

“Can I Call You Fido?”: Exploring Affect in Human Robot Communication in a Collaborative Environment

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Demand for intelligent and autonomous systems is on the rise in both the Army and greater society. As a result, research to develop capable systems is crucial. A huge part of how humans express and interpret information is linguistic, and replication of these innate faculties is a challenge in artificial intelligence. While research relevant to this challenge is ongoing, our work seeks to address the under-examined area of sociolinguistic interaction with robots and its effects on performance in human-robot teaming tasks. Within a Wizard of Oz experimental design, audio recordings were collected for 10 participants using spoken language in a collaborative search and navigation task with a robot teammate. Counts of lexical patterns of social behavior were performed, as measures of paralinguistic indicators of affectual states, and compared to performance on the task. Results suggest a possible relationship between personal modes of address and performance, indicating a potential benefit from positive social interaction with a robot teammate. Moving forward, we will collect data from more participants and perform additional analyses, including employing other affect measures (prosody, intonation, etc.), examining other outcome variables (trust, perception, etc.), and controlling for more covariates (such as spatial ability) to further refine the results.

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