]
- (8) Context: A job interview for a publishing company.
- Candidate: Shall I introduce myself?
- Interviewer: “No you should sing as an aria from the marriage of Figaro!” [Intended: Your question is unnecessary]

Example (5) is considered a typical ironic example. As Giora (1995) has pointed out, the nature of the relationship between the expressed and the intended meaning is not that of direct, but that of indirect negation, since the intended meaning is not just “not great” but “terrible”. In other words, the two meanings are antonyms. This is an indication that one of the main strategies for irony relies on scales (either with the use of actual scalar terms or, more frequently, with the creation of ad hoc scales). This observation becomes clearer in examples (6a) and (6b), in which irony appears as understatement – overstatement, and scalar relationships have to be evoked for the retrieval of the intended meaning: “slightly <

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<sup>4</sup> All examples in this section are based on the author’s corpus of naturally occurring ironic utterances (in spontaneous or scripted discourse – Kapogianni 2013). Some modifications for a more straightforward understanding of the intended meaning were deemed necessary, while two examples have been adapted from Greek (6b and 8).

moderately < considerably < extremely” for (6a) and “extremely slow < very slow < slow < average speed < fast < very fast < speed of light” for (6b).

Examples (7) and (8), on the other hand, seem to work very differently. In example (7), which is rather conventionalised, the speaker makes an obviously false and outrageous claim, in order for it to serve as an ironic comment on the hearer’s explicitly asserted or assumed beliefs. Example (8) works in a similar way, since the ironist says something highly irrelevant/inappropriate for the given context, in order to convey her evaluative attitude. In this irony strategy, the semantic meaning of the expressed proposition is not related to the meaning of the intended proposition. It is for this reason that the ironist could have used any other equally outrageous utterance in order to convey the same meaning (e.g. “*Yes, and I am the Easter Bunny*” in (7) or “*No, we just called you because we wanted to see you tap-dance*” in (8)).

The examples discussed above seem to be divided into two categories (examples 5 and 6 versus examples 7 and 8), their main difference being the kind of relationship between the expressed and the intended meaning. It is indeed the case that, through the investigation of a substantial corpus of ironic examples (compiled and researched in the framework of Kapogianni 2013) the various ironic strategies seem to fall into two main broad categories:

Type1, “meaning reversal”: As in examples (5&6), the ironic meaning is related to the expressed meaning through some case of meaning reversal, either relative (two opposite points on a scale, not necessarily the extremes), or absolute (as in the case of antonymy).

Type2, “meaning replacement”: As in examples (7&8), the ironic meaning is a completely separate proposition of evaluative character, which, instead of being based on the expressed proposition, it replaces it.

Having addressed the first of the distinguishing criteria proposed before the discussion of the examples (the semantic and/or logical relationship between the intended meaning and the meaning of the expressed proposition) we now need to return to the second one: what is the reasoning process that leads from the expressed to the intended proposition? From the hearer's point of view, it is obvious that for both types, the recognition of the lack of sincerity/literalness is a prerequisite. For Type1, the derivation of the ironic meaning involves the reversal of (parts of) the expressed meaning, while for Type2 it involves a more complex reasoning process, as in (9):

- (9) Premise 1: The speaker answered with a comment (made an analogy) that suggests that if the trigger utterance<sup>5</sup> is valid, then her utterance is also valid.
- Premise 2: The explicit meaning of her utterance is obviously invalid.
- Conclusion: The speaker intends to invalidate (criticise, undermine) the trigger utterance.

There is one further observation to be made concerning the distinct reasoning processes for the two proposed irony types. For Type1 ironies, the path of meaning reversal can be followed both ways, depending on whether one takes the speaker or the hearer's perspective: the speaker reverses the intended meaning in order to produce the ironic utterance, while the hearer reverses the expressed meaning in order to infer the intended utterance. On the other hand, this two-way relationship doesn't hold for Type2 ironies: although it is easy to derive the intended meaning via the utterance, it is not possible to predict what outrageous/surreal

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<sup>5</sup> "Trigger utterance" is the utterance that causes the ironic response. It usually, but not always, immediately precedes the irony in the case of Type2 ironies.

utterance the ironist will choose to use in order to convey the intended meaning of a Type2 irony.

Although both types of irony and their subtypes<sup>6</sup> can be used with a humorous intention, Type2 ironies are much more intrinsically linked to humour than Type1 ironies (as shown in Kapogianni 2011). For Type2 ironies, there is a significant incongruity between the context to which each expression would belong if uttered sincerely/literally and the actual context. Notably, this incongruity is very different from the one that exists between the appropriate and the actual context of Type1 ironies, since, for the latter, the appropriate context is the mirror of the actual context (the context of a nice party as opposed to the context of a boring party for example (5)), while for Type2 ironies the context corresponding to the expressed proposition is absolutely and surprisingly irrelevant. In that sense, Type2 ironies approach and resemble the techniques of absurdist/surrealist humour (see also Attardo et al. 2002:25, Kapogianni 2011). This characteristic will be shown to have significant effects for the way the whole framework of discourse is interpreted (Test 1).

