

The Effects of a Robot's Poses on User Perception and Self-Projection

Boqian WU¹ · Sara KIM²

¹ Graduate School of Informatics, Kyoto University ² Institute of Library, Information and Media Science, University of Tsukuba

Introduction

What is “Nuikatsu”?

- ❑ “Activities with stuffed toys” in Japanese
- ❑ Bringing beloved stuffed toys to various places, taking and sharing pictures
- ❑ Stuffed toys deeply engage in people’s lives



Why do people do “Nuikatsu”?

- ❑ Stuffed toy as a **companion**¹
- ❑ Stuffed toy as a **Self-Projection**¹

“Nuikatsu” and HRI

- ❑ Stuffed toys share a lot in common with companion robots
- ❑ The idea of Customization in enhancing Self-Projection²

Research Question

- ❑ How do **robot impressions** and the **degree of self-projection** differ between the customized and non-customized robots?
- ❑ How do robot impressions and the degree of self-projection differ between **indoor**, more artificial interaction scenes and **outdoor**, more natural interaction scenes?

Experiment Design

Each of our participants experience the following 4 scenarios in counterbalanced orders:



Indoors
With **default** pose



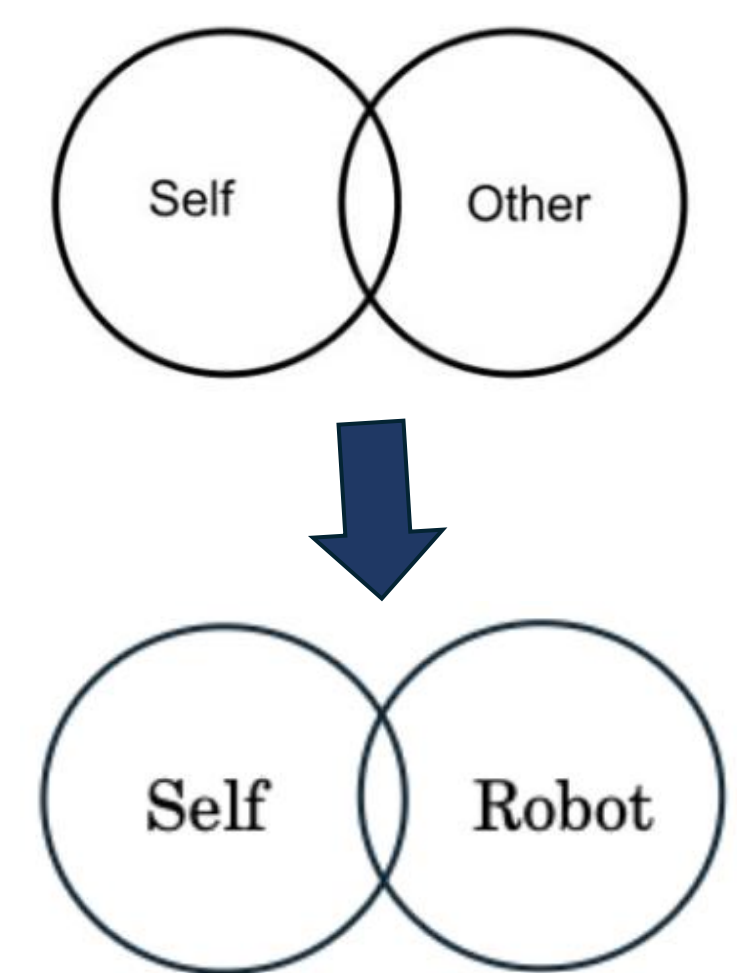
Outdoors
With **default** pose



Indoors
With **customized** pose



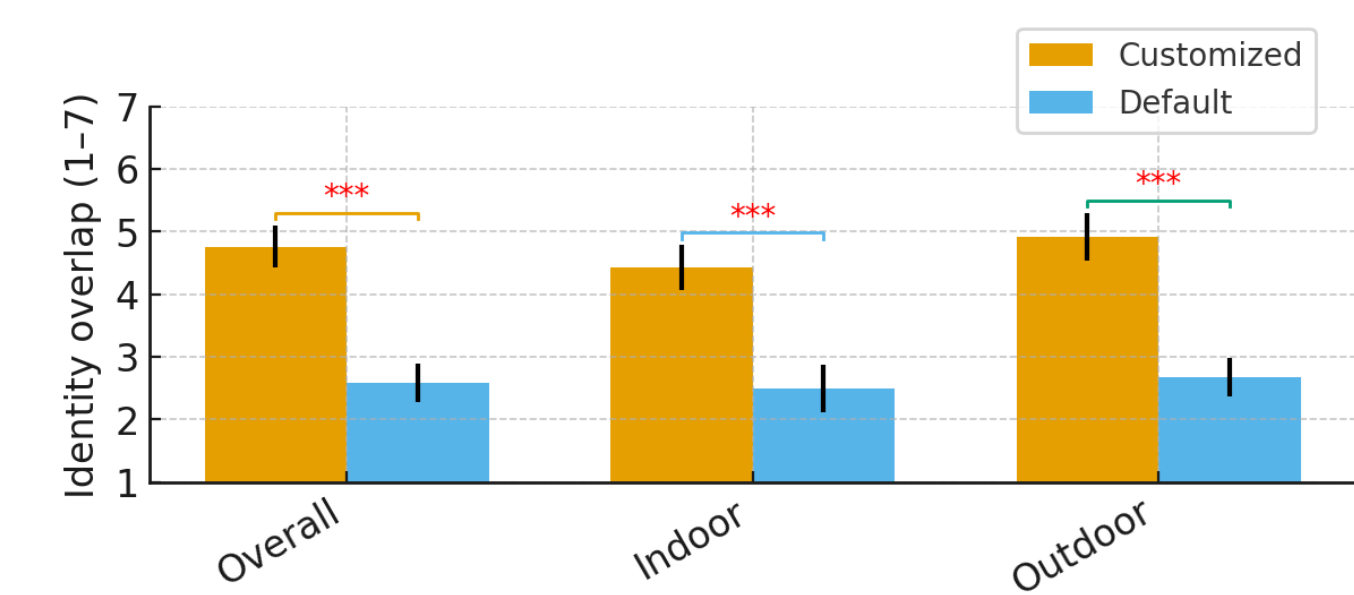
Outdoors
With **customized** pose



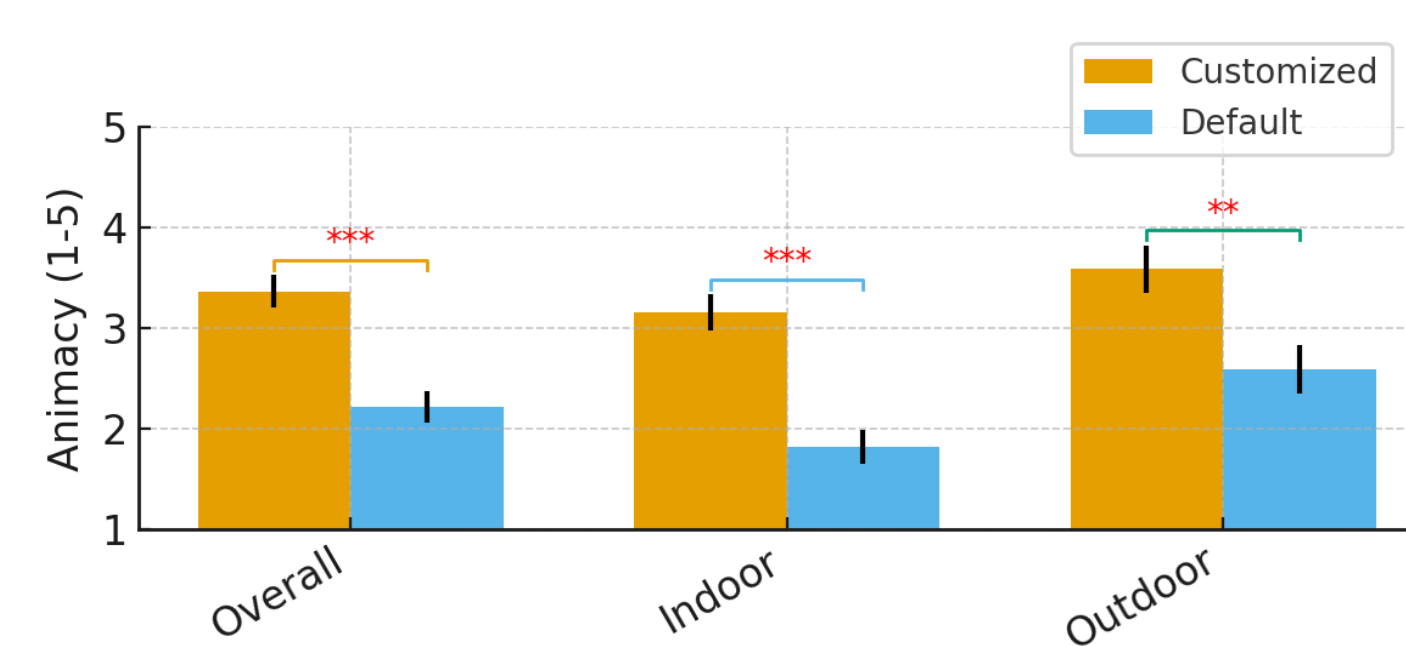
An adaptation from the Inclusion of Others in the Self(IOS) Scale³

