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Who's Johnny?

The significance of framing in human-robot interaction design, policy, and regulation

Humans are prone to anthropomorphism — projecting our own qualities onto other entities to make them seem more human-like. Our well-documented inclination to anthropomorphically relate to animals translates remarkably well to robotic objects. Early research shows that humans ascribe agency to robots and and treat them with empathy, particularly when they are perceived as lifelike entities rather than devices or tools. As we create more spaces where robotic technology is purposed to directly interact with humans, our projection of lifelike qualities onto robots raises important design and policy questions.

As robots assume roles in a variety of new contexts, some of these contexts rely specifically on our tendency to anthropomorphize the robot. For example, many social robots are intended to provide companionship, education, motivation, therapy, or other benefits that are achieved through social interaction between the human and the robot that results in emotional bonding. In other contexts, anthropomorphism and emotional bonding are undesirable, for example when it would diminish the function of military or medical technologies; it can be anything from inefficient to impairing to dangerous for humans to anthropomorphize certain robots (bomb-disposal robots, search and rescue robots, medical operation robots, etc.). Furthermore, emotional attachments to social robots may raise privacy issues and the potential for manipulation through private firms or government, affecting (but not limited to) vulnerable members of the population. Finally, the general regulation of robots relies partly on their actual capabilities, but is also strongly tied to our perceptions of the technology.

Based on a series of human-robot-interaction experiments conducted in our lab, this paper explores the importance of framing in the introduction of robotic technology to humans. Our experiments indicate how lifelike movement and personification can influence people's evaluation of robots—in particular the relative importance of movement versus framing through names and narratives. While the lifelike physical movement of robots is often assumed to be a major driver

of projection, robots are often required to optimize movement for mobility, making movement difficult to adjust in real world settings. We were therefore interested in seeing what weight framing carries. Both of these tools can impact people's projection onto a robot, for example how intelligent they perceive it to be, or whether they empathize with it. The paper will present the experimental results from our study and explore implications for robotics, as well as the broader legal and ethical implications. Projection impacts not only whether companies can design better robots, but has a much larger impact on the way we view robotic technology and the analogies that drive use and regulation.