



UMEÅ UNIVERSITET

# BEING CONNECTED TO THE WORLD THROUGH A ROBOT

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## Akademisk avhandling

som med vederbörligt tillstånd av Rektor vid Umeå universitet för avläggande av filosofie doktorsexamen framläggs till offentligt försvar i Triple Helix, Samverkanshuset. Försvaret kommer även att sändas digitalt.

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**Title**

Being connected to the world through a robot.

**Abstract**

Robotic telepresence systems enable humans to be present physically and socially in a distant environment. Robotic telepresence technology is the latest in the line of communication technology development. The unique feature of such technology is that its users can act in a distant environment and interact with other people through these systems. The robot is the user's physical avatar through which they act. This thesis aims to understand how people connect to the world through robotic telepresence. The aim includes addressing how humans operate the robotic telepresence system, how the robotic telepresence supports performing actions in a distant location and supports social interaction, and how a human experience being in a robotic body.

The thesis is based on five studies, reported in five papers, that explore different aspects of robotic telepresence. The theoretical foundations consist of activity theory and phenomenology, two traditions that are arguably compatible and complementary. The concept of remote embodiment is proposed to describe the relationship between the human and robotic telepresence systems. Remote embodiment is a phenomenon, design concept, and feature that enables robotic telepresence to be used in a wide variety of activities. Furthermore, I use the concept of remote embodiment to outline possible futures of robotic telepresence.

**Keywords**

Human-Computer Interaction, Interaction Design, Robotic Telepresence, Mobile Robotic Presence, Activity Theory, Phenomenology, Embodiment

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