



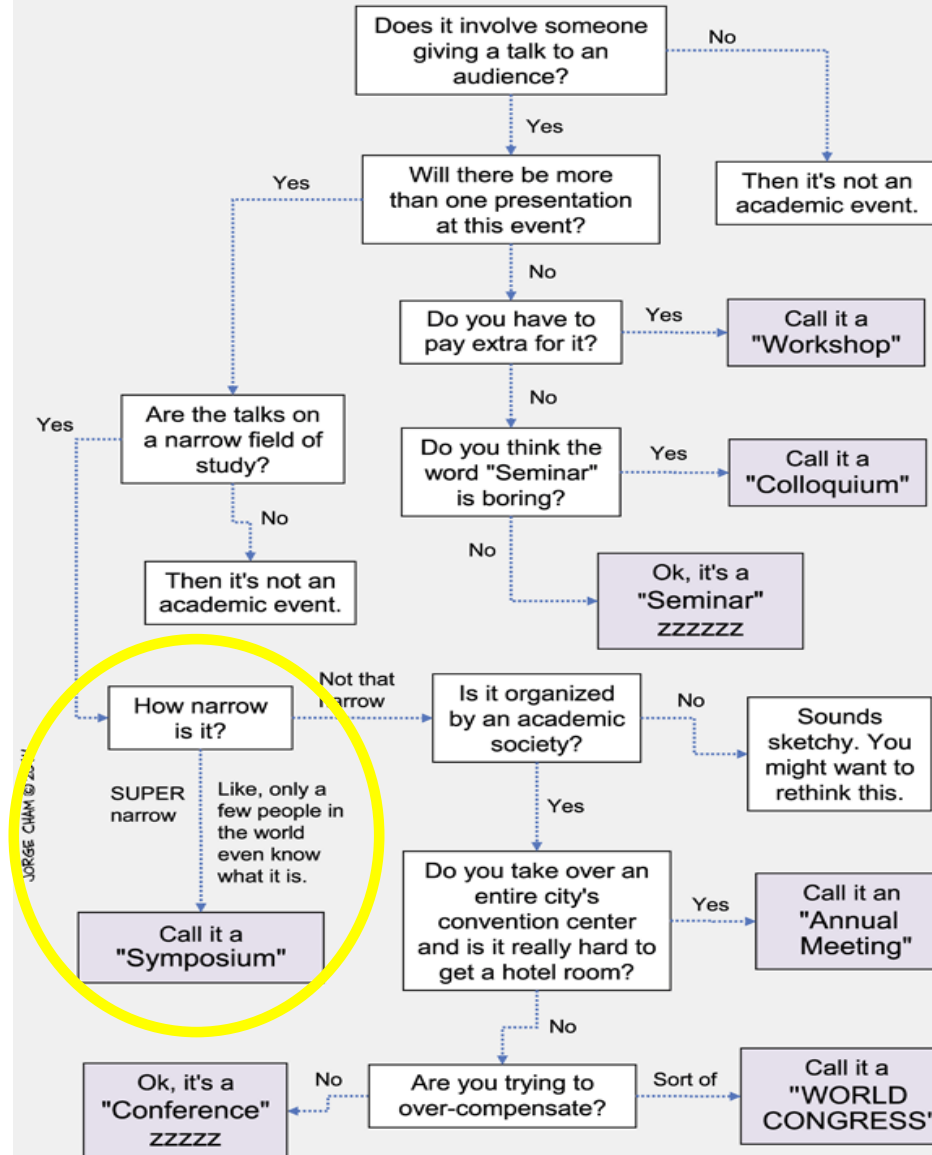
Quantity Expressions as a Cue to Context

Chris Cummins

c.r.cummins@gmail.com

Linguistics and English Language, University of Edinburgh

What to call your Academic Event:



Relevance structure

- What alternative propositions are relevant to the discourse purpose, at a given point?
- Not, for instance, one that's mutually known
- Nor one that's manifestly unrelated to what's going on, although this would still be somehow informative
 - $q = \text{"Port Vila is the capital of Vanuatu"}$
- So I can yoke this to a relevant proposition
 - $p = \text{"The dog painted the circle"}$
- $(p \ \& \ q)$ then more informative than p , but no more relevant

Implicatures and relevance structure

- This generally explains why the assertion of p doesn't generally implicate $\text{not-}q$ for a lot of unrelated q
 - Speaker of p doesn't decline to say " p and q " because of their epistemic state w.r.t. q , just because it's irrelevant
 - So asserting q wouldn't, in any case, give rise to "cognitive effects"
- Of course, given the right relevance conditions, p can implicate $\text{not-}q$ (or similar) for just about any unrelated q
 - "Am I right in thinking that the dog painted the circle and Port Vila is the capital of Vanuatu?"

