# Implying or implicating 'not both' in declaratives and interrogatives

Matthijs Westera Universitat Pompeu Fabra

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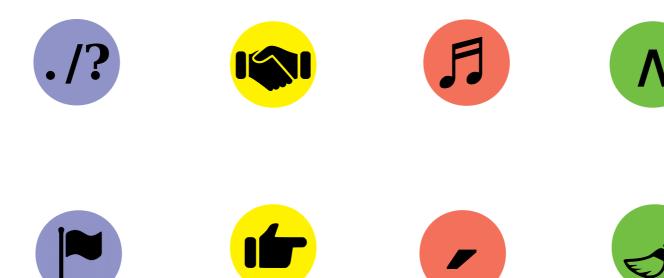
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  - e.g., "No, both." fine in (1), strange in (2). (cf. Destruel et al. '15)
- Not clear how existing accounts may explain this.

# **Ingredients**





Interrogatives normally introduce a new QUD. Declaratives typically address an existing QUD.

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- i.e., set only goals that are potentially achievable.

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 Building on Gazdar '79'; Schulz & Van Rooij '06; Groenendijk & Roelofsen '08; Biezma & Rawlins '12.

Focus marking (e.g., Rooth '92; Beaver & Clark '08):



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#### **Intonational Compliance Marking** (Westera '18):



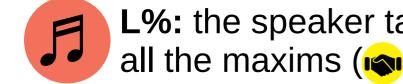
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Expanding previous characterizations: 'completeness', 'finishedness', etc.



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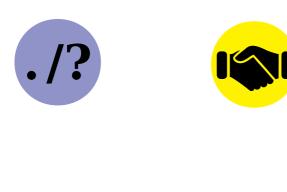
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If p is relevant to some QUD, then  $\neg p$  is also relevant to some QUD.

- Motivation: if a goal is unachievable, say so.
- This is typically not the main point (cf. Horn '89); ¬p is relevant to a secondary QUD (Westera '19).

# Summing up















# Solving the puzzle

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Hence their conjunction 'both' is indeed relevant. (given ./?, this doesn't conflict with (P.)

It follows that the speaker believes 'not both'.



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Since 'not both' is relevant and believed to be true, 'not both' must be part of what is meant in (1).



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Hence, although 'not both' is considered true, since it isn't relevant it *cannot* be part of what is meant in (2).

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- For interrogatives, exhaustivity is **the exclusion of** *irrelevant* **alternatives** that *would have been relevant* had they been considered possible.
  - And since these are irrelevant, so is their exclusion.
- And the reason for this difference is that *interrogatives* introduce new QUDs.

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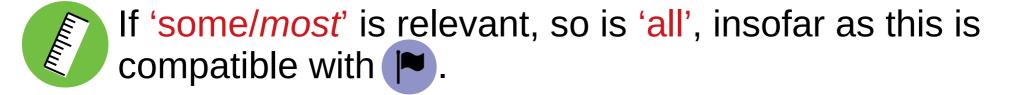
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- Other challenges too (Schulz & Van Rooij '06, Chierchia et al. '12, Fox '14, Westera '17).

Grammatical approach (e.g., Chierchia et al. '12):

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• Explore the interactions of general pragmatic principles before trying anything else.

# References (1/2)

- Aloni, M. & Égré, P. (2010). Alternative questions and knowledge attributions.
   Phil.Q. 60.
- Bach, K. (2006). The top 10 misconceptions about implicature. In Drawing the boundaries of meaning. Benjamins.
- Bartels, C. (1999). The intonation of English statements and questions. Routledge.
- Beaver, D. and B. Clark (2009). Sense and Sensitivity. Explorations in Semantics 12. Wiley.
- Biezma, M. & Rawlins, K. (2012). Responding to alternative and polar questions. L&P35.
- Chierchia, G., Fox, D., & Spector, B. (2012). The grammatical view of scalar implicatures [..]. Semantics: An International Handbook of NLM 2. Mouton de Gruyter.
- Destruel, E., Velleman, D., et al. (2015). A cross-linguistic study of the non-atissueness of exhaustive inferences. Exp. Persp. on Presup. Springer.
- Farkas, D. & Bruce, K. (2010). On reacting to assertions and polar questions. JoS 27.
- Fox, D. (2014). Cancelling the Maxim of Quantity: Another challenge [...]. SemPrag 7.
- Geurts (2010). Quantity Implicatures. Cambridge University Press.
- Geurts (2013). A plea for covert operations. In Festschrift for GSV. ILLC.

# References (2/2)

- Grice (1975). Logic and conversation. Syntax & Semantics 3. Elsevier.
- Groenendijk, J. & F. Roelofsen (2009). Inquisitive Semantics and Pragmatics. WLCRA, Stanford.
- Horn, L. R. (1989). A Natural History of Negation. UCP.
- Poortman (2016). Concepts and Plural Predication. Utrecht dissertation.
- Roberts, C. (1996). Information structure in discourse. OSU WP in Ling 49.
- Roelofsen, F. & Farkas, D. (2015). Polarity particle responses as a window onto the interpretation of questions and assertions. Lang. 91.
- Rooth (1992). A theory of focus interpretation. NLS 1.
- Schulz, K. & Van Rooij, R. (2006). Pragmatic meaning and non-monotonic reasoning. L&P 29.
- Westera, M. (2017). Exhaustivity and intonation: A unified theory. Amsterdam dissertation.
- Westera, M. (2017b). QUDs, brevity, and the asymmetry of alternatives. Amsterdam Colloquium.
- Westera, M. (2018). Rising declaratives of the Quality-suspending kind.
   Glossa.
- Westera, M. (2019). Rise-fall-rise as a marker of secondary QUDs. In Gutzmann & Turgay (eds.), Secondary content. Leiden: Brill.
- Westera, M. (ms). Hurford disjunctions: an in-depth comparison [...]

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