

Autobiographical Design

Phoebe Sengers
Cornell University
301 College Ave.
Ithaca, NY 14850
sengers@cs.cornell.edu

1. THE PROBLEM OF EXPERIENCE DESIGN IN HCI

The central problem that Human-Computer Interaction (HCI) is grappling with in finding ways to address experience in design is the tension between the objective, formal representations which are its preferred mode of knowledge production and the personal, intimate, and inherently subjective nature of experience. While HCI as a field has to some degree incorporated 'subjective' disciplines such as ethnography and design, its inheritance from engineering and cognitive science leads to a relative privileging of objective, quantitative, reproducible and formal representations which are inadequate for fully describing the nature of idiosyncratic everyday experience. Even affective computing attempts to model emotional experience often try to reduce rich emotional experiences to numbers which can be physiologically measured. In the process, the rich details of individual experience may be dropped out of the picture, resulting in flat interfaces that may be functional but do not really enrich our everyday quality of experience.

Instead of an objective, formal, and rational approach to experience, in this paper I propose autobiographical design, or the design of technology with respect to details of its designer's personal experiences, as a promising approach for bringing richer aspects of experience into design. Rather than aiming to achieve objective knowledge about personal experience, autobiographical design embeds the designers' personal subjectivity into the system. By designing for rich details of his or her own life, which he or she knows intimately and personally, designers may be able to offer richer experiences to other users as well.

2. DESIGNING FOR INDIVIDUAL EXPERIENCE: A TRAJECTORY

While this approach may sound heretical to a model of HCI as a science, a variety of approaches in HCI are suggesting that individual, idiosyncratic experience can be a valued contribution to design. Personas, for example, have become a standard method of concretizing users in the design process; rather than focusing on generic users or an 'average' user based on the demographics of the target audience, designers have found it effective to develop descriptions of concrete, idiosyncratic, and highly particular target users as a way to bring depth to a system's design (though see [6] for a critique of the depth of these approaches and suggestions for alternative techniques to develop more compelling personas).

This trajectory has been pushed further by several further approaches to incorporating idiosyncratic experiences which suggest that rich experiences can be supported by designing for strange users, i.e. ones who are not the eventual target users for

the system. Von Hippel argues that products should be designed with respect to *lead* users, i.e. users who are most unusually advanced in using a particular technology [3]. These highly atypical users will give designers new insights into the future potential for technologies, once they reach a mass audience. Djajadiningrat et al. suggest that designers can consider extreme characters as the source for design inspiration; by designing for unusual characters such as drug dealers or the pope, rather than the stereotypical businessman, we can open the door for supporting alternative experiences in design [2]. Holmquist, similarly, argues that we can effectively design for extreme users, even and perhaps especially if we do not intend for those users to be end users [4]. For example, his research group has built a camera based on the experiences and preferences of lomographers, users of an obscure early 20th-century Russian camera technology; this camera is not intended for lomographers, but to allow ordinary users to get a sense of the aesthetics and experiences of this unusual population of users. Finally, and most similarly to the approach suggested here, McCarthy and Wright explore user experience of technology in part by examining their own experiences in using technology [5].

Autobiographical design is an extension of these insights. Rather than designing for average or typical users, autobiographical design addresses one individual's experience in the hopes that this may offer something of interest to other users. It extends these prior approaches by focusing on the one 'lead' user whose experience the designer knows intimately and fully – him- or herself.

3. THE TRIALS OF SELF-EXPERIMENT

System designers already have a history of designing for themselves, a history which is in many ways unfortunate. Madeleine Akrich has noted that the designers of systems tend to use the "I-methodology", i.e. they think of users of the system as just like themselves. She argues convincingly that programmers need to become more aware of what their target users are actually like and design for them [1].

While I am highly sympathetic to this argument, a different response to the "I-methodology" is possible, based on the desire to develop systems that more accurately reflect deep aspects of our everyday lives. One of the techniques used in cultural theory to better understand a human situation is to rigorously examine one's own life and experiences. Cultural theorists argue that disciplined self-examination leads to kinds of knowledge that are not possible when taking an objective approach. Following this line of thinking, instead of designing for themselves while thinking they represent other people, a system designer could design explicitly and reflectively for him or herself. In the sense I intend, autobiographical design requires designers to carefully

reflect on what aspects of their personal, idiosyncratic experiences they would like to propagate and how their personal use may or may not relate to other users'.

