AMPRA 2016, Panel:
Experimental approaches to typologies of meaning

More things that look like implicatures

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Implicatures

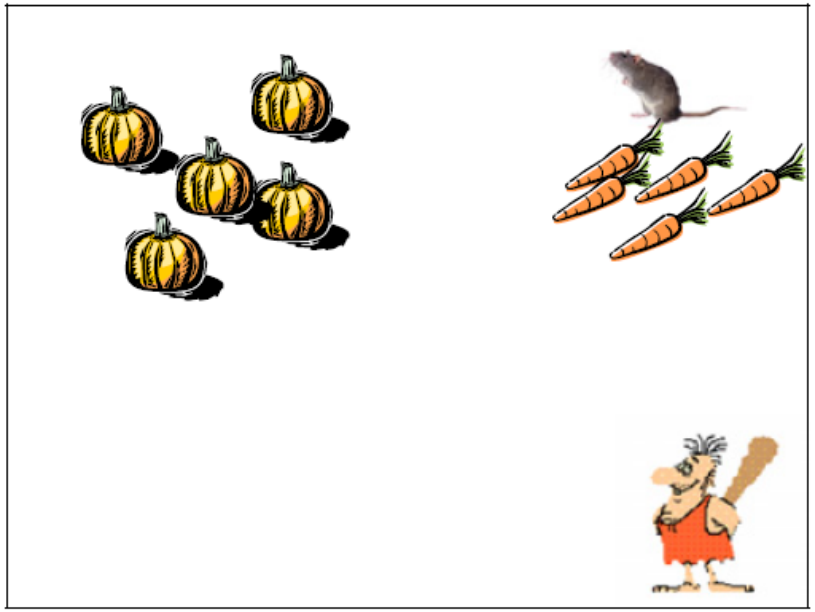
- Locus of much experimental work over (now) many years
  - Perhaps because the questions turn out to be harder to investigate empirically than people originally supposed
- Example: scalar implicatures – default or contextual?
- Standard recipe for testing
  - Assume that default (or grammatical) procedures are quick, while contextually-driven reasoning takes additional time
  - (This idea appears to motivate Levinson's (2000) account, although it's arguably not hardcoded into that account as it stands)
  - Operationalise this by testing whether responses reflective of pragmatic enrichments are slower or faster than responses that do not involve pragmatic enrichments

Is that really what we get?

- Experimental results tend to support the contextual account – enriched readings usually slower
- However, in these paradigms, participants are usually forced to make a choice, and are often split
  - e.g. Noveck (2001): 60/40 split on "*Some elephants have trunks*"
- We'd like to interpret that as diagnostic of whether or not participants draw implicatures
  - Certainly if we're going to compare the "do" and "don't" groups directly in terms of response time, but more generally if we think the responses are meaningful guides to participants' reasoning
  - But not drawing implicatures, in some of these cases, would look like a pragmatic deficiency, odd in a neurotypical sample

Alternative explanation

- Pragmatic tolerance (Katsos and Bishop 2011)
  - Adults (and children) notice underinformativeness but don't consider it sufficient grounds to reject the utterance
  - e.g. "*The mouse picked up some of the carrots*"

