

Title: Topic Preference Detection: A novel approach to understand perspective-taking in conversation

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Abstract: Although most humans engage in conversations constantly throughout their lives, conversational mistakes are commonplace—interacting with others is difficult, and conversation requires quick, relentless perspective-taking and decision making. For example: during every turn of every conversation, people must decide: Should we stay on this topic or switch to another one? In this paper, we introduce topic preference detection—accurately predicting a conversation partner’s topic preferences (i.e., what they want to talk about)—as a novel approach to evaluate perspective taking. Across synchronous and asynchronous conversations between people in close relationships and among strangers, we find that people want to accommodate their partner's topic preferences in conversation. However, they routinely fall short in learning what other people prefer, compared to benchmark models that rely on natural language processing algorithms to detect topic preferences from people's conversational behavior. Even after a ten-minute face-to-face conversation, people were still missing important cues to their partner's topic interest. Compared to earlier perspective-taking paradigms, our work suggests that topic preference detection captures many naturalistic elements of perspective taking, and demonstrates that conversation can fail to produce mutual understanding, even when people want to accommodate each other’s preferences.

Keywords: Conversation; Perspective-Taking; Natural Language Processing; Decision-Making