

# Self-alteration in HRI

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## Abstract

Humanlike androids are being developed with the ambition to be immersed into our daily life and meet us on an equal level in social interaction. The possibilities and limitations of these types of robots can potentially change societies and Human-Robot Interaction might affect the very way in which we engage with each other and who/what that 'other' might be. If even in human relationships we indirectly perceive ourselves through others, what self-understanding could we achieve via the otherness of robots? If as M. Heidegger pointed out technology is not neutral and as a consequence transforms us, how does robotics challenge our core conceptions of what we are and how we should be? As phenomenologists like N. Depraz have argued, subjectivity is from the very beginning intersubjectivity and liminal generative subjects contribute to enlarging our own subjectivity; we explore with robots the ways in which our subjectivity can be innerly transformed, de-centred, in other words, self-altered. In our trials so far, we have been investigating the potential of teleoperated androids, which are embodied telecommunication media with humanlike appearances. By conducting pilot studies in Japan and Denmark, we examine how Telenoid, a new type of teleoperated android robot designed as a minimalistic human, affect people in the real world. We introduce Telenoid to real-world as the fields of elderly care and child education by focusing on the social aspects of the android robot that might facilitate human communications. As an example of the results, in group work activities in an elementary school, we found that Telenoid's limited capability led children to change their attitudes so that they could work together. Also, in a care facility, the elderly with dementia developed prosocial behaviors and increasingly positive attitudes toward Telenoid; they talked to the robot, whose identity they created. Telenoid has potential to promote better understanding of the elderly by helping operators elicit their imagination and have an insight into their states of mind. Through these experiments, we verify the influences of the robot on people and aim to provide conceptual and phenomenological research, across cultures, on how we perceive certain types of interactions and their components, and how the type of interaction partner contributes to our experience and expression of values. This presentation will demonstrate Telenoid, introduce our field trials and related projects, and discuss the potential of interactions between the android robot and human users for further research. The discussion will also explore philosophical issues and future perspectives in the study of social robotics, focusing on a) the design of robots, b) the process or types of interactions between human and robots, and c) self-understanding with respect to human nature and morality.

## Acknowledgement

This research was partially supported by JST CREST, MEXT KAKENHI 24300200, Aarhus University Research Foundation, SPIR and VELUX Foundation.