

Priming and QUD versus implicatures

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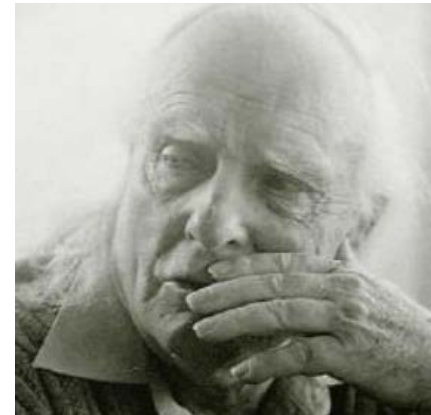
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Universität Bielefeld, SFB 673: Alignment in Communication

Quantity implicatures

- Additional information that is conveyed alongside the declarative content of an utterance
 - Usually to the effect that a related stronger statement would have been false
- Can be analysed as arising from flouting Grice's (1989) first submaxim of quantity:

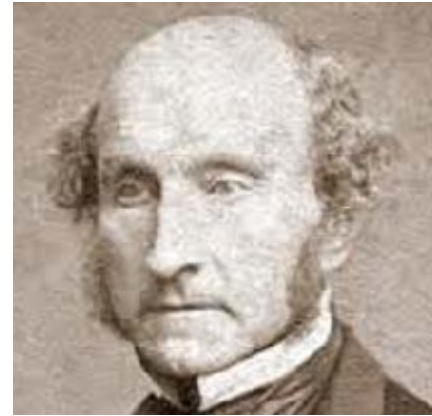
“Make your contribution as informative as is required for the current purposes of the exchange”



Early (and prototypical) example

John Stuart Mill (1865: 442)

“If I say to any one, ‘I saw some of your children to-day’, he might be justified in inferring that I did not see them all, not because the words mean it, but because, if I had seen them all, it is most likely that I should have said so: though even this cannot be presumed unless it is presupposed that I must have known whether the children I saw were all or not.”



Why?

- Hearer could reason as follows
 - Speaker said “...some...”
 - Speaker could instead have said “...all...”, which would have been more informative (entailing the existential “...some...”)
 - Thus (*under some important assumptions*) the stronger statement with “...all...” must not be true
- Hence “some” **implicates** “not all”:
 - It conveys the additional meaning in some way
 - The additional meaning is context-dependent
 - The additional meaning is coherently deniable by the speaker, etc.
 - “Some” and “all” argued to form a scale (but that’s not crucial here)

The hearer's necessary assumptions

- Certain conditions have to be met for the hearer's reasoning (two slides ago) to be logical
 - The speaker must be (presumed to be) knowledgeable about the stronger proposition (otherwise can only get a 'weak implicature')
 - There must be some reason why the speaker might have stated the stronger proposition
 - Uttering p does not normally implicate the falsity of just any alternative q , even though the speaker could have said " $p \ \& \ q$ "
 - The alternative has to be **relevant** (whatever that means...)
 - It must be possible for the speaker to make the stronger statement
 - The language must have the necessary resources
 - The stronger statement must have been socially permissible

Hearers' flexibility

- Hearers apparently take all this into account, rapidly and online:
 - Breheny, Katsos & Williams (2006): Implicatures reduced when the stronger alternative is irrelevant
 - Bonnefon, Feeney & Villejoubert (2009): Implicatures reduced when the stronger alternative is face-threatening
 - Antoniou, Cummins & Katsos (under review): Implicatures reduced when the speaker is presumed ignorant of the stronger statement
- Useful for communication; tricky if we're interested in the 'preferred/default interpretations' of scalar terms

Shifting focus to the speaker

- Hearer should (and do) recover implicatures iff the speaker intends to convey them
 - Fundamental to communication, if we construe this as involving alignment of situation models
- Thus it could make sense to look at the speaker too
 - Why is a particular expression selected?
 - What are the pragmatic consequences of that choice?
- This contrasts with most experimental work in the area
 - Focusing on interpretation of artificially-constructed stimuli
 - Excellent control but debatable naturalness

Numerically-quantified expressions

- Expressions containing “more than 100”, “at least 3”, “not more than 10”, and so on
- Traditionally assumed to have the obvious mathematical semantics (e.g. “ >100 ”, “ ≥ 3 ”, “ ≤ 10 ”, etc.)
- If so, rich entailment relations: many options for a speaker
 - e.g. if “more than 50” is true, so is “more than 49/48/47...”
- Non-trivial choice to be made
 - “London has more than 8 million inhabitants” is under-informative
 - But “London has more than 1000 inhabitants” is actively odd

Implications of the apparent restriction

- Use of “more than n” seems typically to be restricted in distribution on pragmatic grounds
 - A flexible hearer could take advantage and restrict the meaning
 - Enrichments should be available for “more than/fewer than n”, etc.
- Contradicts with existing claims in the literature
 - Fox & Hackl (2006) argue against these implicatures on introspective and philosophical grounds
 - Latter argument makes particular reference to small cardinalities

Inferences from comparative quantifiers

- Tested experimentally (Cummins, Sauerland & Solt 2012)
- Idea: “more than 70” should implicate “not more than 80”, and similarly for other round numbers
 - “More than 71” would be more informative, in this example
 - But round numbers widely agreed to be easier to process
 - Assertion of “more than 70” might just mean that the speaker chose the ‘low-effort’ option
 - However, “more than 80” would be just as good in terms of roundness, as well as more informative
 - Hence, “more than 70” should implicate “not more than 80”, and in general implicatures about the next round number should work

Experiment

Information:

A newspaper reported the following.

