

Touching a robot can elicit physiological arousal in humans

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Pepper is described as an “engaging, friendly companion that can communicate with people through the most intuitive interface we know: voice, touch and emotions.” Credit: Aldebaran, SoftBank, Corp.

On the scale of the "uncanny valley," the humanoid robot registers a positive response with humans just before the dip into repulsion. Its resemblance hovers between C-3PO and Wall-E, a familiar but distinctly non-human robot. A seemingly natural human response to these robots would be to look at them as a friendly, non-threatening computer. Could these robots actually provoke more of an emotional response from

humans? A recent study by researchers at Stanford University found that touching a robot's intimate areas elicited physiological arousal in humans.

Jamy Li, Wendy Ju, and Byron Reeves from Stanford University will present their findings at the 66th Annual Conference of the International Communication Association in Fukuoka, Japan. The researchers conducted an experiment using Aldebaran Robotics' NAO human-shaped robot. The robot was programmed to verbally instruct participants to touch 13 parts of its body. Participants were fitted with an Affectiva Q-Sensor on the fingers of their non-dominant hand. This measured skin conductance, a measure of physiological arousal, and reaction time of the participant.

The findings showed that when participants were instructed to touch the robot in areas that people usually do not touch, like the eyes or the buttocks, they were more emotionally aroused when compared to touching more accessible parts like the hands and neck. Participants also were more hesitant to touch these intimate parts based on the response times.

A large body of research in communication shows how touch is used as a social "glue" between people - building relationships and influencing trust. Not as much is known about [touch](#) between a person and a robot. Touch has been underexamined compared to other aspects of robots, such as its appearance and shape.

"Our work shows that robots are a new form of media that is particularly powerful. It shows that people respond to robots in a primitive, social way," said Li. "Social conventions regarding touching someone else's private parts apply to a robot's body parts as well. This research has implications for both [robot](#) design and theory of artificial systems."

"Touching a Mechanical Body: Tactile Contact With Intimate Parts of a Human-Shaped Robot is Physiologically Arousing," by Jamy Li, Wendy Ju and Bryon Reeves; to be presented at the 66th Annual International Communication Association Conference, Fukuoka, Japan, 9-13 June 2016.

Provided by International Communication Association

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