

How does a disturbance affect people in HRI?

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ABSTRACT

We conducted an observational experiment to find out the effects of disturbance in human-robot interaction (HRI). Disturbance is usually an undesired phenomenon and thus has not been investigated in the field of robotics. In order to reveal how people deal with an interrupted communication, we built a HRI scenario in which the visual attention for a robot simulation has been attracted by an irrelevant object. The robot's attention was controlled based on saliency derived from the primitive features of the input image. We created a disturbing situation by superimposing a highly contrasted object in the robot's vision. Our movie shows diverse responses of human partners trying to re-establish the communication. They, for example, addressed the robot's attention by moving into the line of the robot's gaze and following it. Some exaggerated their actions and tried to re-attract the robot's attention by approaching the robot, closely showing an object, amplifying their body movement, and making noise. Others tested their hypothesis on the robot's following behavior by systematically evaluating the robot's reactions while reducing/increasing their activities. All the spontaneous reactions show that the human partners did not expect any disturbances but could cope with them as they have experienced in human-human interactions.

Keywords

HRI observational studies, communication and dialogue, awareness

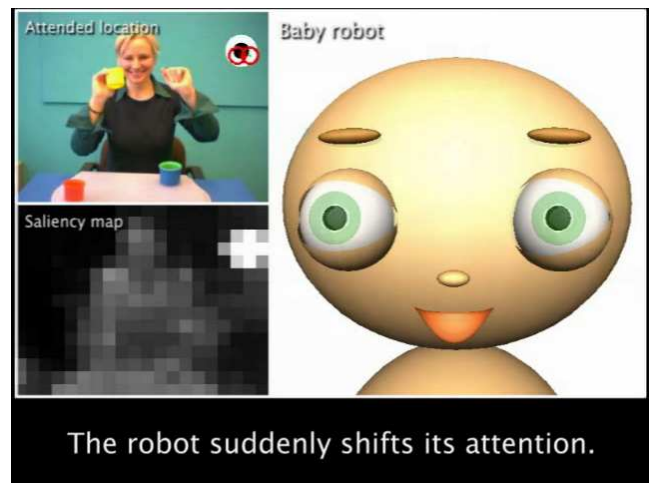


Figure 1: Disturbance in HRI