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Week 8

readings: "Designing interactive paper" + "'Listen reader" - an electronically augmented paper-based book'

Unfortunately, the required reading was unavailable due to Scientific American's insistence on paying a fee to read the content. Because of that, I decided to read two papers on augmented reality and physical paper. They present two vastly different ways of approaching the situation.

The latter paper, "Listen Reader", describes a museum-centered, paper-based augmented reality system. A user sits in a chair and by moving his/her hand around the pages of a book, various bits of audio emerge from the speakers. Turning pages also causes one section of audio to fade out and the next section to fade-in. Such a system provides a number of affordances that other augmented reality systems do not. For one, in "Listen Reader" the technology is transparent; as the system is based on RFID tags and electronic field sensing, both of which are invisible, the technology does not get in the face of the user. The user can interact and use the book as normal: flipping pages causes the audio to change, just as flipping pages causes the content to change in a non-augmented book. As well, the nature of their setup, with comfortable chairs and a "sound sphere", causes people to enter an immersive environment, something that is not available in other types of augmented reading systems, such as CD-ROMs or PDA-based books. However, one has to question how much utility the system has outside of a museum situation, although the ability to create "social reading" is quite positive and should be looked at further.

The first paper, "Designing Interactive Paper" took a completely different approach, an approach that I feel is fraught with difficulty. Instead of using technologies that are invisible to the user, this paper, and the projects described therein, use projections onto existing paper. While the authors recognize that a major affordance of paper-based systems is their ability to be taken from one place to another (crucial in engineering-based scenarios), they still design a system that is tied to nearby computers (witness their A0 graphics tablet). Other projects involved using "paper buttons" or a "barcode reader", user interface objects that either do not have a natural mapping or that make the technology opaque instead of transparent. They also claim as some of their findings that people "take advantage of minute, seemingly irrelevant details" and that paper documents "provide peripheral awareness" of others' activities, results that would be obvious in a casual reading of the cognitive science literature. The projects described in this paper suffer from what might be termed "ground feeding": instead of looking from a wide angle, of seeing the connections between their desires and work and prior research in cognitive science and HCI, they focus instead on technical details and incremental improvements to already failed lines of research.