

Implying or implicating *not both* in declaratives and interrogatives

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Utterances imply many things that are not part of what the speaker *means*, i.e., neither asserted nor implicated. The distinction between what is and isn't meant is crucial conceptually but also empirically, but it is often overlooked (Bach, 2006). The present paper highlights the importance of the distinction by solving an empirical puzzle that hinges on it.

1. Puzzle. Disjunction 'or' is well-known to imply 'not both' (at least with contrastive focus on the disjuncts and a final falling contour). This implication is commonly assumed to be part of what is meant for declaratives like (1) – namely an implicature (Geurts, 2011) or a semantic entailment (Chierchia et al., 2012) – but not for interrogatives like (2), where instead it would be presupposed (Aloni and Égré 2010; Biezma and Rawlins 2012, among many). This is shown, e.g., by the licensing of 'yes' and 'no':

- (1) A: John was at the party, or Mary. (L%) \rightsquigarrow *not both* (part of what is meant)
B: Yes, not both. / No, both were there.
- (2) A: Was John at the party, or Mary? (L%) \rightsquigarrow *not both* (not part of what's meant)
B: ? Yes, not both. / ? No, both were there.

The judgments in (1) align with experiments by Destruel et al. (2015) on other types of exhaustivity implicatures; those in (2) with Roelofsen and Farkas 2015 (their (16)).

2. Existing approaches. Two main approaches to exhaustivity exist: pragmatic and grammatical. The predominant pragmatic approach relies on the maxim of Quantity (for an overview see Geurts 2011): the speaker in (1) said 'or' rather than the more informative 'and', so they must think the latter would have been false. To my awareness no explicit account exists of why the resulting implication would be part of what is meant in (1), i.e., an implicature. Moreover, it doesn't seem to extend to the exhaustivity implication in (2), where nothing is *said* (in the Gricean sense: asserted) to which Quantity could apply to begin with. The grammatical approach (e.g., Chierchia et al. 2012) treats exhaustivity instead as a semantic entailment, and as such directly predicts 'not both' to be part of what is meant in (1), as part of the assertion. But it is not clear how it applies to (2), because entailments don't *project* out of interrogativity.

3. Assumptions. This paper pursues a mostly pragmatic approach, although it bypasses the traditional pragmatic account. It relies on a fair number of assumptions from the literature, each however quite minimal, general, and independently motivated:

- A. **QUDs:** The set of all in principle relevant propositions is subdivided into QUDs (questions under discussion), roughly, 'ways of being relevant', of which one or several may be *active*, i.e., to be addressed by an utterance (e.g., Roberts 1996).
- B. **Cooperativity:** A cooperative speaker will share all and only information believed to be true and relevant to some active QUD (essentially Grice 1989).
- C. **Symmetry:** if an active QUD contains a proposition p , then its negation $\neg p$ is also contained in an active QUD (e.g., Chierchia et al. 2012; though not necessarily the *same* QUD, Westera 2017b).
- D. **Table:** Interrogatives serve to introduce a new QUD to the table, while declaratives presuppose a pre-existing QUD (Roberts 1996).
- E. **Possibility:** One who introduces a *new* QUD to the table should consider all its propositions (or 'direct answers') possible (e.g., Roberts 1996).
- F. **Closure:** QUDs are typically closed under conjunction (e.g., Spector 2007), though only as far as E. allows (i.e., the conjunctions must be possible).

G. **Accents:** ‘contrastive’ accents on the disjuncts indicate that each disjunct is contained in an active QUD (e.g., Biezma and Rawlins 2012).

H. **Low boundary tones (L%)** convey that the speaker intended to draw attention to all propositions deemed possible and relevant to an active QUD (Westera 2017a).

Though not new, the full paper reviews their motivations, e.g., that in C. the qualification in parentheses is motivated empirically (Horn, ’89), but also necessary given the ‘symmetry problem’; and that H. is from a more general theory of intonational meaning.

4. Predictions. The foregoing assumptions predict the pattern in (1)/(2) as follows:

- In (1), both disjuncts are relevant (G.), hence so is their conjunction ‘both’ (F.). Since the speaker didn’t mention their conjunction, this must be because it is considered false (H.), explaining the exhaustivity implication ‘not both’. Moreover, since the conjunction is relevant, so is their negation (C.), i.e., the exhaustivity ‘not both’, which must therefore be part of what is meant (B.).
- In (2), both disjuncts are likewise relevant (G.), but now their conjunction ‘both’ cannot be (despite F.). The reason is that the interrogative introduces a new QUD (D.), and to introduce a QUD containing ‘both’ this proposition should be deemed possible (E.), which cannot be the case, because then the speaker would have mentioned it (H.). Moreover, since ‘both’ cannot be relevant, neither can its negation ‘not both’ (C.), i.e., the exhaustivity, which must therefore not be part of what is meant (B.).

More compactly: the exhaustivity ‘not both’ can be part of what is meant only if the ‘both’ proposition was already relevant before, and this can only be the case if the utterance does not itself introduce the QUD. The account entails furthermore that exhaustivity for interrogatives cannot be understood as the exclusion of *relevant* alternatives; rather, it is the exclusion of *irrelevant* alternatives that *would have been relevant* had they been deemed possible (given E.). The account generalizes to other cases of exhaustivity, but only when an assumption is warranted to the effect that the excluded proposition should have been relevant had it been deemed possible (the role played by F. in the case of ‘not both’).

5. Conclusion. The foregoing demonstrates that the pattern in (1)/(2) can be predicted from general, mostly pragmatic assumptions from the literature. It also highlights that explaining an implication and its being part of what is meant are two separate issues, the latter of which has been unduly neglected.

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Acknowledgments: This project has received funding from the European Research Council (ERC) under the European Union’s Horizon 2020 research and innovation programme (grant agreement No 715154). This paper reflects the author’s view only, and the EU is not responsible for any use that may be made of the information it contains.