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<sup>6</sup> A few of these strategies were included in the examples (such as overstatement and understatement), but I will not proceed to an exhaustive description of all possible subtypes, since it falls outside the scope of this paper.

#### 4 Factors of (ironic) implicature strength

The purpose of the division of the phenomenon of verbal irony into two types is the further investigation of correlations between different reasoning processes and a variety of factors (both general and specifically related to irony) that influence the strength of ironic implicatures. This section is aimed at determining the factors of ironic implicature strength and describing their effects.

Before any further discussion, it is necessary to clarify the term “implicature strength”. The notion of strong/weak implicatures is frequently mentioned in the semantics/pragmatics literature (e.g. Ziegeler 2000; Geurts 2009; Wilson and Sperber 2012) although not always with the same content. Most of the post-Gricean uses of these notions are derived from Sperber and Wilson’s (1986) approach, which elaborates on the issues of assumption strength and implicature strength. For Sperber and Wilson, implicature strength is related to (mutual) manifestness and contrasted with implicature indeterminacy, i.e. the more determinate and manifest an implicature the stronger it is. Although the notion of implicature strength used in the present analysis is not too far from Sperber and Wilson’s, there are some notable differences that need to be pointed out. For Sperber and Wilson, the principle of relevance allows for only one desirable interpretation and one main intended implicature, which is necessarily the strongest of all possible implicatures of the same utterance. Weaker implicatures, for them, are those that may or may not be retrieved without affecting the main intended meaning (they can be, for example, implicatures that generate poetic or stylistic effects – Sperber and Wilson 1986:224). In short, Sperber and Wilson’s account discusses implicature strength in terms of intentions rather than the likelihood of correct interpretation, which is the main focus here. A strong implicature, according to the current analysis, is one

that is easily derived, reinforced (or made salient) by a number of contextual/co-textual factors, and, therefore, difficultly defeasible.

When it comes to irony in particular, it is useful to turn to Yus's "criterion of optimal accessibility" (Yus 2000) according to which the successful recognition of irony is determined by detectable incompatibilities within various elements of the context, common ground, and discourse<sup>7</sup>. These elements are incorporated in the following proposal but the categorisation of factors crucially considers the properties of the syllogisms behind irony derivation:

(a) Richness of contextual information / common ground: The main resource of information to which the interlocutors resort during a successful interaction is, of course, the context. It goes without saying that the richer the available contextual information, as well as the common ground established during the interaction, the stronger the support offered to any inferences drawn from the uttered sentences. In example (4) (bearing the implicature "Charles is a plagiarist"), the difference in strength of the implicature between (4a) and (4b) can be attributed to the difference in the amount of established common ground information.

(b) Nature of assumptions needed for the derivation of implicatures: It is normally expected that the more widely/better established the character of the knowledge that serves as a source for these assumptions, the greater the possibility that these assumptions lead to confident conclusions, i.e. strong implicatures. For example, most Type2 ironies are easily recognisable because their literal meaning goes against common real-world knowledge,

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<sup>7</sup> Yus (2000) makes claims about processing and processing effort in his proposal. The present analysis considers the issue of implicature strength to be orthogonal to issues of processing: strong implicatures can be arrived at in different ways (different combinations of factors a-e) and regardless of processing effort.



and the hearers do not even need to resort to further contextual information in order to derive the implicature. This, however, is not the case for Type1 ironies, which heavily rely on situational (at-hand) context.

(c) Reasoning process: Despite the fact that most PCIs are the result of abductive (nonmonotonic) reasoning, it can be argued that a case like Type2 ironies (as shown in (9)) involves a deductive syllogism and, in particular, a modus tollens: ‘if p then q’ (‘if your utterance is valid then so is mine’) – ‘not q’ (‘my utterance is obviously invalid’) – the conclusion is ‘not p’ (‘your utterance is not valid’). The conclusion of such a syllogism is expected to be drawn with a very high degree of certainty, as opposed to the relative uncertainty of an abductive syllogism.

(d) Co-textual cues: The immediate co-text (the expressions that precede or follow an implicature trigger) is also responsible for the strength of the implicature. In the case of irony, the juxtaposition of an ironic expression and a literal one can occur within one sentence (at a sub-propositional level) and is a frequent sub-strategy of Type1 (otherwise known as “oxymoron” – Partington 2011). Such ironic implicatures are particularly strong, given the reinforcement received by the literally intended part of the utterance.

(e) Prosodic cues and extra-/para-linguistic information. Although outside the scope of this paper, spoken interactions heavily rely on prosodic cues and extra-linguistic information such as facial expressions and gestures (Attardo et al 2003). These are usually employed to reinforce implicatures – if not to trigger their own implicatures. It is important to note that intonation is very frequently used as an important recognition cue for Type1 (context dependent) ironies, while it has less to contribute to Type2 ironies, the recognition of which is granted by strong assumptions.