This approach to 'self-experimentation' is similar to Varela, Thompson, & Rosch, who argue that cognitive science, which traditionally has been hostile to evidence from personal experience, should embrace it [9]. They argue that we have no better evidence for what "mind" is than our own experience of it; this experience is usually superficial and unreflective, but through Buddhist meditation can be deepened to become accurate knowledge that is useful to complement and expand the knowledge of cognitive science itself.

4. CASE STUDY: AFFECTOR

Simeon Warner and I are friends who happen to work in the same building, their offices next door to each other. One evening, I was working late when I heard someone go into Simeon's office and say, "Working so late by yourself?" Although up to then I had been unaware anyone else was there, I spontaneously shouted, "He's not by himself - I'm right next to him!" Indeed, our office chairs are only a meter or two apart, although the intervening wall means neither one of us is normally aware of the other's presence. We decided on the spot that we would build a virtual window between our offices that would let us be aware of each other's emotional presence.

The central goal of Affector is to support friends in shared office spaces in maintaining an ambient sense of each other's moods. The system requires little active intervention; it communicates a background sense of mood autonomously, rather than being told by the office residents what it should communicate. The system does not directly model user emotions, understood as discrete and well-defined units, but rather gives a continuous, rich, and potentially ambiguous background sense of emotion. Disambiguating system output is in the province of the systems' users, drawing on their existing rich understanding of one another based on their day-to-day interaction.

There are many existing systems which function effectively to support ambient awareness in office contexts. Affector differs from these in two major ways. First, most systems for awareness in computer-supported cooperative work (CSCW) are intended to improve productivity, whereas our system is designed to create a sense of human connection among friends who happen to work in the same building, and explicitly *not* to support work. Second, CSCW systems tend to support awareness of physical presence and/or activities, while Affector supports awareness of *emotional* presence (mood) while suppressing distracting and in this case privacy-intruding awareness of activity. As a research project, our greatest contribution is towards design for the complexity of human interpretation of the system, rather than optimal reproduction, representation and transmission of information by the system itself. In this respect, the system's philosophy is

similar to that of eMoto, an open-ended system for communicating mood in email sent through mobile phones.

To address the complexity of interpretation, Affector is being built expressly for and by Simeon and I as a form of autobiographical design. This approach involves a careful examination and incorporation of our subjective experiences in system design and evaluation. We aim to consciously, self-reflexively, and responsibly design for ourselves, in the hopes that we will be able to create more rich and complex experiences than is possible when engineers attempt to take a more objective/external view of experience.

5. REFERENCES

- [1] Akrich, M. (1995) 'User Representations: Practices, Methods and Sociology'. in Rip, A., Misa, T.J. and Schot, J. (eds.) *Managing Technology in Society. The Approach of Constructive Technology Assessment*, London and New York: Pinter Publishers, pp. 167-184.
- [2] Djajadiningrat, J.P. , W. W. Gaver , J. W. Fres. "Interaction relabelling and extreme characters: methods for exploring aesthetic interactions." *Proceedings of the conference on Designing interactive systems: processes, practices, methods, and techniques*, 2000, 66-71.
- [3] von Hippel, Eric. "Lead Users: A Source of Novel Product Concepts." *Management Science*, vol 32, no 7, 1986: 791-805.
- [4] Holmquist, Lars Erik. "User-Driven Innovation in the Future Applications Lab." *Extended Abstracts of CHI 2004*, 2004.
- [5] McCarthy, John, and Peter Wright. *Technology as Experience*. Cambridge: MIT Press, 2004.
- [6] Nielsen, Lene. "From user to character." *Proceedings of the Conference on Designing Interactive Systems: Processes, Practices, Methods, and Techniques*. ACM, 2002.
- [7] Oudshoorn, Nelly, Els Rommes, and Marcelle Stienstra. "Configuring the User as Everybody: Gender and Design Cultures in Information and Communication Technologies." *Science, Technology & Human Values*, vol. 29, no. 1, 2004, 30-63.
- [8] Sundström, P., Ståhl, A., and Höök, K. eMoto – Affectively Involving both Body and Mind. *Proceedings of CHI '05*, Portland Oregon, USA, 2005
- [9] Varela, Francisco J., Thompson, Evan, & Rosch, Eleanor. *The embodied mind: Cognitive science and human experience*. MIT Press, Cambridge, MA, USA. 1991.