

Title

Human Robot Interaction

Bio

David Kirsh runs the Interactive Cognition Lab at University California, San Diego. The lab researches how humans shape the environment to extend cognition, including how we intelligently use space, and how we use physical models and other external representations as interactive tools to stimulate thought and creativity. David is Professor and past chair of the Department of Cognitive Science at UCSD. He was educated at Oxford University (D.Phil), did post-doctoral research at MIT in the Artificial Intelligence Lab, and has held research or visiting professor positions at Stanford University and MIT. He is currently the Leverhulme Visiting Professor at the Bartlett School of Architecture UCL, he is Adjunct Professor at Trinity Laban Conservatoire of Music and Dance, and President Elect of the Academy of Neuroscience for Architecture.

Abstract

What happens when a body / brain absorbs nearby objects? One of the open challenges in human robot interaction is how to coordinate joint activity between humans and robots in human peripersonal space. Peripersonal space is the region that is within reach of hands and legs. When two people work together, such as when they are doing dishes together, or sharing the space behind the bar in an espresso bar, or working together in operating theatre, or in an assembly task, it is necessary that they develop a shared conception of their joint workspace. Work in neuroscience on peripersonal presentation and how this space is redefined by the use of tools and body schema adaptation offers valuable insight into the type of representations that robots need to construct of shared peripersonal space. In this talk I will discuss what is currently known about peripersonal space, how it changes when people habituate to tools, and what if anything is known about the construction and representation of shared peripersonal space. I tie this to theories about joint activity.