

PAPER REVIEW NR 2

Paper:

Yam, K. C., Bigman, Y., Gray, K. (2021). Reducing the uncanny valley by dehumanizing humanoid robots. *Computers in Human Behavior*, 125, 106945.

<https://doi.org/10.1016/j.chb.2021.106945>

Reviewer:

Giovanni Filomeno

I confirm that I have read the paper and written the following texts myself



1. Thematic focus

The paper analyses the reduction of the uncanny valley effect by dehumanizing humanoid robots. This is achieved by manipulating the participants' perceptions and modifying the aspect of the robot (i.e., reducing the “eeriness” presented in robots that look closely, but not entirely human). The experiments are conducted across various studies involving different samples of populations and settings.

2. Foundations

- Mind Perception
- Dehumanization and Anthropomorphism
- Human-robot interaction

3. Method

The method section details experimental studies with American and Japanese participants assessing humanoid robots through videos or real interactions. Dehumanization was manipulated by scripted descriptions emphasizing robots' mechanical nature, and perceptions of agency and experience.

4. Key results

- Dehumanization significantly decreased feelings of uncanniness in humanoid robots.
- The reduction of the uncanny valley does not compromise customer satisfaction.
- Results were statistically robust, confirming the effectiveness of the manipulation of dehumanization.

5. Practical implications for AI or robotics

The study's practical implications for AI and robotics suggest that dehumanizing humanoid robots by diminishing their perceived human-like experiences can effectively reduce the uncanny valley effect. This approach could benefit industries utilizing robots in customer-facing roles, as it maintains customer satisfaction while reducing user unease.

6. Strengths of the paper

The paper uses a rigorous and robust statistical analysis. The paper employs a combination of experimental and field studies to ensure generalization. Moreover, it uses models to identify the specific pathways through which dehumanization impacts perceptions of humanoid robots.

Another strength is the fact that it demonstrates the effect of the study in a real-case (e.g., the hotel)

7. Weaknesses of the paper

In the paper, the small to medium effect sizes of the dehumanization intervention which, while statistically significant, may appear modest in practical terms. Despite this, the authors argue that the intervention's low cost and ease of implementation make it scalable and practical for widespread use. Additionally, they suggest that focusing solely on mechanistic dehumanization and not exploring animalistic aspects may limit understanding of other potential influences on the uncanny valley effect.

8. Personal learnings

I liked the methodology and the real-case test. In particular, I think it has a huge practical/industrial application for all companies that use robots for human interaction.