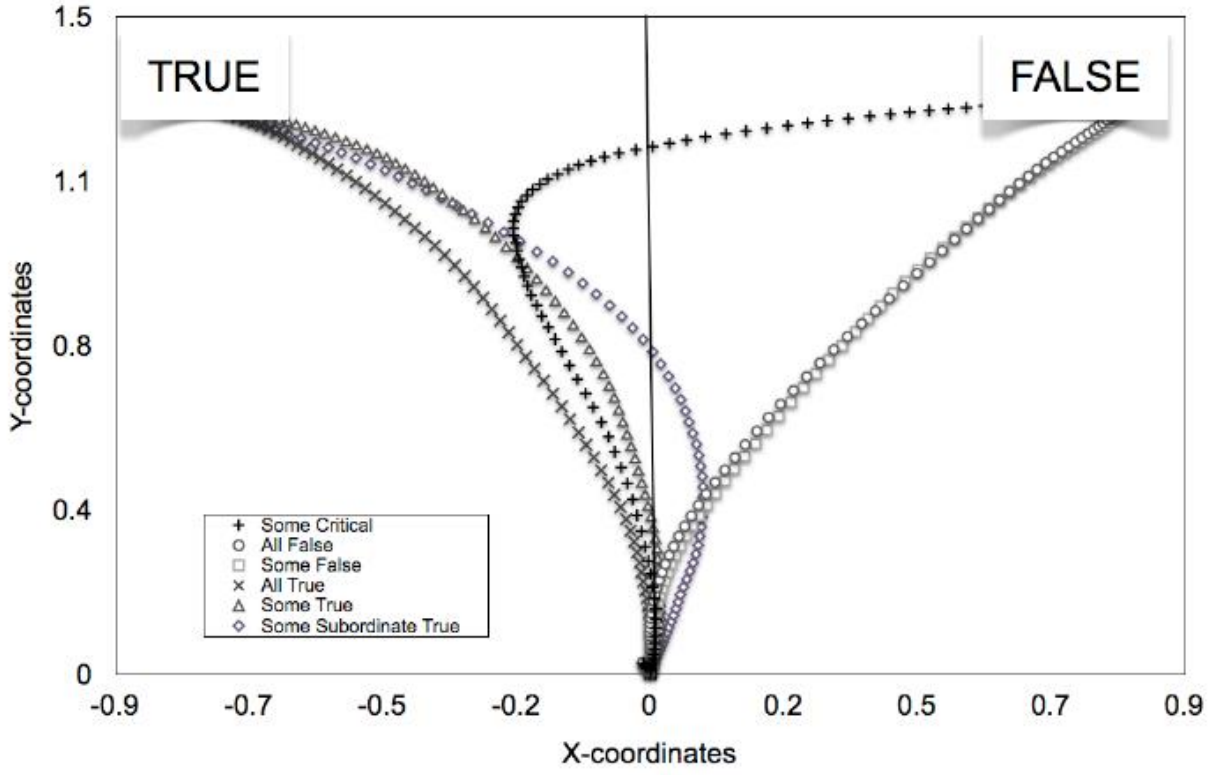


Alternative explanation

- Pragmatic tolerance (Katsos and Bishop 2011)
  - Adults (and children) notice underinformativeness but don't consider it sufficient grounds to reject the utterance
- Possible that participants all entertain the implicature reading, but are split on whether to use it…
  - Then studies of time-course wouldn't necessarily be charting the emergence of one or other reading, but how the extent to which it is preferred as a basis for the judgement evolves over time

As in mouse-tracking

- Tomlinson, Bailey and Bott (2013): mouse-tracking evidence for two-step implicature generation



Differences in ultimate reading

- Time-course tricky, so difference in actual interpretation would be better -> study of "embedded implicatures"
  - *You must hear some (but not all?) of the Verdi operas*

    => You are not permitted to hear them all
  - *All the students heard some (but not all?) of the Verdi operas*

    => None of the students heard all of them
  - This latter conclusion endorsed by 27% of respondents in Geurts and Pouscoulous (2009)

Explaining these data

- Fiercely-contested debate has ensued
- Prediction from Chierchia that these upper-bound construals occur freely in embedded positions
  - Actually they seem rather inconsistent and, for some embeddings, tenuous ("must…some" !+> "must…(not all)")
- Prediction from Gricean account that these construals shouldn't be available
  - At least, not when they don't involve the negation of a stronger alternative, as for classic quantity implicatures
  - *All of the students heard some of Verdi's operas* +> *It is not the case that "all of the students heard all of them"* – but this is weaker than the sometimes-attested interpretation

Possibilities

- Local enrichments of weak scalars, from one source or another
  - e.g. in Chemla, Cummins and Singh (2015), participants are trained to interpret *some* as "some but not all" in situ
- Reasoning from additional premises
- Typicality effects

Additional premises

- In the case of "*All of the students heard some of the operas*", several possibilities for auxiliary premises
  - Most obvious perhaps ~ "All the students heard (approximately) the same number of operas"
  - Then the global implicature "Not all of the students heard all of the operas" gives rise to the inference that (probably) none of them did

Typicality?

- "All of the students heard some of the operas" covers an enormous range of distinct possible states of affairs

	1	2	3	4	5	6	7	8	9	10
Student 1	✔	✔	✔	✔	✔	✔	✔	✔	✖	✖
Student 2	✔	✔	✔	✔	✔	✔	✔	✔	✖	✖
Student 3	✔	✔	✔	✔	✔	✔	✔	✔	✖	✖
Student 4	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖
Student 5	✔	✔	✔	✔	✔	✔	✔	✖	✖	✖
Student 6	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖
Student 7	✔	✔	✔	✔	✔	✔	✖	✖	✖	✖
Student 8	✔	✔	✖	✖	✖	✖	✖	✖	✖	✖
Student 9	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
Student 10	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖

Typicality?

- "All of the students heard some of the operas" covers an enormous range of distinct possible states of affairs
- Under some reasonable assumptions, it's quite likely that the majority of such states of affairs involve no students hearing all of the operas
  - Verdi, for instance, has a "long tail": *Rigoletto*, *La Traviata*, *Il Trovatore*, *Nabucco*, *Aïda*, …, …, *Un Ballo in Maschera*, *Stiffelio*, *I Lombardi alla prima crociata*, …

What kind of meanings?

- These do not appear to be “local implicatures” in anything like the traditional sense of the word
- Notably, what is the speaker’s communicative intention in these cases? Did they mean to convey “not all”?
  - Most experimental work on the topic doesn’t seem to tap this: just tests whether participants draw certain inferences about what is the case in the world (assuming a truthful speaker)

"Additional premise" case

- Not clear why the hearer would assume the extra premise
- Commonplace of Gricean account that we do this sometimes, e.g. for the "epistemic step"
  - Speaker assumed to be knowledgeable in cases such as "I ate some of the cakes", but (as Mill noted in the 19th century) not necessarily in cases such as "I saw some of your children today"
  - In the opera example, it's plausible but not certain that the speaker would have knowledge about the stronger proposition
- But irrespective of what the speaker thinks, the hearer is entitled to take a position on whether "all" is likely
  - "…all of Verdi's operas" less likely than "…all of Beethoven's symphonies", "…all of Austen's novels", etc.