The variability of factors of implicature strength can justify the hypothesis that implicature strength is a gradable characteristic and inversely proportionate to cancellability (the stronger the implicature the more difficult it is for it to be explicitly cancelled).

One final factor to be considered when using explicit cancellability as a test is the framework in which the cancellation phrase appears. Depending of the setting of the discourse (formal/informal, familiar/unfamiliar interlocutors, humorous/nonhumorous) different frameworks can be adopted, and even alternate, which then need to be recognized by the interlocutors in order for them to interpret each-other's utterances with accuracy. In the case of irony, for example, it is expected that, once the ironic intentions of the speaker are recognized and established, the interlocutors may opt to retain ironic and/or humorous speech as a framework and make their contributions accordingly (Kotthoff 2003). The adoption of such a framework, which deviates from the more normal/expected literal/nonhumorous framework, entails the danger of misunderstandings and interpreting utterances in the wrong framework. In that case, as already pointed out in the recent literature (Borge 2009:152, Weiner 2006:129, Jaszczolt 2009:263) a humorous framework, the cancellation phrase reinforces the implicature.

## **5 Testing speakers' intuitions**

The general aim of the empirical part of this study is to compare the strength of different types of ironic and nonironic implicatures, testing specific predictions that are based on factors of implicature strength (as presented in the previous section). In particular, the factors of implicature strength considered here are: the nature of the derivation process, including the

syllogism and the nature of assumptions involved in it (factors b&c)<sup>8</sup>, the presence of contextual cues (factor d), as well as the emergence/adoption of a strong humorous framework through the dialogue (a factor which is specific to humorous interactions, including many cases of irony). Contextual richness (factor a) was treated as a controlled variable, in this case, given its independence from the investigated types of (ironic) implicature (i.e. the type of ironic implicature does not depend on the richness of context and vice versa). Finally, prosodic and extra-linguistic cues (factor e) were excluded from the tests, which were conducted in written form.

## 5.1 Hypotheses

Considering the above, the empirical part of this study tests the following four hypotheses:

H1 Given an equal amount of contextual information, Type2 ironies are expected to be stronger implicatures than Type1 ironies, because the syllogism employed in their derivation relies on a restricted set of strong assumptions, as opposed to the syllogism employed in the derivation of Type1 ironies, which poses fewer restrictions on the amount and strength of the assumptions that can be used as its premises. This difference in strength will appear as a difference in cancellability: Type1 ironies are expected to be more cancellable (higher acceptability of cancellation – henceforth AC) than Type2 ironies (lower AC).

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<sup>8</sup> These two factors are considered together since they essentially determine the difference between Type1 and Type2 ironies, leading to the same prediction regarding their strength (i.e. Type2 ironies are expected to be stronger than Type1 ironies), with factor (b), nature of assumptions, accounting for the finer differences in strength within each irony type.

- H2 Type1 ironies are not expected to be different from non-ironic PCIs, since they do not differ in terms of their derivation process (employed syllogism and type of necessary assumptions).
- H3 The oxymoron strategy of juxtaposition of literally contradictory concepts within the same sentence (classified as a Type1 irony) is expected to be very difficult to cancel i.e. have a significantly low rating of AC, since the same-sentence co-textual cues strongly reinforce the irony implicature.
- H4 There is a strong relation between Type2 ironies and humour, which is responsible for higher percentages of retention of the ironic/humorous frame during the interpretation of Type2 ironic interactions (which is not the case for Type1 ironic interactions).

The empirical testing is based on the elicitation of speakers' intuitions about the acceptability of cancellation of different types and subtypes of ironic meaning, also compared to the AC of non-ironic PCIs<sup>9</sup>. For the present study, acceptability is defined as the property of a phrase that sounds logical, makes sense, exhibits a degree of coherence with the preceding phrases in the dialogue, and is thought of as highly possible to occur in a natural (non-constructed) dialogue.

## **5.2 Test 1**

### **5.2.1 Methods and participants**

The test was designed as an on-line questionnaire each item being a short 3-turn dialogue in English, the final turn of which (a cancellation phrase for the critical items) was evaluated for

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<sup>9</sup> To the author's knowledge, there are no previous experiments in the literature testing different degrees of explicit cancellability. Of course, cancellability has been directly or indirectly employed before in various tests for distinguishing between explicit and implicit meaning, such as in Katsos (2008).

its acceptability<sup>10</sup>. A 7-point scale was used for the acceptability judgments, with point 1 being labeled as “totally unacceptable” and point 7 as “totally acceptable”. Seventy-two different dialogues were used as test items (with an addition of 3 more dialogues as training items at the beginning of the test) and they were divided into 4 types (of 18 items each) according to the implicature type they contained:

- i. Non-ironic PCIs (henceforth labelled PCI).
- ii. Ironies of Type1 (henceforth labelled T1).
- iii. Ironies of Type2 (henceforth labelled T2).
- iv. Type 1 ironies of the “oxymoron” form (henceforth labelled T1(Ox)).

