

Human-robot interaction and psychoanalysis

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Abstract Psychological attitudes towards service and personal robots are selectively examined from the vantage point of psychoanalysis. Significant case studies include the uncanny valley effect, brain-actuated robots evoking magic mental powers, parental attitudes towards robotic children, idealizations of robotic soldiers, persecutory fantasies involving robotic components and systems. Freudian theories of narcissism, animism, infantile complexes, ego ideal, and ideal ego are brought to bear on the interpretation of these various items. The horizons of Human-robot Interaction are found to afford new and fertile grounds for psychoanalytic theorizing beyond strictly therapeutic contexts.

Keywords Robotics · Psychoanalysis · Uncanny valley · Intentional stance · Narcissism · Ego ideal · Ideal ego · Infantile complexes

1 Introduction

Major research challenges in service and personal robotics concern the development of robotic systems interacting with humans in homes, hospitals, offices, workshops, and other typically human habitats (Siciliano and Khatib 2008). In order to cope with dynamic and partially structured human habitats, robots must be endowed with flexible goal-

reaching strategies. These functional similarities with human beings in the way of plastic and goal-directed behaviours may come with remarkable bodily similarities in humanoid robots.

Psychological reactions towards service and personal robots, ranging from wonder and plain acceptance to cautious circumspection and outright hostility, are documented in popular science reports and analysed in Human-robot Interaction (HRI) studies. Psychological attitudes towards service and personal robots are selectively examined here from the vantage point of psychoanalysis. Significant case studies include the well-known uncanny valley effect, brain-actuated robots evoking magic mental powers, parental attitudes towards robotic children, idealisations of robotic soldiers, persecutory fantasies involving robotic components and systems. Freudian theories of narcissism, animism, ideal ego and ego ideal, infantile sexuality and complexes are brought to bear on these various items.

With his reflective work on art and literature, religion, war, anthropology, and mass psychology, Sigmund Freud paved the way to applying the bulk of psychoanalytic theorizing beyond strictly therapeutic contexts—albeit in isolation from transference and other patient-analyst dynamic relationships. Attention has been drawn on human-computer interaction (HCI) as a fruitful technological domain for psychoanalytic discourse (Turkle 2004; Scalzone and Zontini 2008). The ensuing case studies vividly demonstrate that the present horizons of HRI afford fertile grounds for psychoanalytic interpretive and explanatory efforts.

2 Robotic systems and the uncanny

A phenomenological regularity hypothesized by Masahiro Mori predicts that robots become monotonically more

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