The Effect of a Robotic Arm on Social Interactions

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Social robots can be used in healthcare settings, such as physical rehabilitation. What makes a robot successful in those settings will depend on whether they can engage people in a social and emotional way. The purpose of this study is to examine whether the type of robot, with arm or without arm, can affect the quality of social interactions. Participants consisting of 111 undergraduates were assigned into four conditions. Participants in the local user conditions interacted with trained confederates via the robot with or without the arm. Participants in the pilot user conditions interacted with trained confederates via the robot with or without the arm by controlling the robot. In the local user conditions, participants in the arm robot condition reported more positive affect, enjoyed the interaction more, and felt that they knew the partner’s goals more than those in the robot without the arm condition. They also answered more questions during the interaction, suggesting that they were engaged in the conversation. In the pilot user conditions, while there was a trend that participants in the robot with the arm condition reported more positive affect, they asked less questions than those in the robot without the arm condition, suggesting that they were less engaged in the interaction. Thus, participants in the local user conditions were satisfied with and engaged in the interaction via the robot with the arm more than the robot without the arm. However, those effects were not observed in the pilot user conditions.