The test items were formulated on the basis of naturally occurring examples found in the author’s corpus (see footnote 4) and modified/adapted for the sake of uniformity in length and turn-taking structure (see Table 1 below). For each of the items, 3 different cancellability conditions were created, with 3 variations of the final turn of the dialogue: an uneventful closure of the dialogue (no cancellation phrase), representing the “acceptable” condition ([A]), a final utterance that was cancelling some non-inferential, non-theory-critical meaning of the same speaker’s first utterance, representing the “unacceptable” condition ([NA]), and a final utterance containing a phrase that was cancelling the implicature derived from the speaker’s original utterance, representing the “critical item” condition ([CI]). The aim of having three cancellability conditions for each item was to create an additional item-specific measure, which would test whether the acceptability ratings in the “critical” condition are spread over a different range on the scale than those in the “acceptable” and “unacceptable” conditions for the same item. This could also rule out any dialogue-specific interferences with the acceptability judgment, while, at the same time, items in “acceptable” and “unacceptable”

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<sup>10</sup> The Qualtrics online survey software was used.

conditions functioned as fillers for the test. The triple condition required the construction of three different versions of the test, in a Latin square design (each item was present in only one of the three conditions in each test). The turn-taking structure used for all items is shown on

Table 1:

Turn 1:		Implicature trigger
Turn 2:		Interlocutor's response (exhibiting retrieval of the implicature)
Turn 3:	(version 1: [A])	Uneventful closure of the dialogue (without cancellation)
	(version 2: [NA])	Contradiction: cancellation of a non-implicated meaning (assertion/entailment or presupposition) of the trigger utterance
	(version 3: [CI])	Cancellation phrase

**Table 1 Turn-taking structure for test items**

Examples (10-13) present one of each 4 types of items in all three conditions (acceptable, unacceptable, and critical):

(10) Type: PCI

Context: The radiator is working at full power. Both John and Mary know that.

John: It is really hot in here.

Mary: I will turn off the heating then.

John:

A      Thank you.

NA     But it's not hot in here

CI     No, I didn't mean that I wanted you to turn off the heating.

(11) Type: T1

Context: John and Mary were planning to go for a walk.

John: It has just started raining! *Oh that's going to be a great walk!*

Mary: I know, it's too bad we can't have our nice walk anymore.

John:

A Never mind, we can stay home and watch a movie.

NA But there's no sign of rain.

C No, I really think it's great! I'd love to go out and walk in the rain.

(12) Type: T2

Context: Mary is trying to persuade John to go on a road trip with their friend Jody, her three children, and their dogs.

John: To accept Jodi's invitation and go on a road trip with her family? *I've* already made plans to have boiled eggs put under my armpits and sleep on a bed of spikes.

Mary: You are exaggerating. I am sure you are going to regret it if we don't go.

John:

A And I am sure I am going to regret it if we do go.

NA But Jodi did not invite us to go on a road trip with her family.

C But I can't change my plans now. I am really looking forward to keeping boiled eggs under my armpits and lying on spikes during the weekend.

(13) Type: T1(Ox)

Context: John and Mary are walking in the street when a group of big motorcycle riders passes by them, making a really loud noise with their motorcycles

John: Here are the beloved unbearable Harley-Davidson riders again!

Mary: I know. I hate them too.

John:

A I really don't get their way of thinking.

NA But I've never seen any Harley-Davidson riders.

C No, I really meant I find them absolutely lovable.

Two questions were asked for each item: (1) "How acceptable is what John says at the end of the dialogue?" (with "acceptable" having been explained as "making sense" at the beginning of the test), followed by the 7-point rating scale, and (2) "Do you detect any humorous

intentions in what John says at the end of the dialogue?”, followed by a “yes/no/not sure” block of options, which is relevant to the fourth hypothesis (H4).

The test was taken by 30 participants (15 male and 15 female), monolingual native speakers of British English, aged from 18 to 28, of higher education, none of whom was a trained linguist. They were randomly divided into three groups of 10 (containing an equal number of males and females), each of which took one of the three different versions of the test. The test was completed online. Each participant gained access to it via a personalised link that allowed them to take the test once. The average duration of the test was 30 minutes and the subjects were paid £5 for their participation.

### 5.2.2 Results

All participants conformed to the requirements of the test and were judged as having understood the task correctly, so no participants were excluded from the analysis.

