

# **Experience-Centered Design**

**Designers, Users, and Communities in Dialogue**



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Experience-Centered Design: Designers, Users, and Communities in Dialogue

Peter Wright and John McCarthy

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# Experience-Centered Design

## Designers, Users, and Communities in Dialogue

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*SYNTHESIS LECTURES ON HUMAN-CENTERED INFORMATICS #9*



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## ABSTRACT

Experience-centered design, experience-based design, experience design, designing for experience, user experience design. All of these terms have emerged and gained acceptance in the Human-Computer Interaction (HCI) and Interaction Design relatively recently. In this book, we set out our understanding of experience-centered design as a humanistic approach to designing digital technologies and media that enhance lived experience. The book is divided into three sections. In Section 1, we outline the historical origins and basic concepts that led into and flow out from our understanding of experience as the heart of people's interactions with digital technology. In Section 2, we describe three examples of experience-centered projects and use them to illustrate and explain our dialogical approach. In Section 3, we recapitulate some of the main ideas and themes of the book and discuss the potential of experience-centered design to continue the humanist agenda by giving a voice to those who might otherwise be excluded from design and by creating opportunities for people to enrich their lived experience with- and through- technology.

## KEYWORDS

experience-centered design, user experience, experiential inquiry, designer perspective, dialogical design, humanism, values, qualitative research, design research, empathy, narrative

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Peter Wright and John McCarthy  
March 2010



# Preface

Experience-centered design, experience-based design, experience design, designing for experience, user experience design. All of these terms have emerged and gained acceptance in the Human-Computer Interaction (HCI) and Interaction Design relatively recently. This interest in experience is associated with technological developments like portables, wearables, ambients, Web 2.0, locative media, and the confluence of information and communication technologies, and of computing, media, and entertainment. It is also associated with cultural changes that are often summed up in phrases like ‘out of the workplace, into the home’. But this underplays the breadth and depth of the socio-technical changes that we are living through.

In this book, we further develop a position on experience-centered design that was set out in *Technology as Experience* (McCarthy and Wright, 2004). In that book, we set out some conceptual foundations concerning the nature of human experience and its mediation by technology. In this book, we respond to the interest there has been in that book and to a number of discussions we have had about how to make those conceptual foundations more meaningful in design.

A number of other books in this series are also interested in exploring how aspects of human experience relate to design. Sutcliffe (2009), for example, takes a cognitive perspective to expand the traditional concept of usability to include aesthetics, fun, and excitement. In a similar vein, Hassenzhal, M. (2010) also sees experience as a goal for design and, taking a more experimental approach, explores ways of manipulating experiences by analyzing, dissecting, and categorizing them.

Having worked in experimental psychology and cognitive science for many years, especially in the area of how human factors research can inform design, and having explored the value and limits of experimental methods, both of us feel there is a lot to be gained from taking a more interpretive and qualitative approach to experience-centered design. In addition, we feel that when design focuses too narrowly on experimental method as an approach to knowing the user and understanding experience, it runs the risk of treating people as objects of research rather than as participants in design. As a consequence of the position set out in *Technology as Experience*, we are committed to exploring approaches that engage users as participants in the design process, with a view to understanding relationships between users and designers in experience-centered design. This dialogical approach gives weight to both designer and user as differently placed centers of value in the process of design. It continues a humanist tradition in HCI, going back as far as Engelbert, Bush, and Nelson, which focuses on enriching aspects of our humanity through attending to values of agency, democracy, equality, and choice.

In this book, we set out our understanding of experience-centered design in three steps. In Part 1, we outline the historical origins and basic concepts that led into and flow from *Technology as Experience*. In Part 2, we describe three examples of experience-centered design projects and use them

to illustrate and explain our dialogical approach. In Part 3, we recapitulate some of the main ideas and themes that are developed through the book. We also discuss the potential of a participatory approach to experience-centered design to continue the humanist vision of HCI.

We see this book as being of interest to a range of people in and around HCI, Media, and Interaction Design, from final year undergraduates and postgraduates to researchers and practitioners trying to get a handle on experience-centered design. The book is presented as three sections and an appendix. These could be delivered as a series of four independent but related, high-level (Masters, PhD) master-classes or half-day workshops. Each is concerned with a salient aspect of experience-centered design that would benefit from some clarification at this stage, including valuing the whole person, the dialogical nature of design, engaging with participants, designing things that matter, how to do research for experience-centered design.

It is not a conventional textbook: it was not our aim to be comprehensive in every area and we have written from our own particular perspective on experience-centered design. We have however tried to provide references, resources, and pointers throughout to help those who need to take these issues further or explore alternative perspectives.

Peter Wright and John McCarthy  
March 2010

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## **Part I**

# **What is Experience-Centered Design?**

Experience-centered design is concerned with designing for the richness of human experience with the wide variety of new technologies and media that are available. Of course, we can become very excited by the potential of mobile computing, social media, customized and localized apps, and the ways in which they interact with each other. But the real excitement of experience-centered design is in the impulse to use these developments to give people the chance to have a richer life, to include people who might otherwise feel excluded, and to ensure that everybody has a chance to have their say, especially those who often feel voiceless. Later we will describe the practices, sensibilities, and interests involved in doing experience-centered design. In this section, we will concentrate on where it has come from, what are the historical origins in HCI of this impulse to explore the potential of technology to work in ways that matter to people, and what conceptual developments underpin it.

## CHAPTER 1

# How Did We Get Here?

## 1.1 INTRODUCTION

Let's start with a story of what, for many of you, would be a fairly ordinary scene of everyday life mediated by technology. Peter tells the story.

*As I write this, my oldest daughter is sitting downstairs watching the TV with her laptop on her knee, alternating between working on her Bebo page making new bands for some of her friends and keeping up with a number of conversational threads on MSN. My other daughter just popped her head round the door to remind me of a promise to take her to the cinema. So we opened up flixster on my iPhone – it finds the nearby cinemas and lists what is showing. We downloaded and watched a trailer for the film that she wants to see. Meanwhile, my wife is working away in the back room on her university's virtual learning environment while listening to her iPod.*

For many people reading this book, this is what their home can be like on an ordinary evening: people interacting with each other and with other people through digital media, relating and communicating in a variety of ways, working remotely, and connecting to information that is distributed yet location-specific. None of this is simply about technology. It is about people's lived and felt experience as it is sometimes mediated by technology. For us, experience-centered design is about how to design for the richness of experience that these new technologies offer.

When Human-Computer Interaction (HCI) was mainly concerned with large scale, impersonal work systems, experience was generally in the background. As we will see later, there was some interest in user experience, but it was by no means one of the main concerns of a subject that was primarily concerned with making computers usable in work settings. When the focus of a community is so tightly trained on the functionality of systems and how they can be made more accessible and usable, experience is an outsider concept.

Experience came increasingly into play in HCI as it became apparent that work was far more complex than could be captured by the image of an individual using a stand-alone machine. It really took hold as an important part of HCI when computers found their way out of the workplace and into family, social, community, and leisure life. At that point, for example, the need for designers to address teenagers' experiences, desires, values, and feelings became a commercial imperative. The need to recognize that they were not all the same as each other and that they were different from adults also became crystal clear. But although it was for a long time an outsider, it is important to know that experience had made forays into HCI long before the computer left the workplace. Indeed,

## 4 1. HOW DID WE GET HERE?

it has been implicit in many aspects of HCI practice for quite some time. For us, experience-centered design, by addressing people's desires, values, and feelings, is the most recent phase in the realization of a humanist vision for people's interaction with — and experience of technologies. A commitment to understanding and working through the relationship between users and designers as differently placed centers of value in the design process is central to realizing this vision.

