

The Epistemology and Ontology of Human-Computer Interaction

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This talk will analyze epistemological and ontological dimensions of Human-Computer Interaction (HCI). It is argued that the primary relation between humans and computer systems has historically been epistemological: computers are used as information-processing and problem-solving tools that extend human cognition. The talk will explore various types of epistemological relations that exist between humans and computer systems. What they all have in common is that in them, cognition is distributed, as cognitive activity is performed by two semi-autonomous information-processing systems that exchange information between them. The resulting system may be called a cognitive hybrid (hybrid cognitive system). Such hybrids are distributed information-processing systems consisting of a human processor and an artificial processor that process information in tandem. In this way, computer systems extend human cognition.

Next, it is argued that in recent years, the epistemological relation between humans and computers has been supplemented by an ontological relation. Current computer systems are able to simulate virtual environments that extend the interactive possibilities found in the physical environment. Virtual environments are micro-lifeworlds in which analogues of everyday perception and action take place, and in which human beings have experiential and behavioral relationships with the objects represented in them. This type of relationship is primarily ontological, and extends to objects and places that have a virtual ontology. Both the aforementioned epistemological relationship and this ontological relationship are unique to information technology and distinguish human-computer relationships from other human-technology relationships.