The mean ratings and standard deviations for each type and each condition are shown on

Table 2:

	Acceptable [A]	Critical [CI]	Unacceptable [NA]
PCI	6.65 (0.4)	4.39 (1.0)	1.66 (0.6)
T1	6.31 (0.5)	4.78 (1.0)	1.80 (0.7)
T2	6.13 (0.6)	4.60 (0.8)	2.27 (1.1)
T1(Ox)	6.25 (0.5)	3.05 (0.7)	1.83 (0.6)

**Table 2 Test 1: Mean ratings of acceptability of cancellation - AC (and standard deviation)**

Analyses of variance (ANOVA) were conducted for cancellability and type [3(A, NA, CI) x 4 (PCI, T1, T2, T1Ox)], treating items and subjects as random factors<sup>11</sup>. These revealed a main effect of cancellability ( $F(2,358) = 951, p < 0.001$ ,  $F(2,136) = 640.19, p < 0.001$ ), a main

<sup>11</sup> Analysis by participants, with type as a within-subjects factor, cancellability as a within-subjects factor, and group as a between-subjects (counterbalancing) factor (F1). Analysis by items, with cancellability as a within-items factor and type as a between-items factor (F2).



effect of type ( $F(3,537) = 18.9, p < 0.001, F(3,68) = 9.78, p < 0.001$ ) and an interaction of the two ( $F(6,1074) = 19.1, p < 0.001, F(6,136) = 7.85, p < 0.001$ ). Pairwise comparisons revealed that AC ratings for the critical items [CI] fell between the ratings for [A] and [NA], being significantly different from both<sup>12</sup>. Comparisons between types revealed that the difference between T1 ironies and non-ironic PCIs was marginally not significant ( $t(179) = 1.871, p = 0.061$ ), only weakly supporting H2 (i.e. that T1 ironies and PCIs are equally cancellable). Contrary to hypothesis H1, AC ratings for T2 ironies did not differ significantly from those for T1 ironies ( $t(179) = 0.971, p = 0.332$ ) nor from those for non-ironic PCIs ( $t(179) = 1.206, p = 0.229$ ). On the other hand, as predicted by H3 (i.e. that oxymoron will be hard to cancel), the AC ratings for the co-textually reinforced type T1(Ox) differed significantly from every other tested type (T1(Ox) – PCI:  $t(179) = 7.053, p < 0.0001$ ; T1(Ox) – T1:  $t(179) = 9.558, p < 0.0001$ ; T1(Ox) – T2:  $t(179) = 8.673, p < 0.0001$ ).

Moving on to the question regarding humour, verifying H4, a very strong relation was found between Type2 ironies and the detection of humorous intentions in the cancellation utterance:

Type:	Ascription of humorous intentions to the cancellation utterance (%)		
	Humorous	Non-Humorous	Undecided
PCI	28.4	57.6	14
T1	45.3	34.7	20
<b>T2</b>	<b>85</b>	7.8	7.2
T1(Ox)	39.5	43.9	16.6

**Table 3 Test 1: [CI] cancellation utterance & humour**

The results on Table 3 concern the critical items [CI] and present the overall judgments (humorous, non-humorous, undecided) for each category. For T2 ironies, 85% of the

<sup>12</sup> Overall: [A]-[NA]:  $t(71) = 35.85, p < 0.001$ ; [CI]-[A]:  $t(71) = 14.88, p < 0.001$ ; [CI]-[NA]:  $t(71) = -14.98, p < 0.001$ .

judgments were “humorous”, which is considerably higher than the percentage of humour detection in the other three categories. An additional method of verifying the relationship between T2 ironies and humour was to examine them item-by-item (18 items per category) and classify each item as being considered “humorous” in the [CI] condition if more than 5 participants (>50%) chose the “yes” reply in the humour question. This showed that all 18 of the T2 irony items were considered humorous by the majority of participants in the [CI] condition, as opposed to 5 (27.8%) of the T1 irony items, 3 (16.6%) of the T1(Ox) items, and 3 (16.6%) of the PCIs.

