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General Perceptions of a Robot Waiter through the Experimental Framework of O-HRI

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Abstract

The proliferation of service robots is affecting the world on multiple levels (Writz et al., 2018), increasing the need to understand human-robot interactions better. While the psychological effects of service robots are researched, many experiments emphasize the presence of the robot in the situation, thus eliminating realism. According to O-HRI (Őrsi et al., 2024), the natural impression of the interaction is pivotal for robots operating in human settings. Therefore, we conducted a laboratory experiment with Hungarian non-robot experts (N = 59), utilizing a cover story to direct participants' attention away from the robot, creating a more valid experience. The participants' task was to simulate a standing reception in groups of seven while a robot waiter cruised around them, serving snacks. After the conversation, they participated in a focus group interview about their impressions of the robot. Answers went through content analysis by two independent coders. Results showed positive and negative emotions were present in a roughly 3:2 ratio in the responses. The sources of both positive and negative emotions were often the same aspect of the robot. Sense of comfort (96) and discomfort (68) were the most common. Our results highlight that robots still evoke divisive reactions and more tact is needed before they can participate in everyday life situations.

Keywords: O-HRI; Organic Human-Robot Interactions; HRI; Human-Robot Interactions; Service Robot; Focus Group