SIs: a more complex setup

- Cases where q entails p
 - Classic setup for scalar implicature, assuming that p and q are equally lexicalised (effectively, equal in effort to assert)
- SIs seem to disappear when q is not relevant to the discourse purpose
 - Breheny et al. (2006): “or”, “some”
 - If the weaker proposition satisfies the discourse purpose, no evidence of implicatures concerning the stronger one
 - *“Mary was surprised to see John cleaning his apartment and she asked the reason why. John replied that he intended to host some of his relatives. The rest would stay in a nearby hotel.”*
 - But why? The stronger proposition would also do the job, and by hypothesis it’s not any harder to use...

Grounds for loss of SI

- Perhaps the stronger expression is disfavoured because it's an unnecessary commitment
 - But then we should get an implicature to the effect that the speaker is unwilling to commit to the stronger proposition
- Perhaps, in RT terms, the stronger expression gives us no extra cognitive effects and is therefore disfavoured despite its negligible costs
 - But I think this is problematic, and will try to explain why with reference to numerical expressions

Implicatures from numerical expressions

- “more than 60” +> “not more than 80”
 - A: This case holds CDs. How many CDs do you have?
B: I have more than 60 CDs.
- But this is less available in the event of prior mention
 - A: This case holds 60 CDs. How many CDs do you have?
B: I have more than 60 CDs.
- Natural to treat this in terms of QUD
 - First example: QUD is “how many”; speaker has free choice among a wide range of linguistic expressions, and the choice can convey an implicature
 - Second example: QUD is “whether more than 60”; speaker is naturally understood to be answering this in the affirmative (and hence that this case is not suitable); once answered, no enrichment

QUD stack?

- QUDs don't occur singly, in Roberts's conception of them
 - Part of a stack of questions that must be answered in order for discourse success to be achieved
- Even if the current QUD is “whether more than 60”, may be reasonable to expect “how many” to be in the stack
 - Failure to answer the “how many” question could give rise to an unnecessarily protracted exchange...
 - Response “more than 80” (say) would have dealt with both
 - So, purely in QUD terms, the rationale for giving a minimally informative answer is not clear in this case
 - Possible explanation: “more than 60” is somehow a better answer to the current QUD than “more than 80” would be, because it bypasses an (admittedly trivial) reasoning step

Inferring context

- Taking QUD to be a proxy for context...
- QUD can be inferred on the basis of 2 types of information
 - Top-down knowledge of the interlocutors' discourse goals, and how they could achieve these (plan construction)
 - Bottom-up knowledge of what's actually being asked and, assuming cooperativity, answered in the current discourse
- A discourse turn can change our understanding of the QUD
 - A: What time is it?
B: It's not 10:30 yet.
- This in turn seems to change our pragmatic interpretation
 - B is answering a polar question – no implicature?

Examples, imagined and real

- By analogy, we might expect the use of a weak scalar, like “some”, to convey that “whether some” is the QUD
- Something similar can certainly happen with numbers
 - “There are two ways Obama gets more than 269 electoral votes...”
- How general is this?
 - In particular, does it extend to cases like “John has more than two children”, which fail to give rise to an implicature?
 - In these cases, we can continue “...in fact he has five”
 - But there seems to be a consensus that this utterance belongs in an environment where “whether more than two” is the QUD
 - That would give us a convenient account of why the unwanted implicature goes away

Pilot study

- Using materials drawn from BNC
- 31 MTurk participants asked to respond to four questions, each on a 5-point Likert scale
 - *...more than 60...*
 1. In the speaker's opinion, the actual number of [X] is less than 80
 2. The speaker said "more than 60" because that was the most informative statement possible.
 3. The speaker said "more than 60" because that was a convenient approximation.
 4. The speaker said "more than 60" because the specific number 60 was important for some reason.

Results

- Overall, strong negative correlation between responses to Q1 and Q4, analysed by item ($r = -0.67$)

	Q1	Q2	Q3	Q4
More than				
Round numbers	3.46	3.44	4.08	2.98
Non-round numbers	3.63	3.68	3.29	3.11
Small numbers	2.02	3.43	3.29	3.58
At least				
Round numbers	3.37	3.68	3.90	3.10
Non-round numbers	3.27	3.87	3.21	3.27

- Perceived relevance of the number correlates with implicature suppression
- Small numbers judged likely to be important
- This could be causing the loss of implicature (although a third-factor explanation is still tenable)

Methodological implications

- Assumed that participants infer contexts when presented with decontextualized utterances
 - This might influence the interpretation
 - Justification for this: maximally neutral context – but this is potentially a slippery notion
- Returning to “John has more than two children”:
 - Might ask e.g. “Is <more than two, more than three> a Horn scale?”
 - However, when presented in a neutral context, this could still get interpreted against a context in which the QUD is “whether more than two” (not neutral in the sense that we want)
 - If so, judgments wouldn’t bear upon the research question very transparently

Speculative concluding remark

- This discussion suggests that the use of a weak scalar W suggests that the QUD might be “whether W ”
 - Given this QUD, we would expect the implicature “not- S ”, for a strong scalemate S , not to be available
- At the same time, the use of a weak scalar W evokes the alternative proposition with S (by hypothesis)
 - This should give rise to the competing possibility that the implicature not- S is available
- If so, how can we estimate the strength of a SI trigger (assuming we mean ‘in a neutral context’)?