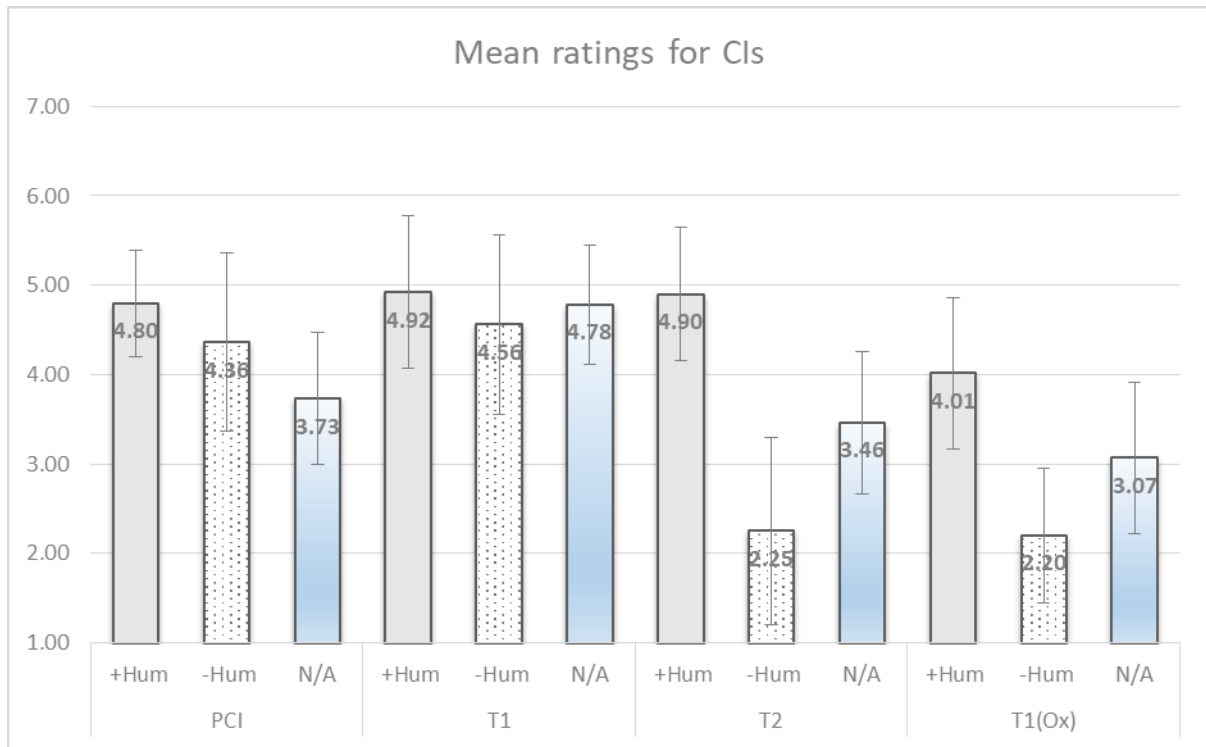
In light of the above, a more informative interpretation of the results requires dividing the ratings into humour-oriented (ascription of humorous intention to the critical utterance) and literal-oriented (a rating is literal-oriented if the participant did not ascribe a humorous intention to the critical utterance, therefore taking it at “face value”). For this purpose, the ratings for each item, in all three conditions [A], [NA], [CI] were divided into three categories (humour, non-humour, undecided) and new means were calculated separately for each. The following table (Table 4) shows the recalculated means and standard deviations for +humour and -humour judgments.

Condition:	Acceptable [A]		Critical [CI]		Unacceptable [NA]	
Humour: Type:	+HUM	-HUM	+HUM	-HUM	+HUM	-HUM
PCI	6.10 (0.9)	6.76 (0.6)	4.80 (1.2)	4.36 (2.0)	3.29 (1.9)	1.48 (0.7)
T1	6.49 (0.7)	6.17 (1.3)	4.92 (1.7)	4.56 (2.0)	3.22 (1.5)	1.36 (0.7)
T2	6.30 (0.8)	6.08 (1.2)	<b>4.90 (1.5)</b>	<b>2.25 (2.1)</b>	3.78 (1.7)	1.89 (1.5)
T1(Ox)	6.06 (1.3)	6.33 (1.0)	<b>4.01 (1.7)</b>	<b>2.20 (1.5)</b>	3.16 (1.8)	1.50 (0.9)

**Table 4 Test 1: Mean acceptability ratings (and standard deviation) for +humour and –humour judgments**

Our interest, here, is the [CI] condition, although it is worth noting that a humorous interpretation also made a difference in the ratings of the [NA] condition (i.e. even when the

utterance contained a contradiction, it was not rated as low in a humour-oriented interpretation as in a literal-oriented interpretation). Figure 1 illustrates the differences in mean AC ratings of CIs for +humour, -humour, and n/a (undecided) humour judgements:



**Figure 1: Mean AC ratings for CIs including the +/- humour distinction**

T-tests were run (for unequal sample sizes/unequal variance) within each category, to determine whether the mean ratings for a +humour reply are significantly different from the mean ratings in a -humour reply (see Table 5). For the [CI] condition, it was found that PCI and T1 ratings were not significantly different between +humour and -humour (PCI:  $t(145)=1.694$ ,  $p=0.0924$ ; T1:  $t(113)=1.1092$ ,  $p=0.269$ ) but the difference between +humour and -humour ratings was highly significant in the case of both T1(Ox) and T2 (T1(Ox):  $t(140)=6.8813$ ,  $p<0.0001$ ; T2:  $t(14)=4.6151$ ,  $p=0.0004$ ).

These results lead to re-examining H1 and H2 (expecting a significant difference between the AC of T1 and T2 ironies, while not predicting a difference between T1 and PCI) separately for humour-oriented and literally-oriented ratings. T-tests were run to examine the significance of the difference in the AC ratings between all pairs of item types for both the +humour and the –humour judgments.

