

Robotics

Appearance plays role in social perception

Robots doing menial jobs can be perceived as more capable than disguised humans

Advanced social skills may not be necessary for robots undertaking dull, stressful and dirty tasks. Researchers at Japan's Nara Institute of Science and Technology (NAIST) have found that for menial tasks, people significantly preferred machines — even compared to a human in disguise performing the same job. This may be because robots are thought to lack feelings of anger, pain and self-respect.

“Even if a robot’s appearance is to some degree human-like, people do not perceive it as essentially human,” say researchers at Japan’s ATR Intelligent Robotics and Communication Laboratories, including its former director Norihiro Hagita, now at the Ambient Intelligence Laboratory at NAIST¹. These findings could inform the design of robots acceptable to urban societies.

From clearing bombs in a battlefield to fabricating parts with monotonous precision, robots are used for dangerous, dirty and dull jobs — for this, they need few social skills. In more urban settings, robots are being developed to engage with and assist senior citizens, students and office workers. Studies show that while people prefer robots for repetitive or hazardous tasks, for tasks involving intelligence and communication they prefer humans. The research team set out to assess the acceptance of robots for tasks that involve a mixture of drudgery and social interaction. They prepared nine separate videos of a robot, a human, and a human dressed up as a rabbit; each was performing a dull, stressful or dirty task at a popular shopping mall. Tasks included endlessly guiding visitors at an information counter, responding to an angry and threatening customer, and scooping keys out of a garbage bin after a shopper accidentally dropped them there. The researchers invited 30 university students to watch the videos and fill out a questionnaire on the appropriateness of each task for each subject; and to assess how ‘human’ they felt each character



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Robots have traditionally been used for dangerous jobs in remote environments such as bomb disposal, but could increasingly find their way into social settings to fulfil dull, stressful and dirty tasks.

looked and how they deserved to be treated. Participants judged the robot to be the best for all three tasks. They also assigned the robot the lowest ranking for human-like attributes, with the human, as expected, scoring highest. However, the researchers were surprised to find that participants did not rate the person dressed as a rabbit on the same scale as the human, despite there being a real human inside the costume – suggesting the importance of appearance in assigning human-like cognitive ability.

The study offers useful insights into acceptable roles for robots in daily urban life and supports the ongoing development of guidance robots for social environments, such as tour guides in museums and exhibition spaces.

Reference

1. Hayashi, K., Shiomi, M., Kanda, T. & Hagita, N. Are Robots Appropriate for Troublesome and Communicative Tasks in a City Environment? *IEEE Transactions on Autonomous Mental Development* **4**, 150–160 (2012).