We associate this humanist vision with HCI's constant focus on the potential for technology to enhance and transform people's lives. We also associate it with an interest in design, which, although having only recently forced its way to the top table in HCI, has been an implicit concern for quite some time. This point is worth emphasizing because the challenge of this book is to clarify what is meant by experience-centered design and how we might go about it. Although we will have to clarify aspects of experience from time to time, this book is not primarily about the concept of experience. In an earlier book, we set out our stall on experience as a concept worthy of attention in HCI and Interaction Design (McCarthy and Wright, 2004). So let us begin to tighten our focus on experience-centered design by exploring its origins in three different but related HCI traditions.

### 1.2 THE ROOTS OF EXPERIENCE-CENTERED DESIGN IN HCI

HCI began as a subject committed to making what were then complex technologies, which most people did not know about or use, accessible to and usable by all. The fundamental problem at the time was that a person had to have programming skills to use a computer. Even word processing required knowledge of a complex vocabulary of commands and routines. Nowadays, menu-based and mouse-based interaction, intuitive touch screen interaction, the seamless knitting together of video, audio, and textual content, and the availability of terabytes of globally distributed digital data at the touch of a button are taken for granted. But, as Moggridge, B. (2006) makes clear in his excellent book, this change was achieved by a serious and sustained research focus on making digital technologies accessible to and usable by ordinary people.

In both academic and industrial research communities, the vision of making computing available to all was nurtured through the development of the HCI community, a loose affiliation of psychologists, sociologists, computer scientists, and electronic engineers working together to produce computer interfaces that were usable, effective, efficient, satisfying, and easy to learn (Shackel B., 1991). One powerful way in which this vision was articulated was in terms of the possibility of developing 'transparent' or 'simple' computer interfaces, through which users could get their work done without having to worry about the way in which the computer worked (see, for example, Norman, D., 1988). User-centered system design (UCSD) grew out of this agenda as a philosophy of design, arguing that, in order to design usable systems, designers and developers have to have a clear understanding of: (i) what the eventual end-users of the system actually want the system to do for them, (ii) how those end users actual get their work done at present, and (iii) whether the users will be able to understand and use the yet-to-be-designed system that the designers have in mind for them. The

UCSD philosophy anticipated three important developments that moved HCI toward experience: context, interpretation, and participation.

### 1.2.1 UNDERSTANDING USERS AND THE USE CONTEXT

A number of important conceptual and methodological contributions addressed the challenge of understanding the user and the use context. Among these were the development of contextual inquiry (Beyer and Holtzblatt, 1997), the application of Situated Action Theory (Suchman, L., 1987), and Activity Theory (Nardi, B., 1996). Both argued in different ways for the need to study work in detail and in situ, to examine very closely what people do before intervening in their practice with a new system. They also challenged the accuracy of organizational accounts of work such as job specifications and operating procedures as representations of what people actually do. For a detailed account of this development see Button and Sharrock (2009) in this series.

These field-based approaches to understanding users were accompanied by developments that helped field researchers communicate their findings to designers and developers. They also helped designers and developers represent users and the use context during the design process so that user-centered decisions could be made. These include scenario-based design and persona-based design that we discuss in more detail in Chapter 3. Although not yet sharply focused on it, an interest in experience can be seen in all of these developments: observation of and involvement in everyday work life, developing representations that somehow capture and communicate people's actual activity with systems and their responses to using them, and attention to individual differences and some of the holistic qualities of the people who use the system.

This drive to make the user and the use-context as real as possible for designers was accompanied by the complementary drive to make emerging design ideas as concrete as possible for potential users, allowing them to be consulted during the design process. Iterative design through rapid prototyping focused on developing prototypes that could be shown to users as early as possible in the design process before too much time and money had been spent making irreversible design decisions. Prototypes are not simply cut-down versions of the finished system. Rather, they can be anything from a cardboard mock-up to a Flash screen presentation that simulates the system response to user input (Snyder, C., 2003).

Numerous 'discount' usability evaluation methods were developed so that designers could get structured feedback from users of 'low-fidelity' prototypes about their usability and accessibility, and they could get suggestions about how the design would need to be improved. This cycle of prototype building and testing is done iteratively. With each iteration, prototypes move from low-fidelity paper-based sketches and simulations through to actual working prototypes. The idea here is that there is a seamless transition from the formative evaluation of design concepts to the summative evaluation of the finished product, and the likelihood of unexpected user reactions or usability problems emerging decreases as the process iterates towards the final products (Snyder, C., 2003).

### 1.2.2 FROM COGNITION TO INTERPRETATION

As Carroll and Rosson (2007) point out, the psychological and engineering roots of user-centered design meant that the underlying conceptual paradigm was a more or less positivistic science. This by no means presented itself as a tangible ideology but rather as the unstated backdrop of assumptions and operational goals. Understanding ‘the user’ as a behaving system with goals, plans, and actions informed and directed by perceptual feedback drove much of the user and task modeling of the early years of HCI, and this still has a valuable part to play in contemporary thinking (see, for example, Hassenzhal, M., 2010, in press, in this series, who presents an account of experience based on analysis of goal-based action). Such plan-based models of action provided a useful and generative framework for understanding a range of phenomenon from task performance and achievement through to human error reduction and analysis (Card et al., 1983). The cognitivist perspective was particularly valuable because it offered a language and a set of values that both psychologists and computer scientists could understand and commit to.

Many of the significant intellectual contributions to HCI have been a response to the cognitivist paradigm underlying the discipline’s historical roots. Winograd and Flores (1986), for example, offered a radical alternative to Cartesian models of cognition in their book *Understanding Computers and Cognition: A New Foundation for Design*. Winograd was well versed in the cognitivism of psychology and computer science since his PhD thesis was a landmark development in the computational solutions to natural language understanding by machines. As a consequence of these experiences and his collaborations with Flores, he offered a radical non-Cartesian alternative in the form of account of language and action based in the pragmatic linguistics of Searle and Austin and in the phenomenology of Heidegger and Gadamer. For Winograd and Flores, language like technology was not simply a representational medium but a tool for making action happen in the world, a social process of getting things done.

Likewise Suchman, L. (1987) book *Plans and Situated Actions* served to critique cognitive, plan-based models of actions and replace them with an ethnomethodologically informed conception of action as situated and contingent. Carroll and Kellogg (1989) also reframed the problem of interaction along interpretivist hermeneutic lines. They argued that it was impossible to design a system based on analysis solely of existing tasks and ways of working because the introduction of the system so designed will change those tasks creating new problems and new dilemmas in use. Moreover, they also argued that in order to understand how a technology fits into a context, one has to understand that the technology itself embodies a theory of fit and a theory of use. In short, any designed technology embodies assumptions (made by designers) about how the system will be used. In this sense then, a technology is both a theory of and a hypothesis about use. It is a question put to the user by the designer.

As argued by Winograd and Flores, an evolutionary, adaptive or ecological model of user-system-designer, interaction seems a far more appropriate model than a Cartesian scientific one. Nardi and O’Day (1999) further developed the model of ecology of systems and services drawing attention to the social nature of technical systems, and Dourish, P. (2001) drew our attention back

to phenomenology as an alternative philosophical grounding for HCI in his analysis of embodied interaction. Here the social and the physical contexts of our interaction with each other and with artifacts are seen as the building blocks for a design approach focused on situated interaction and meaning making.