“[Numerical expression] people attended the public meeting about the new highway construction project.”

Question:

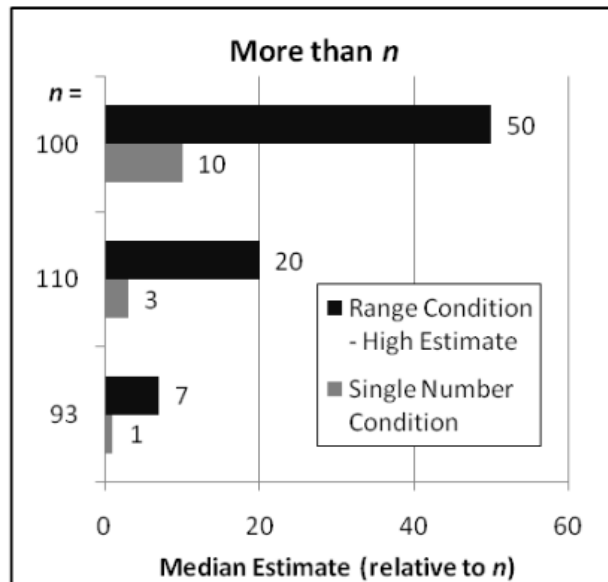
Based on reading this, how many people do you think attended the meeting?

Between _____ and _____ people attended.

_____ people attended.

Results

- Evidence of pragmatic upper bounds
 - Some participants explicitly reported that they assumed that a stronger statement would have been used if it were true



Fielded on MTurk, $n=100$ per condition (separate days)

Relation to discourse

- In these examples, the “speaker” has free rein
- However, we would expect that
 - Under certain discourse conditions, the speaker should be biased towards using a particular expression rather than an alternative
 - If the hearer is aware of this, they should modulate their inferences accordingly
 - If the speaker uses a weaker expression for discourse reasons, the stronger alternative could still be true
 - In this case, no implicature should be available

Second experiment

Please read the following short dialogues, and answer the questions by filling in a value for each blank space, according to your opinion. Consider each dialogue separately. Assume that participant B is well-informed, telling the truth, and being co-operative in each case.

Primed

A: We need to sell 60 tickets to cover our costs. How are the ticket sales going?

B: So far, we've sold fewer than 60 tickets.

How many tickets have been sold? From to, most likely

Unprimed

A: We need to sell tickets to cover our costs. How are the ticket sales going?

B: So far, we've sold fewer than 60 tickets.

How many tickets have been sold? From to, most likely

Second experiment

Please read the following short dialogues, and answer the questions by filling in a value for each blank space, according to your opinion. Consider each dialogue separately. Assume that participant B is well-informed, telling the truth, and being co-operative in each case.

Primed

A: We need to sell 60 tickets **Significantly weaker pragmatic bounds in the primed condition** going?

B: So far, we've sold fewer than 60 tickets.

How many tickets have been sold? From to, most likely

Unprimed

A: We need to sell tickets to cover our costs. How are the ticket sales going?

B: So far, we've sold fewer than 60 tickets.

How many tickets have been sold? From to, most likely

Priming? Or something else?

- Prediction about the effect of re-use was motivated by appeal to the notion of priming
- However, prior mentions were all 'relevant' mentions
 - Hence bringing in notions such as Question Under Discussion
 - We need to sell n tickets to break even.*
 - We've already sold more than n tickets.*
- Answer could render stronger statements unnecessary, or even counterproductive
 - Hearer would then be predicted to suppress implicatures
- Could investigate by manipulating priming, QUD, and perhaps usefulness of stronger statements...

Presupposition projection

- Active research question in sem/prag: how do we explain the variable projection behaviour of presuppositions?
- Contrast
 - John didn't find out that Clare was ill* with
 - John didn't find out that Clare was ill, because she wasn't*
- Presupposition triggers such as 'find out' can introduce new information, but sometimes that's suppressed
- Again we can ask: why does the speaker use a trigger?
 - If there's a contextual justification, such as priming, we should expect the presupposition not to project to the discourse level
 - If not, it should project
 - Can we model the speaker's choice in a similar fashion?

General account of reuse?

- If ‘priming’ as such does have pragmatic consequences, these might relate to the treatment of ‘metalinguistic’ use
 - Notably “metalinguistic negation”
 - Is there a clear boundary between priming and metalinguistic use? Or is the latter just treated as belonging to the end of this continuum?

Thank you!

References

Bonnefon, J. F., Feeney, A., and Villejoubert, G. (2009). When some is actually all: Scalar inferences in face-threatening contexts. *Cognition*, 112: 249-58.

Breheny, R., Katsos, N., and Williams, J. (2006). Are scalar implicatures generated by default? *Cognition*, 100: 434-63.

Cummins, C., Sauerland, U., and Solt, S. (2012). Granularity and scalar implicature in numerical expressions. *Linguistics and Philosophy*, 35: 135-69.

Fox, D. and Hackl, M. (2006). The universal density of measurement. *Linguistics and Philosophy*, 29: 537-86.

Grice, H. P. (1989). *Studies in the Way of Words*. Cambridge, MA: Harvard University Press