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Morality and Responsibility of Robotic Violation of Human Privacy

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Morality and Responsibility of Robotic Violation of Human Privacy

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Abstract

Humanoid robots, such as Tesla's Optimus, can mimic human interaction by a means of autonomous machine learning algorithms, which enable the robots to adapt to the contextual needs of the environments in which they operate. Humanoid robots can enhance human life in many ways, such as helping with daily activities (e.g., housekeeping) and carrying mature conversations with children and adults. Despite the rapid increase in their market share and the many benefits they can provide, humanoid robots introduce ethical issues, particularly those relating to privacy. In this empirical research, we examine ethical judgments of robotic violation of human privacy. Specifically, we focus on well-established constructs in the fields of cognitive science and robotics (i.e., agency of the robot), information privacy (i.e., surveillance activity and context sensitivity), and organizational science (i.e., role-taking) and test whether such factors can influence ethical judgements of individuals about robotic violation of their privacy. Our experiment (n = 672) involved a role-taking task, where MTurk participants reacted to a hypothetical scenario in which a robot violated human privacy. We used a randomized full factorial design: 2 (agency: high vs. low) x 2 (surveillance: recording vs. no recording) x 2 (sensitivity: high vs. low) x 2 (role: consumer vs. businessperson). We controlled for privacy concerns, age, gender, education, and ethnicity. To manipulate agency, we used two robots: Warden [high agency] and Coco [low agency]. To manipulate surveillance, the robot recorded everything [active surveillance] or did not record anything [inactive surveillance]. To manipulate context sensitivity, we used two versions of the scenario in which the robot intruded into human privacy: when a human is taking a shower [low sensitivity] or having sex [high sensitivity]. To manipulate role, participants were asked to take the role of a consumer or a businessperson during the experiment. Participants were asked to rate the robotic violation of human privacy using four items [unethical, wrong, immoral, and evil] (i.e., moral judgment). They also rated two responsibility items: 1) "The company that designs Warden [Coco] is responsible for Warden [Coco]'s actions" and 2) "The robot, Warden [Coco], is responsible for its actions." After validating the success of our manipulations, in a series of regression analyses, we found (Table 1) that agency of the robot, its surveillance activity, context sensitivity, and the role taken by the involved human have causal effects on judgements of morality and responsibility. Our findings advance theoretical and practical issues in the interdisciplinary domain of privacy and Artificial Intelligence (AI).

Independent Variables	Outcome Variables					
	Morality and Responsibility of Robotic Violation of Human Privacy					
	Moral Judgment		Organizational Responsibility		Robotic Responsibility	
Agency (High)	(+)	Significant	(-)	Not significant	(+)	Significant
Surveillance (Recording)	(+)	Significant	(+)	Significant	(-)	Not significant
Sensitivity (High)	(+)	Significant	(-)	Significant	(+)	Not significant
Role (Consumer)	(-)	Not significant	(-)	Significant	(+)	Significant
Privacy Concerns	(+)	Significant	(+)	Significant	(+)	Not significant
Age	(-)	Significant	(-)	Not significant	(-)	Significant
Female	(+)	Not significant	(+)	Not significant	(-)	Significant
Education	(-)	Not significant	(-)	Not significant	(+)	Not significant
White	(-)	Not significant	(-)	Not significant	(-)	Not significant

Table 1. Summary of Findings (p value significance level is < 0.05)