

## Chapter 8.9

# From Ethnography to Interface Design

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### **ABSTRACT**

This chapter proposes a way of informing creative design of mobile information systems by acknowledging the value of ethnography in HCI and tackling the challenge of transferring that knowledge to interface design. The proposed approach bridges the gap between ethnography and interface design by introducing the activities of field-data informed design sketching, on a high level of abstraction, followed by iterative development of paper-based mock-ups. The outcomes of these two activities can then be used as a starting point for iterative prototype development—in paper or in code. This is particularly useful in situations where mobile HCI designers are faced with challenges of innovation rather than solving well-defined problems and where design must facilitate future rather than current practice. The use of this approach is illustrated through a design case study of a context-aware

mobile information system facilitating people socialising in the city.

### **INTRODUCTION**

This chapter looks at the mobile technology design problem of taking an ethnographic-based approach to gathering field data and making this data available to the design process in a form that is easily assimilated by designers to inform user-centred design of mobile technology. Interface design for mobile technologies presents unique and difficult challenges that sometimes render traditional systems design methods inadequate. Ethnography is particularly well-suited to design for mobile technology. Mobile usability is often highly contextual and ethnographic approaches can facilitate richer understandings of mobile use contexts providing insight into the user's perspective of the world. Exploring the huge po-

tential of mobile devices presents designers with a unique opportunity for creativity. In thinking about mobile technology design for *future*, rather than *current* practice, the challenge becomes even greater.

Before this discussion proceeds further it is worth clarifying the use of the term *ethnography*. Traditionally, ethnographic studies within sociology are conducted from a particular theoretical viewpoint and for the purpose of contributing to theory. However, ethnography, as it is understood in HCI research, generally refers to a collection of techniques used for gathering and organizing field materials from observational studies (Dourish, 2006). By its very definition, ethnography is primarily a form of reportage. It provides both empirical observational data, and makes an analytical contribution in the organization of that data. The virtue of ethnography is that it takes place in real-world settings and provides access to the ways people perceive, understand, and do things (Hughes et al., 1997). Ethnographically-oriented field methods can be used in HCI to provide a deeper understanding of an application domain, a holistic understanding of users, their work, and their context, which can then be drawn into the design process at the earliest stages (Millen, 2000). Ethnographic studies involve detailed observations of activities within their natural setting, providing rich descriptions of people, environments and interactions, and acknowledging the situated character of technology use (Millen, 2000). These observations can provide valuable insights into the processes needed for systems requirements specifications (Sommerville et al., 1993).

In the literature, the terms ethnography and ethnomethodology are both used to refer to field studies using ethnographic methods to understand how people perceive their social worlds. Other terms such as technomethodology (Button & Dourish, 1996), rapid ethnography (Millen, 2000) and design ethnography (Diggins & Tolmie, 2003) are also used to distinguish different aspects of the use of ethnography in the design of technology.

For the sake of simplicity, this chapter uses the term ethnography to encompass these understandings as being important to the discussion of the relationship between their outputs and the inputs they provide to the design process.

For ethnography to make a worthwhile contribution to the design of mobile technologies, we need to find ways for translating ethnographic findings into forms that are suitable for informing design processes. In the following sections, the historical relationship between ethnography and HCI is discussed, including how it has been incorporated into the process of interface design. The theoretical and methodological background for how to gather and interpret ethnographic data and use this for informing design is described. A design case study is then presented in which an ethnographic approach has been applied to mobile technology design in a real world research project through a structured series of activities. The overall process is described, and the two steps of developing *design sketches* and *paper-based mock-ups* are introduced as a way of bridging the gap between ethnography and interface design. Finally, lessons learned from using design sketches and paper-based mock-ups in the development process are outlined.

## **BACKGROUND**

### **Ethnography and HCI**

The issue of bridging the gap between ethnography and interface design has been a topic of discussion in HCI research for over a decade. Ethnography is now regarded as a common approach to HCI research and design (Dourish, 2006). Yet there is still no overall consensus on how best to incorporate the results of ethnographic fieldwork into the design processes (Diggins & Tolmie, 2003). In the early 90s seminal work by sociologists, such as Suchman, Hughes, Harper, Heath and Luff, inspired the use of ethnography for under-

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