After each scenario, the participant answers questionnaires inquiring levels of **Identity Overlap**³, **Anthropomorphism**, **Animacy** and **Likeability**⁴.

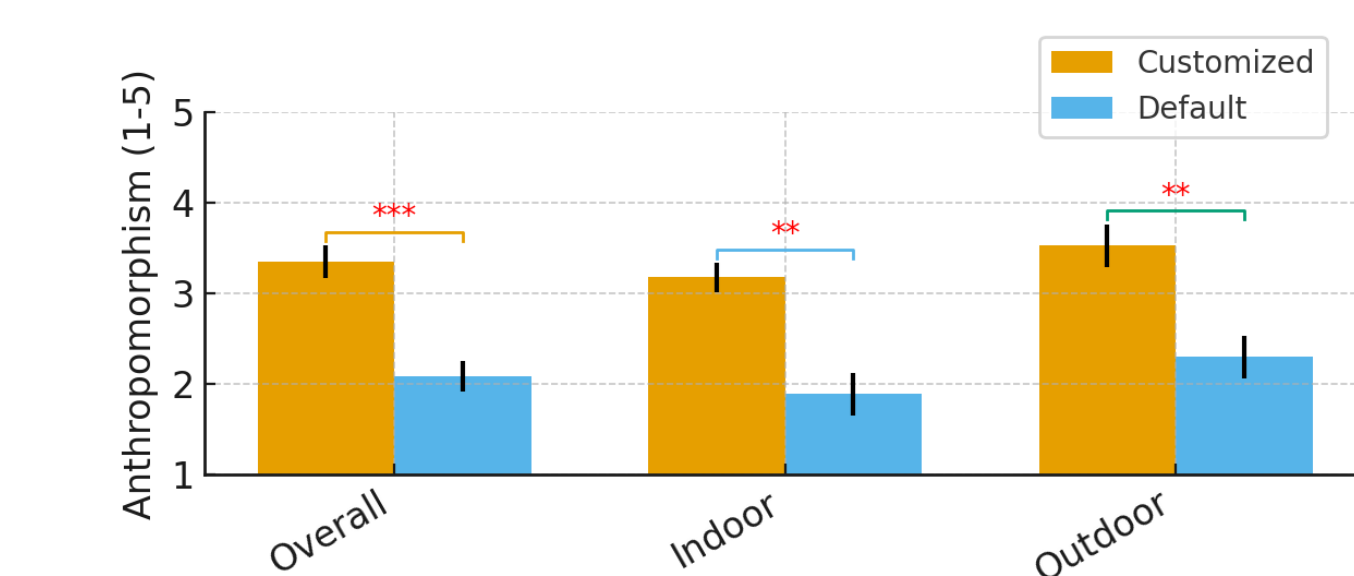
Evaluation



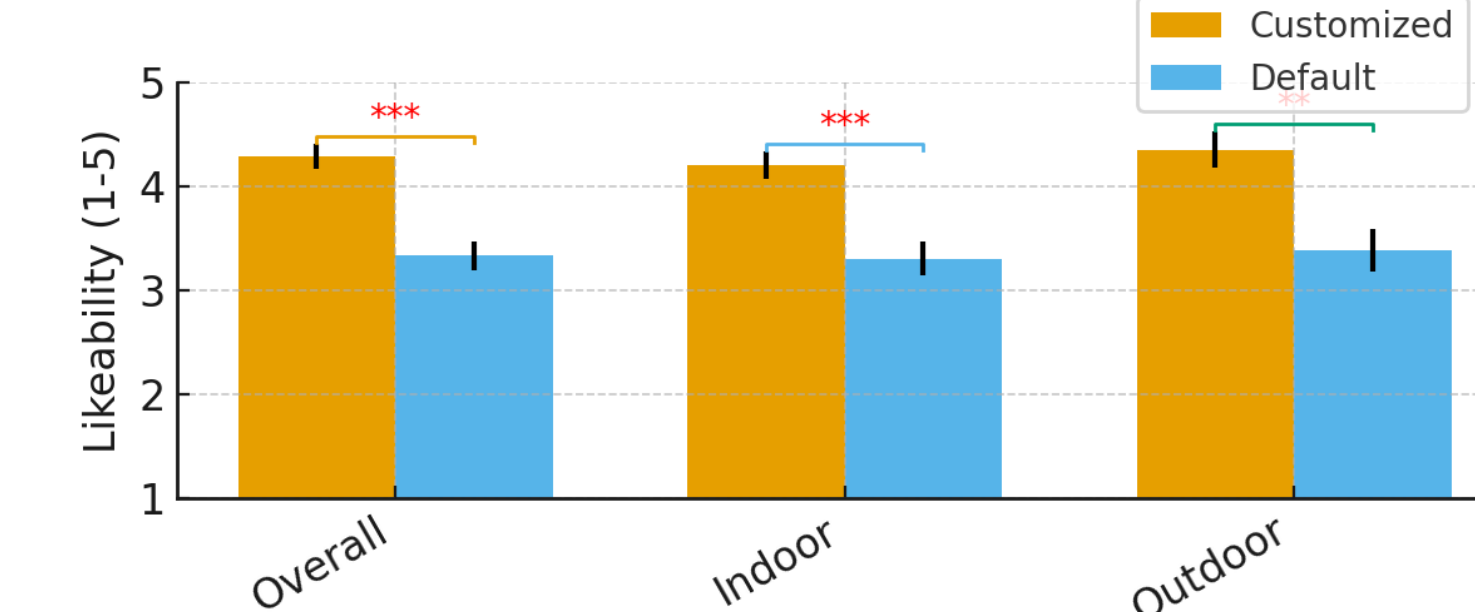
A Customized robot has higher **Identity Overlap** in both indoor and outdoor conditions



A Customized robot has higher **Animacy** in both indoor and outdoor conditions



A Customized robot has higher **Anthropomorphism** in both indoor and outdoor conditions



A Customized robot has higher **Likeability** in both indoor and outdoor conditions

Future Study

- ❑ A closer look into photos taken by participants
- ❑ Examining whether the effects of pose customization generalize to robots with different appearances

Main References

[1] Yuka Ogawa. 2024. Effects of Interaction with Stuffed Toy on Adult Psychology. *Design Research* 89 (2024), 40–41. https://doi.org/10.24520/designresearch.89.0_40
[2] Houda Elminimouni, Amy Kinney, Elizabeth C. Brooks, Hannah Li, and Selma Šabanović. 2023. “Who’s that?” Identity Self-Perception and Projection in the Use of Telepresence Robots in Hybrid Classrooms. In *Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI ’23 Companion)*, March 13–16, 2023, Stockholm, Sweden. ACM, New York, NY, USA, 5 pages. <https://doi.org/10.1145/3568294.3580090>
[3] Aron, A., Aron, E. N., Tudor, M., & Nelson, G. (1991). Close relationships as including other in the self. *Journal of Personality and Social Psychology*, 60(2), 241-253.
[4] Christoph Bartneck, Dana Kulić, Elizabeth Croft, and Susana Zoghbi. 2009. Measurement instruments for the anthropomorphism, animacy, likeability, perceived intelligence, and perceived safety of robots. *International Journal of Social Robotics* 1, 1 (2009), 71–81.