Results of t-tests (Welch t test)		
	+humour	–humour
T1 vs. PCI	t(125)= 0.468 p= 0.6407	t(121)= 0.611 p= 0.5421
T1 vs. T1(Ox)	t(145)=3.254 p= 0.0014*	t(103)= 7.606 p<0.0001**
T1 vs. T2	t(136)= 0.087 p= 0.9304	t(19)=3.734 p= 0.0014*
PCI vs. T1(Ox)	t(119)= 3.001 p= 0.0032*	t(178)= 8.302 p< 0.0001**
PCI vs. T2	t(106)= 0.483 p= 0.6304	t(16)= 3.545 p= 0.0027*
T1(Ox) vs. T2	t(122)= 3.781 p= 0.0002*	t(15)= 0.085 p= 0.9331

**Table 5 Comparisons between all types (\*significant, \*\*extremely significant)**

The difference between T1(Ox) - T1 and between T1(Ox) - PCIs, which was already significant in the mixed results (table 2) is even more significant in the literal-oriented judgments. It is noteworthy, however, that the difference in AC ratings for T1(Ox) versus T2 is no longer significant in the literal-oriented judgments, which shows that the cancellation of the ironic implicature is equally unacceptable for these two types. The main difference between the mixed (table 2) and the split (humour-sensitive) datasets lies in the comparison between T2 and T1 (significant for the literal-oriented judgements) and between T2 and non-

ironic PCIs (also significant for the literal-oriented judgments). Therefore, in this analysis, the literal-oriented judgments (–humour) now confirm all hypotheses, including H1, which was not corroborated by the presentation of the mixed results.

### 5.3 Test 2

#### 5.3.1 Methods and participants

Seeing as a split in the dataset (+humorous/-humorous ratings) was important for a better understanding of the results of Test 1, it was considered useful to run a follow-up test in which no such split would be required. The design of this second test included the introduction of a new character (similar to the “literal Lucy” character used by Larson et al. 2009) who would be the one to utter the cancellation phrase, biasing towards a literal-oriented interpretation.

The items for this test were identical to those of Test 1, as it regards the first two turns of each dialogue. The difference was that the third turn (including the cancellation phrase for CIs) was uttered by a third character, who had not spoken in the dialogue before and would not be considered to be part of the humorous discourse framework created by the use of irony. This character was introduced at the beginning of the test as someone who is supposed to know the speaker (John) really well, to the extent that she always knows what he means.

(14) Introduction of the “Lucy” character in the test instructions:

*“Lucy is able to overhear all of John’s conversations and, because she knows John quite well, she claims that she always knows what he means. After each dialogue, Lucy comes in and makes a statement about what John meant (sometimes different from what his interlocutor seems to have understood).”*

Below are two examples of the new form of the test items, which correspond to the items of the first test that were presented in (10) and (11):

(15) Context: The radiator is working at full power. Both John and Mary know that.

John: It is really hot in here.

Mary: I will turn off the heating then.

Lucy:

A John wanted Mary to turn off the heating

NA John meant it's cold in there.

CI John didn't mean he wanted Mary to turn off the heating.

(16) Context: John and Mary were planning to go for a walk.

John: It has just started raining! Oh that's going to be a great walk!

Mary: I know, it's too bad we can't have our nice walk anymore.

Lucy:

A John meant that they are not going to enjoy the walk.

NA John didn't mean that it started raining.

CI John really meant that they are going to enjoy the walk.

The test procedure was otherwise the same as in Test 1, except that there was no question about humorous intentions in this one. The test was taken by 30 participants (13 male and 17 female), monolingual native speakers of British English, aged from 20 to 29, of higher education, none of whom was a trained linguist. None of them had participated in the first test. The participants were split into 3 groups, as in the first test, and the procedure of on-line participation was the same as in the first test.

### 5.3.2 Results

The mean ratings for each type and each condition are shown on Table 6:

	Acceptable [A]	Critical [CI]	Unacceptable [NA]
PCI	5.93 (0.8)	2.10 (0.5)	1.29 (0.4)
T1	6.05 (0.7)	1.61 (0.5)	1.34 (0.6)
T2	6.19 (0.5)	1.20 (0.2)	1.78 (1.0)
T1(Ox)	6.25 (0.6)	1.24 (0.3)	1.28 (0.3)

**Table 6 Test 2: Mean ratings of acceptability (and standard deviation)**

As in the previous test, analyses of variance (ANOVA) were conducted for cancellability condition and type [3(A, NA, CI) x 4 (PCI, T1, T2, T1Ox)], treating items and subjects as random factors. These revealed a main effect of cancellability ( $F(2,358) = 2095, p < 0.001$ ,  $F(2,136)=1285.58, p<0.001$ ), an interaction of cancellability and type ( $F(6,1074) = 17.3, p < 0.001$ ,  $F(6,136)=5.31, p<0.001$ ) but only marginal main effect of type in the analysis by subjects ( $F(3,537) = 2.68 p<0.046$ ) and no main effect of type in the analysis by items ( $F(3,68)=1.57, p=0.204$ ). Pairwise t-tests for cancellability in each condition revealed that [CI] ratings were significantly lower than [A] ratings, but not significantly higher than those for [NA]<sup>13</sup>. This last finding (i.e. AC ratings for the CIs being as low as ratings for the NA condition) was specifically driven by non-significant [CI]-[NA] differences in the case of T1 and T1(Ox), whereas there was a (relatively small) significance in the case of T2 and a high significance in the case of PCI (note the small or no significance in the case of all irony types, as opposed to non-ironic implicatures)<sup>14</sup>.