### 1.2.3 PARTICIPATORY DESIGN

The practice and history of Participatory Design (PD) suggests a third, somewhat different, developmental trajectory for experience-centered design that began at about the same time as user-centered design and shared much of the same vision. Whereas user-centered design was primarily a cognitive engineering response to the need to develop better computer systems, the development of PD owed a great deal to the strongly moral, political, and communitarian energies of Scandinavian social democracy.

PD emerged in Scandinavia as a response to industry-scale automation and computerization of previously manual business processes in industries such as metalworking and printing. In Scandinavia, with its long tradition of trade unionism and social democracy, the possibilities of democratizing the process of computerization by involving workers and trade unions directly in the design process was explored in a number of projects starting in the 1970s (see, for example, [Bjerknes et al., 1987](#); [Greenbaum and Kyng, 1991](#)). These projects moved away from the traditional research model to one in which researchers and workers collaborated to produce improved conditions for the workers. There was active and continued consultation and there was collaboration between designers-developers, managers and workers. This *action research* approach emphasized workers' own experience in developing resources to help them act in the situations in which they found themselves. It also required that researchers get involved with the workers and develop a commitment to them, in order to understand and help change their work experience and conditions. In this research model, both parties should expect to get something from the research, for example, researchers getting their insights and results and workers getting an improved situation.

In the early PD projects, the idea that organizations are unitary or harmonious was rejected in favor of a view of organizations as having fundamentally irresolvable conflicts within them. Against this backdrop, improving people's use and experience of computerization was inevitably cast in a political light. [Bødker, S. \(1996\)](#) summarized the important points from the early PD projects as follows:

Based on a fundamental understanding of organizations as inherently full of conflicts, they developed a way of thinking about systems development that focused on technological and work-organizational alternatives, where the education of users to participate in systems development was important, as were design methods emphasizing the work experiences of the users ([Bødker, S., 1996](#), p. 219).

While PD began in Scandinavia, an American tradition of PD also emerged in the 1990s ([Carroll and Rosson, 2007](#)), taking a similar approach to the problem of involving differently placed stakeholders in the design decision making, in order not only to ensure useful and

usable systems but also to ensure ‘buy in’ of stakeholders across the political divide. In their book, [Greenbaum and Kyng \(1991\)](#) illustrate many methods and techniques for participatory design, what [Bødker, S. \(1996\)](#) calls “experience-based design methods” ([Bødker, S., 1996](#), p. 219). These include ‘metaphor workshops’ for brainstorming, and ‘the cardboard computer’. The methodological problem to be solved for PD was how on the one hand to give designers, developers, and managers a real insight into the experience, thoughts, feelings, and ways of doing of the workers and, on the other hand, to empower workers to take part in design thinking around possible futures.

### 1.3 RE-ASSERTING THE HUMANIST AGENDA IN EXPERIENCE-CENTERED DESIGN

User-centered design, participatory design, and the search for non-Cartesian foundations, offer the foundations for a humanist agenda in experience-centered design in which the design process focuses on the human beings who will ultimately benefit (or suffer) from the design and deployment decisions that are made. Such a focus prioritizes human values of democracy, equality, and choice in that process of design. While often present, these ethical and political ideals are seldom articulated within the HCI research community, but there are exceptions. For example, traces of the underlying humanist agenda is clear to see in: [Bødker, S. \(1991\) \*Through the Interface\*](#); [Greenfield, A. \(2006\) \*Everyware\*](#); [Löwgren and Stolterman \(2004\) \*Thoughtful Interaction Design\*](#); [McCullough, M. \(2004\) \*Digital Ground\*](#); [Nardi, B. \(1996\) \*Context and Consciousness\*](#); [Nardi and O’Day \(1999\) \*Information Ecologies: Using Technology with a Heart\*](#), among others.

But a humanist agenda is not yet a given in HCI and, even to the extent that it has become important, its implications are not always fully understood. For example, user-centered design has at times been appropriated in service of short-term business goals, such as reducing inefficiencies and costs and improving productivity by making the worker faster and less prone to errors. These are not bad things in themselves, sometimes of benefit to the worker as well as the employer, but occasionally so instrumental and devoid of input from the people involved that the concerns of workers are neglected. Even in the new contexts of experience-centered design, the humanist impulse and agenda can be hijacked to serve brand identity and product attractiveness and desirability, instead of enhancing the lives of people who buy the products. [Bødker](#) makes this point well while attempting to re-assert the humanist agenda in what she calls the third wave of HCI.

The emerging third wave is strongly tied to a kind of consumerism that differs from the underlying co-determination framework of the Scandinavian societies. My young colleagues often bring up issues of how one may do participatory design in the context of the home and of consumer products. A way of proceeding that would truly break with consumerism, would be to move the co-determination framework outside the “factory gates.” I imagine making use of people’s experiences of cooperating and learning. Hence, supporting them in making informed choices that would radically form their lived lives with technology ([Bødker, S., 2006](#), p. 6).

### 1.3. RE-ASSERTING THE HUMANIST AGENDA IN EXPERIENCE-CENTERED DESIGN 9

Experience-centered design must not become exclusively a business strategy or worse a business mantra that never even matures into a strategy. It can and should attempt to impact people's lived experience in ways that are socially, politically, and personally meaningful. Viewed in this way, it is a growth and development of the moral and ethical impulse of PD and user-centered design.



## CHAPTER 2

# Some Key Ideas Behind Experience-Centered Design

## 2.1 THE SEEDS OF AN EXPERIENCE-CENTERED DESIGN

In his book, *Bringing Design to Software*, Winograd, T. (1996) presented a cogent argument for seeing interface development as a design issue. He showed how multidisciplinary teams, including graphic designers, product designers and information architects, as well as psychologists and software developers are best placed to deal with designing interfaces to systems in which there is a high degree of information content and to media such as web sites, games, and complex data visualization. It became clear throughout that book that any boundary between computer interface design and media design is no longer sustainable and should be replaced by the idea of interaction design bridging the two.

In *Funology*, Blythe et al. (2003) argued strongly that designing for usability, which had been the primary objective of HCI research and practice, was only one of the many values that user-centered design could focus on. Designing for fun, enchantment, adventure, and excitement were equally valid user-centered goals that were resonant with the shift of emphasis from designing office- and work-oriented products to designing for home-based, leisure, and entertainment products. *Funology* and *Bringing Design to Software* included contributions from arts and humanities researchers, opening up the discussion to a wider and more radical inter-disciplinary audience. Whereas previously computers and digital technologies had been construed as tools to enhance productivity, there was clearly a growing set of technologies and applications in which the digital device was best understood as something more than a tool to be used transparently, efficiently, and effectively. A mobile phone was not just a communication tool, but also something to be admired, desired and loved. The phenomenon of SMS messaging challenged the idea that usability was always the design value that people placed most highly. Taylor and Harper (2002) study of SMS messaging as gift-giving provided further evidence of the complex social networks and intricate webs of meaning, identity, and value that accrue to simple and rather difficult-to-use systems.

Norman, one of the early advocates of user-centered system design and usability engineering made a number of important contributions to broadening the subject. The first was a series of books including *The Invisible Computer* (Norman, D., 1999) and *Things That Make Us Smart* (Norman, D., 1993) that offered new understandings of the relationship between users and computers. He promoted the term *information appliance* to capture the idea of smaller systems designed to achieve simpler things, and along with others (Hutchins, E., 1995; Scaife and Rogers, 1996; Wright et al.,

2000), he promoted the idea of computer use being a kind of distributed cognition in which the technology ‘made us smart’. In his book *Emotional Design* (Norman, D., 2004), he gave significant impetus toward experience-centered design, and his slogan “beautiful things work better” opened up an interdisciplinary debate around beauty and pleasure as a design value and the relationship between aesthetics and usability (see Sutcliffe, A. (2009) and Hassenzhal, M. (2010) in this series).

