Joint inference about pragmatically-relevant contextual features

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In traditional approaches to pragmatics, inferences are taken to be underpinned by rich assumptions about the speaker and the context of utterance. For instance, on a Gricean account, quantity implicature (e.g. interpreting *some* as also conveying 'not all') depends on the stronger alternative being relevant to the current conversational needs, and the speaker being knowledgeable about the stronger proposition as well as broadly cooperative (in the sense of adhering to the Cooperative Principle; Grice 1989). Experimental work has documented how the availability of quantity implicature is modulated by these factors (Breheny et al. 2006; Goodman and Stuhlmüller 2013), in addition to other considerations such as whether the stronger proposition would be impolite or face-threatening to assert (Bonnefon et al. 2009).

However, while experimental research has typically proceeded by manipulating the above factors and exploring the effect on pragmatic inference, real-life interaction is more complicated: hearers typically lack prior information about the speaker's knowledge state, cooperativity, and so on. Rather, the content of the utterance may itself inform the hearer's understanding of these factors; and their understanding of these factors rationally should inform their pragmatic interpretation of the utterance.

On this view, rational pragmatic interpretation involves joint inference about the state of the speaker and of relevant contextual features as well as the state of the world given the utterance. Some progress has been made in examining joint inference processes in pragmatics (e.g. Kao et al. 2014 on identifying non-literal intention), but we argue that such processes are much more widespread and consequential than is typically acknowledged. Crucially, hearers typically lack certainty about multiple factors which bear on the speaker's utterance choice, in which case truly rational pragmatic interpretation involves evaluating an array of competing explanations for the utterance, and theories have yet to specify how a hearer might do this. Moreover, most research in this area has proceeded under the assumption that the speaker is fully cooperative, which is in practice atypical of human interaction and has been argued not to be essential for rich pragmatic inference (Asher and Lascarides 2013).

In this presentation, we outline a model of pragmatic joint inference which can encompass the full range of relevant factors, treating them as variables about which hearers have probabilistic beliefs which may receive Bayesian updates. We briefly discuss how this model allows us to draw new insights from existing experimental data in three domains: scalar diversity in quantity implicature (van Tiel et al. 2016), reference assignment for ambiguous singular 'they' (Arnold et al. 2021), and modified numerical expressions (Hesse and Benz 2020). In each case, we will argue that inferences about the speaker's knowledge state, cooperativity, and social disposition can and do bear upon interpretation.

We conclude by briefly discussing how specific novel predictions can be drawn from such a model and tested empirically, and how this could help us evaluate claims about the architecture of human pragmatic processing and the extent of rationality in pragmatic interpretation.

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