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Adapting to the Unfamiliar: Communicative Adjustments in Human-Robot Interaction (HRI)

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Abstract

Audience design, the ability to tailor communication to an interlocutor's perceived competence and conversational behavior, is a fundamental cognitive process shaping communicative interactions. Robots provide a unique context in which speakers must establish communication strategies with minimal prior experience with their interlocutor, making HRI an effective tool for exploring audience design. This study examines whether people adapt their communication differently when addressing a robot versus a human and how prior conversational success influences these adaptations. In a word-guessing game, participants described word meanings to an audience, who maintained a 50% accuracy rate across randomly ordered correct and incorrect trials. They played one round with each audience separately. We analyzed adaptations in participants' description strategies (e.g., definitions, semantic categories) and lexical choices (e.g., specificity, word frequency). Findings indicate that adaptation unfolds dynamically over time, shaped by accumulating conversational experience rather than fixed patterns. This study refines theories of language adaptation across diverse audiences and highlights implications for social cognition.