Why do We Need a Body Anyway?

Justine Cassell

MIT Media Lab
E15-315
20 Ames Street
Cambridge MA 02139
justine@media.mit.edu
http://www.media.mit.edu/~justine/

Embodiment is all the rage: humanoid agents, robots with eyelashes. It brings back those glory days of AI when "human-like" was a goal in and of itself.

And yet, the trend is towards smart environments, disappearing computers, intelligent rooms. These systems are said to allow people to interact with the room "as they interact with another person".

In this talk I will agree with Harry Potter that one should "never trust anything that can think for itself, if you can't see where it keeps its brain". I'll argue that humans need to *locate* intelligence, and that this issue poses problems for the disappearing computer. Bodies are the best possible example of located intelligence, of course, and interacting with another person is best done when there is another person to interact with. On this basis of this discussion, I will support the use of embodiment in certain AI domains and demonstrate with a series of implemented systems, including some new work on "shared reality" -- a paradigm in which both human and computer share a real physical space within which to make hand gestures, facial displays, body movements, and real physical objects that can be passed back and forth between the real and virtual world.

But I will claim that unless we understand the "affordances" of the body -- for face-to-face conversation, for situating intelligence, for establishing trust and other kinds of interactional glue -- then neither embodied systems nor invisible computers will ever be more than just another Cheshire Cat face.

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