Experience as Interpretation

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ABSTRACT

Much current user experience literature in HCI presumes that experience can and should be actively controlled by HCI practitioners and passively received by users. In this paper, we argue, instead, that users are actively involved in constructing their experiences through a process of interpretation. As a consequence, experience is co-constructed between users, designers, and systems. To design for this experience, then, we need to shift HCI design strategies from control of user experience to support for flexible interpretation.

INTRODUCTION

This workshop is one signpost of the growing importance of user experience as a topic in HCI, a topic which is not yet greatly understood. In many cases, user experience is currently being discussed as an attribute of software; Apple's website, for example, defines user experience as "a term that encompasses the visual appearance, interactive behavior, and assistive capabilities of software" [2]. This is similar to the definition proposed in standard HCI textbooks (e.g. [11, 16]). This concept of user experience tends to focus on issues of usability: ensuring that all menus throughout the site behave in the same manner, that color schemes and icons are consistent, and that users are able to find the information and accomplish the tasks they desire. Because by this definition user experience is an attribute of systems themselves, it can and should be directly designed and controlled by the authors of a system and passively received by users.

While this approach to experience can improve the quality of software, it has difficulty doing justice to the full complexity of actual human lived experience. Rather than experience as something to be poured into passive users, we argue that users *actively* and *individually* construct meaningful human experiences around technology. They do so through a complex process of interpretation, in which users make sense of the system in the full context of their everyday experience.

We are a group of designers, computer scientists, and social scientists building and assessing systems that support and engage *affective presence*, or complex human experiences with emotional, social, and spiritual dimensions. In this paper, we describe our theoretical approach to experience, explain how it alters standard HCI conceptions of how machines relate to human experience and offer some design strategies to more adequately support active user interpretation.

DEALING WITH COMPLEXITIES OF EXPERIENCE

As Wright & McCarthy [18] argue, HCI theories, categories, and models by necessity abstract from users' lived experiences, often inadvertently losing the details that make them rich, relevant and personally meaningful. They point out, for example, that, while we can speak of and program for an abstract category of frustration, the user's actual lived experience of frustration with a two-timing lover will in many

essential details differ markedly from frustration because a software package has crashed again - and these are precisely the kinds of details that make up rich and meaningful experiences for people. While formal models can offer useful guidelines, we can be seduced into confusing formal model for lived experience.

Affective computing, for example, is one area in which HCI has already developed approaches for allowing computers to address a wider range of human experence. Picard [15] and colleagues in intelligent systems research argue that that models divorcing reason, a computational construct, and emotion, a seemingly non-computational construct, are untenable and ineffective, not only because cognitive science is demonstrating that reason itself has an emotional component [6], but also because emotion is an essential part of human experience of computing, and must therefore be considered in HCI.

Much of the work in affective computing focuses on ways in which computers can become aware of and reason about human emotional states (e.g. [15, 3, 13, 10]). These theories often are subject to Wright & McCarthy's critique of formal HCI approaches to experience, by abstracting away from people's lived experiences, focusing instead on emotion as an abstract informational unit. For example, Picard draws on the Shannon and Weaver theory of communication as an explanation of how emotions are communicated. Shannon and Weaver [17] proposed a communication theory where an individual forms a message internally, then transfers this message to recipients through some channel vulnerable to some level of noise. The recipient receives the message and decodes it for understanding.

A possible alternative approach draws on the numerous challenges and revisions of the delivery-based communication models that propose a counter view of communication as one where meaning is co-constructed [5, 4]. In other words, meaning is not transferred from one individual to another but individuals actively and jointly construct meaning. Likewise, the communication of emotion may be portrayed not as a discrete state being transferred between sender and receiver but as a process of coordinating meaning. Based on this insight, in our own work we seek primarily not to identify emotional states but to draw the user's attention to the indicators and subsequent inferences made about emotions. Rather than creating a black box system that senses indicators and uses refined algorithms to present the resulting emotion or to pronounce the perceived emotion back to the user, in our work, designers draw the user into the sensing and inference process. Processes of detection and inference about experiences are, then, *collaborative* between user and system. We strive to make the user critically aware of what indicators are available for interpretation, how these indicators are interpreted, and the resulting effects of this interpretation.

