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Week 7

readings: "Tangible bits: towards seamless interfaces between people, bits and atoms" by Ishii and Ullmer + "Tangible multimodal interfaces for safety-critical applications" by Cohen and McGee? + "Ambient Interfaces: Design Challenges and Recommendations" by Gross

The required paper by Ishii and Ullmer is seminal in the field; along with the vision of Mark Weiser, Ishii and Ullmer's vision of tangible bits provided a strong case against the then- (and now-) prevalent GUI metaphor. In a similar way as well, I believe, Ishii and Ullmer's ideas are misrepresented by others in the community. For example, Tom Gross, in experiments done at the Fraunhofer Institute, described an interface that "blows air into the face of the user." Yet such a use of ambient or tangible interfaces flies in the face of creating natural movements of information from the periphery to the centre. As well, Gross describes another interface that required the user to press the arm of a robot to login to a computer system. The natural question to ask is: why? Why this mapping? What does squeezing an inanimate object have to do with computer-system login? Such disregard for considerations of proper mappings counteracts the ideas of Ishii and Ullmer who describe in great detail the need for tangible interfaces to provide direct couplings between physical and digital constraints.

While I believe strongly in the tangible interface vision I would like to use this opportunity to offer some critiques. The ideas of Ishii and Ullmer are strong: to supply better interfaces to digital information by using our natural affinities with physical objects. Yet much of the work that has come out of the Tangible Media Group focuses on only one physical interface: the table. The table, of course, has many useful aspects; however I worry that too much focus on table interfaces leaves precious resources left over for research into all of the other myriad physical interfaces that exist. There are, of course, other, non-table interfaces from the group, such as inTouch, Topobo, musicBottles, and so on. These various interfaces mirror the multitudes of physical objects in the world and are where, I believe, the most benefit from TUI research can be had. For if we can truly augment the interactions we have with, as well as the types of information we derive from, different types of physical objects, then I think we will learn much about the best ways to bridge the physical and digital worlds and bring the "tangible bits" vision to fruition.