A clue, but not an implicature

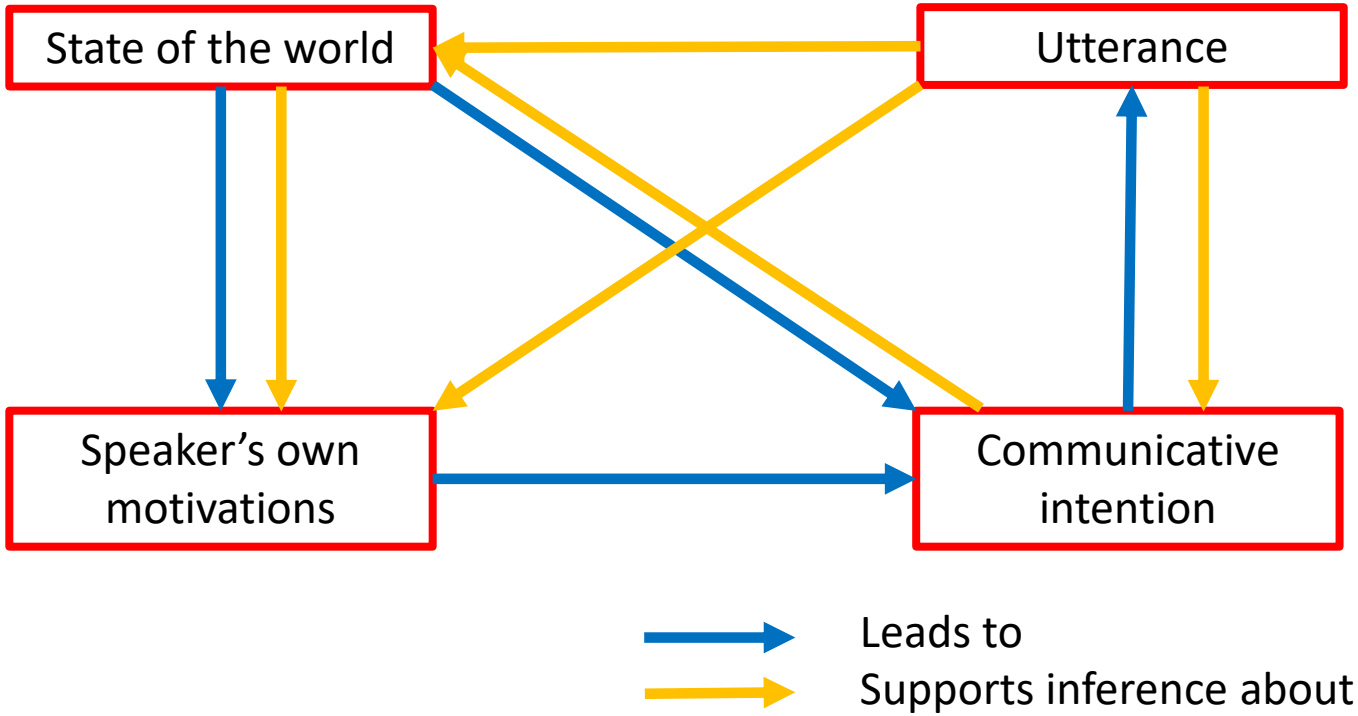
- The utterance might tell us something about the likelihood of some appropriate auxiliary premise being true
  - (other than that the speaker knows it to be false, or doesn't know it to be true, as in the classic implicature case)
  - For instance, does "All of the students…" – as opposed to "Each…" – suggest more homogeneity?
  - Empirical question, but not one that seems to have commanded much attention (getting into areas of reasoning)

Similarly, for typicality effects

- Might think of an expression as having been chosen by the speaker just as the best fit to the known facts
- Our inference may be that certain other circumstances would have been better rendered in other words
  - But again that's not really reducible to implicature, although it has points in common

General issue

- How do we separate "communicative intention" etc. from all the other things going on?



One idea: QUD

- Question Under Discussion related both to the broader context of utterance and the specific material uttered
  - Something that must be answered to achieve interaction goals
  - Something that is signalled by the utterances produced
- Correspondingly, QUD is at once
  - relevant to whether implicatures arise (cf. Breheny et al. 2006)
  - associated with particular states of affairs in the world
- So for instance
  - "All of the students heard some of Verdi's operas" might suggest a QUD such as "How many of V's operas did all of the students hear?"
  - If so, this suggests a context in which this QUD makes sense…for instance, one in which the students' experience is homogeneous

Tasks of the hearer

- Use their understanding of the QUD to accurately capture the speaker's communicative intention
- Refine their understanding of the QUD to take account of the prevailing circumstances
- Where possible, use knowledge about the QUD to divine additional information about those circumstances

- If present in pragmatic experiments, even in the periphery, we really need to understand these effects better