By focusing on emotion as experience, we are able to fish with a wider net in the sea of human experience. While current affective computing is necessarily based on formal models of emotions such as that of Ortony, Clore, and Collins [13], in our work, we are also address fuzzier and more ambiguous human-related emotion-like experiences such as 'moods' or 'vibes.' At the same time, shifting to a constructed, interpretive notion of emotion leads to a set of new research questions around emotions or moods in social relationships. How do groups of users experience one another's moods or a collective mood? What role can interactive systems play in helping groups or pairs of users in coordinating senses of each other's emotions?

EXPERIENCE AS INTERPRETATION

We understand user interpretation as the process by which people use meaning-making to make experiences real for them in their own lives. In particular, we are interested in how users create experiences of complex technical systems. User interpretation is currently already of interest in the user experience community, since analyzing how users come to understand and relate to technical systems can allow them to be built more effectively. It is also a topic of discussion in the critical design community, which asks a different set of questions: what messages are implicit in our designs? How do users reappropriate and alter the meaning of technologies? What are our social responsibilities as designers with respect to how

users come to interpret and respond to our designs? (e.g. [8, 9]). Finally, it is an important topic in Science & Technology Studies, which seeks to understand and document the interpretive flexibility of technologies, or the ways in which users reappropriate and give new meanings and definitions to technology in practice (e.g. [14]). We are interested in all of these issues, and particularly in developing a dialogue around interpretation between these communities. We are particularly interested in extending ideas from these literatures to systems with some AI capabilities, where the system is itself also engaging in some kind of interpretation of the user's behavior and/or generating complex behavior that needs to be dynamically interpreted.

The fundamental conundrum of design for interpretation on which all these communities agree is that, while technologies can suggest different interpretations, a particular interpretation is never guaranteed - it always depends on the context in which the technology is being interpreted and the often unexpected uses to which it is put. Gaver, Beaver & Benford [12] have suggested that a process of "co-interpretation" between designer, system, and user is perhaps the best way to understand how meaning occurs. In all these communities, there are serious theoretical and empirical questions around whether and to what extent meanings can be built into objects and how that might affect design practice in general and in HCI. If we consider users to be flexibly coming up with their own interpretations, it becomes difficult to imagine how designers can create systems that reliably engage particularly kinds of experiences in somewhat foreseeable ways.

At the same time, considering user interpretation in the design process opens up new possibilities for adapting literary strategies to design practices to stimulate new interpretations of and experiences around systems. Gaver, Beaver, and Benford (2003) argue, for example, that we can and should design *ambiguity* explicitly into systems, for example to allow users to project their own meanings onto them. *Exagerration* can be used to raise issues around the underlying meaning of technology or simply to explore the design space; Djajadiningrat, Gaver, and Frens (2000), for example, design PDAs for 'extreme characters' such as a drug dealer or the pope to open up the design space beyond the stereotypical corporate world. *Defamiliarization*, or taking objects out of context to assign new meaning to them, is another useful literary strategy for opening up the design space; at the CHI 2003 Workshop on Designing Culturally Situated Technologies for the Home, several participants used insights from the arts, social sciences, and humanities to defamiliarize domestic technology and thereby suggest new experiences and interpretations for everyday technologies in the home.

Similar possibilities arise from the use of Artificial Intelligence techniques that themselves actively interpret patterns of human activity and generate responses as a function of these interpretations. Such ambient intelligences are able to actively participate in human contexts, not by attempting to completely and formally model the context, but rather by participating in the context as a non-human subject engaged in the shared construction of meaning. Such systems become an "alien presence" which, through its idiosyncratic interpretations and responses, open unusual viewpoints onto everyday human activity, providing opportunities for contemplation. Such systems share commonalities with ambient intelligence [1], though such work tends to be more concerned with task support than with supporting rich, affective experiences and reflection.

CONCLUSION

The approach we are taking to experience presents a challenge for HCI because it requires a theoretical regrounding. Much HCI work seeks objective, generalized understanding of users and systems in order to develop design practices that have empirically reproducible results. Yet users' experiences are by necessity radically subjective, deeply dependent on irreproducibles such as context, mood, and past personal history. In our work, we are drawing on strategies from the arts and humanities that illuminate subjective experience, particularly literary and media theory, critical design, and the arts, with the goal of creating effective design practices in the face of this irreproducibility.

Because users are the authors of their experience, in this project we work as designers, not to control that experience, but to support reflection by users on their own experiences with interactive, embedded systems. We posit that by doing this we can build devices that help users experience their lives, relationships, and the role technology can play in them in new and richer ways

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