All of these developments spoke to the need for a richer, multi-faceted approach to user-centered design. It no longer seemed enough for user-centered design to focus solely on usability, ease of learning, efficiency, and effectiveness, and for a transparent interface to be the ultimate criteria of success. It no longer seemed enough to uncritically and unreflectively construe the person using the computer as a ‘user’ with everything that implies about the relationship between the human and the technology (Kuutti, K., 2001). It no longer even seemed adequate to talk about the designed artifact as a ‘computer’, ‘information appliance’, or even a ‘tool’ but rather as an interactive product, system, or media. As Winograd so prophetically declared in 1996 (Winograd, T., 1996):

Designing for the full range of human experience may be the theme of the next generation of discourse of software design (Winograd, T., 1996, p. xvii).

The seeds were sewn for a new conception of user-centered design focusing on the experience of people living with technology and not just using it.

## 2.2 EXPERIENCE-CENTERED DESIGN’S ASSOCIATION WITH DEWEY’S PRAGMATISM

Some of the earliest writing on experience-centered design looked to John Dewey’s pragmatist philosophy of experience as a starting point for thinking about it.

Shedroff, N. (2001) offered a designer’s view of Dewey’s philosophy relating examples of great design (buildings, web sites, information systems) to the idea of providing the user with ‘an experience’ that marks out the great interaction from the mundane and hum drum. He also used Dewey to show how all experiences grow out of previous experiences and help shape future experiences, that is that experience as a process is both continuous and cumulative. Shedroff quoted Dewey:

It is not enough to insist upon the necessity of experience, nor even of activity in experience. Everything depends on the *quality* of the experience which is had... Just as no man lives or dies to himself, so no experience lives or dies to itself. Wholly independent of desire, or intent, every experience lives on in further experiences. Hence, the central problem of an education based upon experience is to select the kind of present experiences that live on fruitfully in and creatively in subsequent experiences (Dewey, J., 1938/1997, p. 27).

While Shedroff’s work aimed to inspire designers and to get them thinking about what it means to design for experience, Forlizzi and Battarbee (2004) used aspects of Dewey’s work to develop a new model of interaction for Interaction Design. One aspect of their model is a classification

of human-product interactions that owes much to Dewey: interaction is seen as *fluent* where the interaction is well-learned and automatic, *cognitive* where the product is present at hand and the subject of conscious reasoning, and *expressive* where the interactions help the user form a relationship to a product or some aspect of it.

Forlizzi and Battarbee also distinguish three types of experience. They use the term *experience* to refer to the constant stream of consciousness and activity that constitutes life. *An experience* is a stream that has coalesced into something with a beginning, middle and end, which can be named, talked about and evaluated. *Co-experience*, for Forlizzi and Battarbee, is a special category of experiences that are created and shared between people. This final category emphasizes the social and physical context in which people make sense of their experience where, for example, running out of fuel on a car journey can be an adventure or a disaster depending on the place and the company. Forlizzi and Battarbee also argue that although emotion and pleasure are often considered as something separable from thinking and intellect, they are in fact, not only central parts of human activity, but also the motivating force for intelligent action.

Forlizzi and Battarbee's paper is a useful starting point for understanding the role that pragmatist conceptions of human experience can offer interaction design. Supporting the perception of a significant change occurring, at about the same time as Forlizzi and Battarbee were developing their model, others also published Dewey-inspired work on the role of and potential for experience in Interaction Design. For example, [Petersen et al. \(2004\)](#) pointed to a growing interest in the aesthetics of interactive systems design and used Dewey's work in developing a framework for understanding aesthetics as a complementary perspective on user-centered design.

## 2.3 TECHNOLOGY AS EXPERIENCE

A work we published at this time also drew on Dewey's philosophy, as well as that of Bakhtin. In *Technology as Experience* ([McCarthy and Wright, 2004](#)), we developed a conceptual foundation for experience-centered design and reflected on the aesthetic aspects of interaction and the central role of varieties of meaning making in any experiential and/or aesthetic approach to interaction (see also [McCarthy and Wright, 2005](#); [Wright et al., 2003](#); [Wright and McCarthy, 2003](#)). In that book, we developed an account of experience that begins with the idea of meaning or more specifically *sense making*. How do people make sense of the things, people, situations and experiences that constitute their *felt life*?

### 2.3.1 LIFE AS LIVED AND FELT

We use the term *felt life* rather than just life, to help us keep our attention on the fact that lived experience is an embodied experience. Part of Dewey's pragmatist philosophy was to argue against the idea that thoughts, ideas, and emotions were entities that could exist in an abstract way separate from our bodies and separate from each other as if they were different channels of communication that did not interfere with one another. The idea of knowledge without a knower, or language without a context, or emotion without thought or action didn't mean anything to Dewey. For Dewey, this

was the essential problem of Cartesianism that had led philosophers astray. Life is felt in as much as the continuous sensory and sensual connection we have with it is integral. This is a connection that is situated in time and space and built up over time and space. So *felt life* reminds us that the world of experience is a world that has a kickable reality both in the physical sense and also in terms of the way in which actions we take have consequences for us intellectually and emotionally.

Cognitive psychologists, and indeed HCI researchers, have deemed it useful to break down felt life into separate areas of study. One area involves understanding efficient behavior, the aim of usability engineering. Another separate area, called affective computing, deals with understanding and designing for emotion or aesthetics (e.g., [Picard, R., 2000](#)). Such separations and reductions were an anathema to Dewey because they oversimplify our lived experience and, in doing so, miss the crucial point. The point is that if you divide and separate emotion and behavior in this way you actually destroy the phenomenon you are seeking to study (see [Hassenzhal, M. \(2010\)](#) in this series for a contrary position). Dewey argued that emotion is the cement that holds action together; it is what motivates people to act, and it is what allows them to understand the value of what they do. So, in our account, we emphasized the importance of looking at experience in terms of the interplay between sensation, emotion, intellect and action situated in a particular place and time. This is what experience researchers mean when they talk about a holistic approach. [Buchenau and Suri \(2000\)](#) capture the importance of understanding experience holistically in the following quote. It is worth reading carefully to get an appreciation of the complexity of the interplay between feelings, intellect, emotions, behavior, and the physical environment. It also touches on the important idea that the experience of the current moment is conditioned by our past experiences and by other people around us. These are themes we shall develop more fully later.

What is the experience of a run down a mountain on a snowboard? It depends on the weight and material qualities of the board, the bindings and your boots, the snow conditions the weather, the terrain, the temperature of air in your hair, your skill level, your current state of mind, the mood and expressions of your companions ([Buchenau and Suri, 2000](#), p. 1).

Our account begins with the idea of an individual embodied in what the phenomenologists call the *lifeworld* ([Heidegger, M., 1927/1962](#); [Husserl, E., 1936/1970](#); [Merleau-Ponty, M., 1945/1996](#)) in which our actions have consequences that are felt. [James, W. \(1890/1981\)](#), another pragmatist, talked about this lifeworld as a blooming buzzing confusion, and the raw material of our experience as a stream of consciousness. So the first question we have to address is how do people make sense of this stream. How, on the one hand, do we ‘break it up’ into significant events with beginnings, middles and ends and, on the other hand, relate one experience to another to make a continuous fabric, which in some very real sense constitutes who we are?

