

Probabilistic Models of Question and Answer Choices

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To be able to answer a question adequately, e.g., by providing more than a literal answer, we often need to know why it was asked. I present a probabilistic model of the choice of questions and answers against the background of a practical decision problem which captures probabilistic inference of a questioner's beliefs and preferences in order to inform the respondent's choice of answer. The model is a non-trivial extension of so-called Rational Speech Act models, which formulate pragmatic language production and interpretation as guided by recursive strategic reasoning about the interlocutor's mental states. I show that grounding "literal respondent" behavior in the concept of a 'safe answer' yields an empirically adequate model of preference-dependent question choice, which in turn also explains key patterns of over-informative answers.