<sup>13</sup> Overall: [A]-[NA]:  $t(71)= 41.45, p<0.001$ ; [CI]-[A] ( $t(71)=37.85, p<0.001$ , [CI]-[NA]:  $t(71)=1.04, p=0.303$ .

<sup>14</sup> [CI]-[NA] comparisons per type: PCI:  $t(17)= 4.52, p= 0.0003$ ; T1:  $t(17)= 0.14, p= 0.1783$ ; T1(Ox):  $t(17)= 0.34, p= 0.7361$ ; T2:  $t(17)= 2.38, p= 0.0294$ .

Pairwise comparisons between each and every type revealed that the only two types that did not show significantly different AC ratings were T1(Ox) and T2 ( $t(179) = 0.615$ ,  $p = 0.5389$ ), which coincides with the finding for the literal-oriented judgments in Test 1. The difference in AC ratings between the rest of the types, notably including T1 versus T2 was highly significant (supporting H1): T1-T2:  $t(179) = 4.123$ ,  $p < 0.0001$ ; T1-PCI:  $t(179) = 4.376$ ,  $p < 0.0001$ ; T1-T1(Ox):  $t(179) = 3.387$ ,  $p = 0.0009$ ; T1(Ox)-PCI:  $t(179) = 7.052$ ,  $p < 0.0001$ ; T2-PCI:  $t(179) = 8.053$ ,  $p < 0.0001$ . Overall, this second test supports H1 (difference between Type1 and Type2) and H3 (the oxymoron strategy being hard to cancel due to co-textual support), but does not corroborate H2, namely that the AC ratings would be similar for the T1 and PCI types.

## 6 Discussion and conclusions

The overview of the ratings by each participant and for each separate item reveals that, as expected, AC ratings were spread across the 7-point scale, with many of the critical items [CI] receiving ratings that were significantly different from those for items in the “acceptable” [A] and “unacceptable” [NA] condition (this was shown for all non-ironic PCIs in both tests). It was also shown, however, that participants gave more extreme (polarised) ratings when the cancellation phrase was uttered by a different character than the original speaker (Test 2), which leads to the following methodological consideration regarding the use of explicit cancellability as a test: participants do not just consider the logical possibility of the speaker having meant something other than the originally derived inference, but also the authority of the utterer of the cancellation phrase with respect to the original utterance (i.e. if the inference is explicitly cancelled by the original speaker, the cancellation is more acceptable/more likely than if it is offered by an external observer – even if she is presented as a seemingly “all-knowing” character).



The empirical tests allowed us to uncover important differences among two different types of irony (including the oxymoron subtype of Type1) and non-ironic implicatures. Type2 ironies exhibited a very strong link to humour, placing the whole discourse (including the cancellation phrase) within a humorous framework. Given this idiosyncrasy, splitting the ratings according to whether or not the cancellation phrase was perceived as humorously intended (and, arguably, non-serious) made an important difference in the results of Test 1: it was only within the literal-oriented ratings that the hypothesised difference between Type1 and Type2 could be clearly observed. Of course, even the very fact that participants resorted to a non-serious reading of the cancellation phrase in order to make sense of it is an indication of how infelicitous the cancellation of Type2 ironies normally is (a testament to the strength of this type of implicature).

Attempting to put the humour factor on the side, the second test introduced a bias towards a serious (literal) interpretation of the cancellation phrase. This allowed for the differences between the two irony types (including the oxymoron subtype, which remained significantly different from every other type in all tests and manipulations) and between ironic and non-ironic implicatures to be demonstrated more clearly (corroborating H1 and H3).

An unexpected finding of Test 2, for which there already was evidence in both the mixed and split results of Test 1, was the difference in cancellability between non-ironic PCIs and Type1 ironies (the latter being harder to cancel), against the predictions of H2. This finding indicates that ironic implicatures are inherently stronger than non-ironic ones, possibly due to the “marked”/rhetorical nature of ironic utterances functioning as an additional element of implicature strength.

Overall, it was shown that speaker intuitions about explicit cancellability can reflect differences among types of implicatures. The test of explicit cancellability is therefore not (merely) an implicature detection tool, but a valid measure for implicature strength, which in

turn is influenced by various factors such as reasoning, contextual information, prior knowledge, co-textual and extralinguistic/paralinguistic cues.

From this point onwards, while further empirical testing is necessary, factors of implicature (inferential) strength can be viewed as a helpful means of categorisation for cases of inferential meaning, cutting across the literal-nonliteral divide and revealing finer distinctions within levels of meaning that had so far been considered rather unified.

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### **Acknowledgments**

Funding for this study was received by the University of Cambridge (test 1) and the University of Kent (test 2). I am grateful to Kasia Jaszczolt and Napoleon Katsos for their feedback on earlier drafts of this paper, as well as to two anonymous reviewers for their insightful comments.