### 2.3.2 CONNECTION WITH THE WORLD AND REFLECTION ON THE WORLD

Much of our connection with our environment or lifeworld goes by largely unnoticed by us. We have habitual ways of doing things that we do not consciously reflect on. I don't think about how to get on my bike or, indeed, how to ride my bike once on it; I just do it. This kind of tacit knowledge or unconscious doing is borne out of previous practice and habits formed over time. But that doesn't mean it is a passive process. Imagine the snowboarder running down that mountain in Buchenau and Suri's quote. His body is continuously making fine adjustments to his body posture and weight distribution so that he can both stay upright and head in the right direction. It is a very active engagement with the world but not a reflective one and not one in which language necessarily features very strongly as a way of making sense (at least not at the time). This form of pre-linguistic, non-conscious engagement with the world is often associated with Dewey's idea of an aesthetic experience. It refers to a situation in which our usual experience of being a *self* separate from the world and acting upon it is replaced with the experience of our body being directly connected to the world without the usual mediation of a 'thinking or talking self'. This is what Dewey and others mean by the collapsing of the subject-object distinction. It is closely associated with Csíkszentmihályi's concept of flow (Csíkszentmihályi, M., 1990).

Most experiences consist of a subtle interplay and overlaying of non-conscious and conscious action. It is often said that when you are learning to juggle, it is best not to 'think about' the act of juggling because that stops you doing it. This is certainly the experience of many novice and intermediate jugglers. But, on the other hand, when you are juggling, and something goes wrong, this is often accompanied by the experience of moving into a reflective thinking mode, "what went wrong there?"

Pre-reflective engagement with the world can only work if the world is predictable enough to allow our arsenal of learned habitual ways of interacting with it to be successful. When our habitual ways of acting are no longer sufficient, then we have to engage in a reflective process of sense making which Dewey refers to as inquiry. Others refer to the experience of 'breakdown' to capture the idea of a transition in experience from a situation in which we pre-reflectively engage with objects and people to one in which habitual forms of action fails us as we can no longer see what to do or how to do it. The object and people involved no longer seem transparent and become the focus of our conscious attention as we try to determine what to do.

The experience of breakdown, loss of transparency, and discontinuity is quite common during interaction with computers and other technical devices. For example, we have previously described in a story of shopping online, how an unexpected authoritative and strident security alert in the middle of a stream of welcoming and persuasive messages broke the flow of the interaction (McCarthy and Wright, 2004). As with this example, breakdown is often construed as a negative thing or a problem to be solved in interaction design. This way of looking at the experience of breakdown is in part a consequence of an implicit design value in usability engineering, which is transparency. As a design value, transparency is predicated on the idea of the computer as a tool

for making work more productive and efficient. The computer (or more precisely perhaps, the word processing or spreadsheet package) is something that mediates between the user and the user's goals. Just as a hammer is a tool for helping someone achieve the goal of inserting a nail into wood, a word-processing package is a tool for helping a user to write a document. As such, the important and relevant goal here is the nail in the wood or the completion of the written document. The hammer and the computer are simply means to assist in that end, and as such, they should not get in the way of that achievement. A perfect tool provides the means by which the user can achieve the goal while remaining invisible or transparent and thus creating no extra work for the user. A breakdown occurs when the tool itself become the object of work. When, for example, the head of the hammer becomes wobbly and needs to be fixed or when the column format function on the word processor does not work and needs to be figured out.

But breakdowns aren't always negative. One of the values at play in great art is the idea that an aesthetic experience is had when we are forced out of our habitual ways of thinking and doing, led to look at the world differently and to question some of the assumptions that form the basis of our habitual commonsense ways of being. One way this can be achieved is through designing breakdown that requires us to reflect on the taken for granted. In their book, *Windows and Mirrors*, Bolter and Gromala (2003) offer a range of interactive art examples that force us to question transparency as the unifying design value for interaction designers and offer a range of ways in which interactive systems can support more reflective ways of knowing. They are also at pains to point out that transparency and reflectivity are not mutually exclusive ways of knowing but rather end points in fluctuating field of sense making.

We have talked about the relationship between unconscious and reflective action in a way that might make it sound similar to logical and scientific rationalism. Dewey argued, in fact, that scientific and logical thinking can be seen as one form of experiential inquiry (Dewey, J. (1910), see also Dalsgaard, P. (2008)). But there is a more holistic understanding at play here.

### 2.3.3 EXPERIENTIAL INQUIRY

For Dewey, current experience was intimately tied up with past experience at a number of levels and in a number of ways. Earlier, we mentioned how people make sense of their current situation in terms of their past experiences and their projected futures and purposes.

Following Pierce, Dewey made the distinction between stable and precarious environments. In stable environments, people can make sense of their current situation in terms of their previous encounters with similar situations; this allows them to predict, control and transform the situation in line with their needs, purposes and imagined future states. Dewey describes the individual in such situations as contented. In contrast, in precarious environments, the individual in conflict is less able to make sense of the situation and less able to bring it in line with their own desires, needs, and purposes. In such situations, there may be frustration, anxiety, and fear, or merely curiosity, depending on the character of the situation. Such feelings of doubt, anxiety, or conflict can be the

starting point of a process of inquiry, which Dewey argues is the engine of transformation (of both individual and situation).

The first phase of an inquiry then is when this doubt or anxiety in a situation is sensed, for example, the feeling that something is not quite right and that the way forward is uncertain. Here's an example from Peter, which we will develop over the next page or so.

*I was recently attending a two-day workshop at a University in Madrid. I had not been to the University or the city before, and in the morning I had walked in from the hotel with colleagues busily chatting away, not really taking note of where we were actually going. In the evening, I was about to leave with those same colleagues to walk back with them but got into a conversation with the organizers. By the time I had finished, they had gone and my head was buzzing with ideas. I walked down the stairs, left the building, and turned right onto the street still lost in thought. It started to rain, which caused me to stop reflecting on the day and look around me. All of sudden, nothing looked familiar, and I was unsure where I was. All of a sudden, I felt quite anxious.*

In the second phase of the inquiry, according to Dewey, we are motivated by such feelings to construct an account of why we feel doubt. In short, we construct a problem that explains our feelings; usually by focusing on something about the situation which is absent or lacking.

*The feelings of anxious unfamiliarity I experienced on my walk back to the hotel soon made me realize that I was lost, of course, and that I didn't actually know the way back to the hotel. I realized that my colleagues would now be way ahead of me (even if I was heading in the right direction), and that the organizers would also probably have locked up and gone by now. It was getting dark, and I didn't speak Spanish, and I had no map.*

In phase three, the individual entertains possible solutions which Dewey refers to as hypotheses; this leads to the exploration of a number of ways in which the situation might be transformed or a number of possible interpretations of what something is or why something has happened, and, in phase four, the consequences of adopting each of these solutions as a way of moving forward is considered. Such consideration takes account of how the solutions will resolve the anxiety or doubt and how the situation will be transformed and its consequences for all individuals in the situation.

*To try and resolve my problem, I considered several options. If I had been in England, it would have been easy. I would have used my Maps app on my iPhone to locate where I was, and since I knew the name of the hotel, I was pretty confident it would be able to find me a route back there. That would have been a cool solution, but I also knew this would involve switching data roaming on, and on the iPhone, it says that this can involve substantial charges when abroad. Most people I know switch them off when abroad (what an irony for so-called ubiquitous computing!). I knew the name of a road pretty close to the hotel, so I could ask someone for directions, but even if I could make myself understood in Spanish, I'd probably not understand the answer. On the other hand, it might give me a rough idea whether I was going in the*

*right direction at all. Alternatively I could head by the university, see whether the organizer were still around, and, if not, maybe there would be a chance I would find an English speaking student to ask.*

In phase five of an inquiry, the solution which stands the best chance of resolving the precarious position is tried out. The result of this is three-fold: the doubt which permeated the situation is now resolved, the situation itself is transformed into a new one, and the individual has laid down a new means of coping that feeds into later sense-making processes.

*I decided to head back to the university. Even if the organizers weren't there and I couldn't find a friendly student, maybe I would be lucky and recognize a landmark, street name or something, and, at least, I would be out of the rain. On the way back, I passed a bus stop, and at the bus stop, there was a large map indicating where I was, showing clearly the street on which my hotel stood. What a stroke of luck! What a relief! In addition to showing me the way to the hotel, I could now see where I had gone wrong. In my distraction, I had simply turned right instead of left out of the main entrance and otherwise followed a reasonably sensible route. Clearly, next time, I should pay more attention when setting off!*

Dewey's idea of inquiry, and the example above, makes clear a number of important points. The first is that sense making is not just a passive process of absorbing predetermined meanings. On the contrary, sense making involves active transformation of situations with a view to resolving conflicts and ambiguities. Secondly, if we take a holistic view of experience, then action, motivation, and emotion are not separable; feelings drive action and action results in feelings. Thirdly, that people, when they are actively engaged in transforming their lived world, are also transforming themselves; that is learning.

### 2.3.4 CONTINUITY AND ANTICIPATION

Habits, dispositions, and intuition connect past experience to present and future experience. They represent and rely on continuity between past, present and future. Breakdown offers points of discontinuity and opportunities for learning. They thus represent points of cumulation, where new ways of being are grafted onto to already existing habits and disposition. But habits and dispositions are not simply about behaviors, that is, what people do. They are about what people feel and how they engage emotionally with a situation. Just as we have habitual ways of doing things, we also have habitual ways of feeling. We have expectations about how things will make us feel based on similar previous experiences, or upon what we have gleaned about the new situation from numerous sources.

We are continuously connected emotionally into situations. Anticipation and expectation connect past experience to present and future experience. The difference between what we imagine might happen and what actually happens is a gap that is filled with emotions, with things like, satisfaction, anger, disappointment and so on. These processes of connection, interpretation, and reflection help us make sense of our lifeworld in terms of previous experiences and in terms of anticipation of future actions.

### 2.3.5 EMPATHY AND THE SOCIAL NATURE OF EXPERIENCE

For some, this account of sense making seems to suggest that experience is a highly subjective, solitary and introspective process. Admittedly, it is all about interaction with the world, but nevertheless, it seems like the world is made up of only one individual, like Robinson Crusoe, living in solitude, responding alone to the vicissitudes of the world. However, making sense of the world is irreducibly social, and it is intimately tied up with the idea of voice and also the idea of narrative. Here are three viewpoints on experience as social.

The first viewpoint focuses on evaluative reflection on our own and others' experiences. When we reflect on an experience, we may do so because our ability to deal with the experience pre-reflectively through habit and disposition is not effective. We might also reflect on an experience or situation, interpret it, and compare it with other similar experiences, simply as part of the way in which we accumulate experiences over time. This process of reflection is evaluative. We ask ourselves, was it a good experience and how did it compare with the last time? Would I do it again? Was it an experience that is just another one of 'those experiences,' or was it something ground breaking which changes the way I think about things, and will it change the way I do things in the future in significant ways? Here's an example from Peter of this kind of reflection on experience.

*My wife recently persuaded me that we should take our daughters to a major international pop and rock festival that happens in nearby Leeds every year. We wanted to give them a sense of what it was like at such an event. All of the UK's biggest bands were performing, and some friends were going with their kids. My wife and I used to dabble in the music scene when we were younger, but we hadn't been involved for many years even though our friends took their families to big gigs regularly. In general, I don't really like the contemporary popular music scene, but, at the back of my mind, there was just a thought that this might get us into some new music that all the family could share, and that might evolve into a regular family thing. Nevertheless, I was fairly pessimistic about what kind of experience we would end up having. It would probably be raining, we wouldn't be able to see anything, and the crowds would be obnoxious. But in the end, it was a great day. The crowds were massive, energizing, and a little scary. I heard a few interesting bands that made me consider buying one or two tracks and albums. The kids enjoyed it, and it gave them some kudos at school. But, overall, the jury is out on whether this will become a habit.*

Reflective judgments are shot through with emotions and are part of what we refer to as appropriation, the process of sense making by which we take on an experience as something that we identify with and which changes the way we think and feel about ourselves, whether that's a great achievement or an all-time low. When making such judgments, we often ask ourselves what would my parents/brother/friend/lover make of that? How would they respond? Or we might ask ourselves, what if so and so (my parents/employer/police) found out I was doing this? What would they make of it? How would I explain it to them? Sometimes, when asking such a question, we can even hear the person's voice in our 'mind's ear' giving us the response! We thus make sense of an

experience not only in terms of our own experiences from our own perspective or point of view but from other people's points of view too.

This empathic ability to see the world and oneself from another's point of view is central to how we define ourselves and what it means to be human. It is the source of our moral judgment. When I am able to see an experience from someone else's perspective – emotionally and intellectually – and when that other person can see the same experience from my perspective, and when we both know we have arrived at this point then we have what we refer to as an inter-subjective understanding of that experience. That does not mean we have to merge our perspectives into a single fused point of view. It means we can each learn something about the other person's values and our relation to each other.

Some psychologists and philosophers conceptualize this way of making sense of experience in terms of the idea of polyphonic or multiple voices (McCarthy and Wright, 2004). This process then is a kind of internal dialogue that is an internalization and abstraction of actual encounters with significant others in the lifeworld. As we align our own voice with the voices of others (or not as the case maybe), we not only use them to help us make sense of a new experience but also define our own identities in relation to them and come to a judgment about them. Where do such voices come from? They come from experiences we have shared with these people or from the sense we have of what they value and how they would respond. So reflection on other people's likely response to experiences is another way in which we make sense of our own experience.

A second view on experience as social is Forlizzi and Battarbee's idea of co-experience, mentioned earlier. Many experiences we have, we have with other people. Indeed, many experiences would not be the same experience if they did not involve more than one person. Sharing an experience with someone else involves you both in a common history and thus in some common ground from which stories can be made and shared and which provide the basis for building relationships. In addition, sharing an experience with someone else gives both individuals a different perspective from which to make sense of the experience.

Sharing stories of experiences we have had is the third way in which experiences is a social process. Even if we have an experience on our own, if that experience is significant for us, we often want to tell others and others often expect to hear people's stories of such experiences. We have previously referred to this process as recounting, but it might equally be thought of as story telling.

When we want to share an experience with someone else, we have to put our experiences into words and actions, and we put those words into circulation for others to make sense of and evaluate according to their own values. Stories can never catch the totality of our lived experience; they are always edited versions. What we leave out and what we put in is a matter of choice, and we often make such editorial decisions on the basis of who we are telling the story to. When we share experiences with others we are disclosing something to the other about ourselves, and that may make us vulnerable. How people respond to our story may change the value and meaning of that story and may ultimately impact on how we think about ourselves, and whether that story becomes something we are proud of, want to own, and want to tell again. How others interpret a story can change the

meaning of the experience retrospectively. Bravery and foolhardiness are two sides of the same coin and which side lands up, depends often enough, not on the actual details of what happened but on what other people think about what happened.

Of course, stories need not only be about experiences we have had. They might be about experiences we would like to have, or we plan to have. Imagined stories of possible futures or alternative presents are the basis of our imaginative engagement with the world. Imagining alternative presents or possible futures is, of course, central to design thinking and is thus of great importance to us here. But it is also central to many forms of artistic expression from visual arts to novel writing.

### 2.3.6 PEOPLE AND THINGS AS CENTERS OF VALUE IN DIALOGUE

Values are central in our account of human experience. Elsewhere, [Wright et al. \(2006\)](#) have talked about individuals as differently placed centers of value. We have also talked about the ‘concerned’ individual. Values are about what is important to a person at a given time, in a given place, in a given situation. Values are what ultimately allow us to make sense of ourselves and others and provide an explanation for what we and they do. They also determine how we feel about the actions we find ourselves taking and we observe others taking. Concern is an other-oriented emotion closely related to empathy and perspective taking in which we as individuals express the desire to work towards the things that we take that other person to value most highly in a situation. Values are not fixed. They can change as a consequence of experience and are created and sustained through interaction with other people’s value systems.

### 2.3.7 SELF, AGENCY, AND CREATIVITY IN THE CO-CONSTRUCTION OF EXPERIENCE

As we are beginning to see, making sense of experience (or making sense *in* experience if you will) is not a passive process. Experiences don’t just wash over and get absorbed like a sponge absorbs water. Meaning is not inherent in an experience, nor does it emerge as a logical inference from experience (although sometimes when we engage at pre-reflective levels this is what it might sometimes feel like). People make meaning and often rely on past experience in doing so. But the meaning is not fixed by this process; it can always be changed and shifted as more perspectives and points of view are taken into account and more value systems are encountered. So, it may be useful to look at sense making as a kind of active, creative engagement with the world involving (either directly or indirectly) ourselves and others. In some sense then, with the help of others, we co-construct our experiences; we don’t just have them. The idea of experience as co-constructed leads us to the ideas of agency, control, and creativity as the final parts of our account of experience.

The starting point for our account of people as creative agents is a concerned person acting in a setting, reflecting, recounting, and constructing their understanding of what is going on in relation to his/her understanding of other people’s concerns and values. Dewey argued that providing the conditions necessary for social, emotional and intellectual growth was the *raison d’être* of education, democracy and society. But people are not obliged to obey the law, to follow proper procedure,

or to do as they know their wife, mother, or Prime Minister would wish. People exercise choice, sometimes through ignorance, sometimes through impulse, sometimes through a deep seated, desire to be different, sometimes through a deliberate act of disobedience or subversion, sometimes as the desire to save oneself or another from a perceived threat, and sometimes because values systems are in conflict and there is no moral authority to privilege one values system over another. Creativity stems from the ability we have to see something from two or more points of view simultaneously. The philosopher Bakhtin captured the concept of the creative act through the metaphor of dialogue, to which we will return in Chapter 4.

When two people meet in dialogue (or conversation), they each have a unique perspective to bring to bear on the dialogue. Of course, when any two people meet, there is a vast ocean of common language, common experiences, common knowledge and shared values that form the bedrock of an interaction (see [Monk, A., 2008](#), in this series). But, the difficulty of cross-cultural dialogue demonstrates both the importance of this common ground and the simultaneous existence of difference. The difference is based on the fact that no two people have lived exactly the same life. No one except Peter has been the fourth child of four born on 16<sup>th</sup> June 1957 in Lincoln, England to his father and mother, and so on. The difference perceived by both parties in a dialogue gives each what Bakhtin calls a surplus of vision with respect to the other. Each of us can see something or has something that the other does not. This surplus of seeing imbues the encounter with a creative potential that does not exist except when the two perspectives encounter each other ([McCarthy and Wright, 2004](#)).

In dialogue, with this potential to draw upon, each party can act in accordance with the other's expectations, or they can do something surprising and unexpected, making an association that the other person could not, taking the conversation in a different direction. Participants try to make sense of each other's contribution both in terms of their own perspective and in terms of what it tells them about the other's perspective. They generate expectations about where the other will take the conversation next (often at an unconscious level) and respond either to complement that or to resist and subject. So far the description makes conversation seem like a game of chess, each trying to outwit the other and, indeed, a game of chess is a very dialogical experience. But in a conversation, the objective is not defined. Nothing is finalized or inevitable, there is always the opportunity to add something, and whether one wants just to have fun or pass the time, to support the other, to feel good about oneself, all of these are possible outcomes, and none are mutually exclusive.

## 2.4 DOING EXPERIENCE-CENTERED DESIGN

The history and concepts discussed over the last two chapters focus on what experience *is*. This is a valuable, if difficult, first step towards designing in an experience-centered way. The view of the *human* in HCI becomes richer and more open once this point of view is adopted, and it thus offers greater surplus and a richer potential with which to work as designers. At the same time, of course, with its resistance to the reducing tendencies of engineering approaches, it is harder to pin down. Key landmarks in this new view of the human in HCI can be summarized as the following:

- Valuing the whole person behind ‘the user’.
- Focusing on how people make sense of their experiences.
- Seeing the designer and user as co-producers of experience.
- Seeing the person as part of a network of social (self-other) relationships through which experience is co-constructed.
- Seeing the person as a concerned agent, imagining possibilities, making creative choices, and acting.

We shall return to these landmarks in Chapter 6 when we will draw some conclusions about experience-centered design. But before that, we need to think about what this experiential perspective entails for researchers and practitioners wanting to get on with *doing* experience-centered design. This is the second step in designing in an experience-centered way and is what the rest of the book is about.

The first question to answer in this regard is how do people who do experience-centered design actually find out about the experiences they want to design for? In traditional user-centered design, designers find out about users needs through a range of research methods including observation, interview, focus groups ethnography, and so on (see, for example, [Kuniavsky, M., 2003](#), ironically named *Observing the User Experience*). These are the traditional tools of the user researcher, and they are based in the traditional disciplines of social psychology and applied social sciences. When the focus is on experience, how does the use of these methods change? Should different methods be employed? How should data be analyzed? Are these methods suitable for research questions concerning experience as lived and felt? In Chapter 3, we begin to answer these questions by exploring research methods that take their foundations in the idea of story telling or narrative. Constructing experience is intimately bound up with sharing stories. This form of research has a long research tradition behind it and offers a good starting point for finding out about people’s experiences. As we shall see, it is a rich and diverse field.

The second question to answer is what are the relative positions of the experience-centered designer and the people for whom they are designing? In a traditional engineering approach, it seemed appropriate to view the user as the subject of a research inquiry and the designer as an objective gatherer of data analyzing the lives of their subjects in as scientific a way as possible. Is this kind of relationship effective for studying experience and for doing experience-centered design? Can experience be described and analyzed in this objective way? Is the experience-centered designer an objective observer? It should already be clear that, from our perspective understanding experience requires involvement, not just observation, and that designers bring their own ways of seeing, values, sensibilities, and interests to the design process. In Chapters 4 and 5, we articulate this perspective by exploring a number of experience-centered design practices and a variety of ways in which designers have engaged with the people for whom they design. The model of engagement we use as our starting

point is dialogue, and we explore the different ways in which dialogue supports relationship building and what this form of engagement entails in practice.

The third question to answer when thinking about what experience-centered design means in practice is what commitments and values does experience-centered design stand for and where might we expect them to take us in the future. In Chapter 6, we pull together some of these commitments and values, and we explore how they can be expressed in design. Chapter 7 looks at some of the bigger questions for design as a discipline (e.g., democracy, sustainability, and the consumer society) and explores the contribution that experience-centered design might make to them.

## **Part II**

# **Doing Experience-Centered Design**

There are a number of different approaches to design in HCI. We have come to believe that the approach that best fits with experience-centered design is one that builds on the metaphor of dialogue. As you will have gathered from earlier chapters, this is consonant with the way that we approach the idea of experience itself. In order to explain what is involved in doing experience-centered design using this dialogical approach, we explore some of the ways in which designers get at experience. Here, narrative, or as we prefer to say, story, figures centrally in bringing experience into design practice. It is not about stories per se, but how they are used in the design process that singles out experience-centered design from some other user-centered approaches. In experience-centered design, stories are not solely used as a source of information but as a means of getting dialogue going between designers and users. As we will describe it in this section, the dialogical approach places emphasis on the relationships between people, knowing as a process of seeing the world from another's point of view, and design as a form of co-production.

## CHAPTER 3

# Making Sense of Experience in Experience-Centered Design

Winograd reflected, “good design produces an object that works for people in a context of values and needs, to produce quality results and a satisfying experience” (Winograd, T., 1996, p. xvi). This entails an approach to design that is centered on engagement with people’s values, emotions, and perspectives, with people’s experience and the sense they make of it. The urgent focus on user experience leaves us with questions such as the following:

- How can we capture and analyze people’s experiences in a way that is helpful for designers?
- How can this understanding be put to work in their design practice?

There is a long history of research and scholarship that spans many disciplines, which has developed practical approaches to using narrative or story as a way of gathering and understanding accounts of people’s experiences. The resulting methods are generally referred to as *interpretive or qualitative inquiry*. In this chapter, we are not going into any depth in describing the methods. For those who wish to explore this work in more detail, a framework, resources, and references can be found in an appendix on approaches to research toward the end of the book. What we want to focus on in this chapter is the thing that many of these approaches have in common, which is storytelling or narrative (e.g., Bruner, J., 1990; Bruner and Turner, 1986; Clandinin and Connelly, 2000; Polkinghorne, D., 1988). But the first thing to do is to be clear about what we mean by story.

## 3.1 WHAT’S IN A STORY?

According to the philosopher Richard Kearney, “Telling stories is as basic to human beings as eating” (Kearney, R., 2002, p. 3). He argues that stories are essential to the human condition because it is only when the events of our lives, our experiences, are transformed into story that we become agents of our history. He suggests that we transform the flow of experience into a meaningful life and into a meaningful community by telling stories of our experiences.

Storytelling is part of our everyday lives and the way in which we make sense of our experience. Even young children seem to learn very early in life how to shape stories to get their own way. They are able to slightly twist the story of ‘what happened’ to shift blame or dramatize a little knock received during a game to evoke sympathy. When they are just a little older, they construct fantastic stories of their time with friends just to engage and entertain. The storytelling gift is nourished by

practice over a lifetime as we learn to tell the often-prosaic story of our day to a partner or build up the drama in the story of our holiday adventure. What may once have been a largely domestic practice has become for some a public performance as they record and reflect on their experience in blogs and on social network sites. So in everyday life, stories are used to provide information, exercise imagination, and evoke responses from others.

We are not only skilled at constructing and telling stories, we listen to stories a lot too. From the perspective of a listener, we have experienced being bored by some stories and drawn into others. We know the potential of narrative to engage people in each other's experiences. Stories and storytelling are dialogical because they involve the storyteller telling the story not just from her own point of view but also trying to understand the listener's point of view. Likewise, the listener brings their own point of view to their experience of the story and its teller.

The basic building blocks for any story are character and plot. A good story has a cast of characters, with minds and feelings of their own, who, even when they are fantastic, are credible. They are made real by being drawn as whole beings – intellectual, emotional, social, private – with the kind of autonomy in the story that most of us feel we have in life. They have expectations that are recognizable and respond to events in ways that are credible within the world of the story. When characters are fleshed-out as whole beings with lives outside the particular situation being described, people can relate to them and empathize with them. A story also has a plot. The plot refers to the ordering of actions and events in a story, a first approximation being what might be outlined in a description of the beginning, middle, and end of the story. Implied in the plot is a narrative logic or a causal sequencing that suggests to the reader 'why' things happened in the story. In different kinds of stories (or genre), the balance between character and plot varies. In the adventure novel (e.g., a James Bond story), plot tends to dominate over character, and so we see very little change in characters over the course of a story. In contrast, in what Bakhtin calls the polyphonic novel (e.g., Dostoevsky), plot merely serves to bring characters into dialogue. For a detailed discussion of the value of the novel as a metaphor for engagement in experience – centered design see [Wright and McCarthy \(2005\)](#). Although plot and character are the essential building blocks of a story, simply describing them "will not a story make." Stories are made when storytellers put plot and character to work to forge a compelling, imagined reality for listeners or readers ([Nussbaum, M., 1995](#)).

Given that stories seem to be a powerful means by which experience can be put into circulation, the question for designers or researchers is how do we go about collecting, analyzing, and using stories.

## 3.2 COLLECTING AND ANALYZING STORIES

Story is used in design in general and in HCI in particular. In HCI, the prominence of ethnography as a methodology for understanding user experience has helped to establish story as a form for expressing both observation and analysis of experience. Ethnographies are often written in narrative form and guided by an implicit narrative structure, the kind of story we tell ourselves about the people we are studying ([Bruner, E., 1986](#)).

Julian Orr's ethnography of photocopier technicians clearly illustrates the value of story in understanding user experience. Orr, J. (1996) tells stories to make and communicate a sense of the technicians' work experiences and, in the process, demonstrates the importance of stories in technicians' construction of their understandings of their own work situations. One of Orr's stories is a four-page vignette describing a breakfast meeting of a team of technicians. Written from a first person perspective of one of the technicians, it starts with the narrator driving to the breakfast meeting. He describes the morning, the physical appearance of the area he is driving through, and his thoughts and feelings about that area. At one point, he is reminded of the old farming communities that used to live and work in the valley, harvesting fruit where computer chips and printers are now the main crops. When he arrives at the restaurant, some of the others are already there talking about a specialist technician who will be working with them later in the week. Recalling some of the site visits that the specialist made with them earlier in the year leads to a discussion of recurring problems with overused machines, some of the fixes they have tried, and the successes and failures they have had. Some of this conversation involves group attempts to diagnose problems with machines that behave particularly bizarrely. Work talk is interspersed with personal conversation, for example, about two of them having lunch together the day before. Some of the work talk is technical, and some of it is about the life of the technician.

In HCI and experience-centered design, Orr's vignettes work as complex, layered representations of user experience that give a rich first-person perspective on the work of photocopier technicians and feeds subsequent ethnographic analysis. Having read Orr, we understand the work and life of the technicians better: what they do, how they do it, how they share information and ideas with each other, what motivates them, and how they feel about their work and their colleagues. Readers develop a rich understanding of the technicians because Orr presents them as people, rounded characters each with a number of interests and traits. The quiet, thoughtful character, apparently satisfied with his own company as he drives to work, can become chatty and sociable when he is in company, without any suggestion of inconsistency or contradiction. Orr shows us his characters in different situations, and we can see how they feel and act differently in those different situations. He also gives readers a strong sense of time and place as the narrator drives through Silicon Valley, responding to it in the present and reminiscing about its past. In terms of their value to experience-centered design, it is quite conceivable that rich ethnographic vignettes would orient designers' thinking toward the experience of people involved, at least in part, because the vignette helps readers to get to know them and empathize with them a little.

Researchers collect stories using methods such as diary studies, focus groups, using drama and role-play, and evocative stimuli such as cultural probes (see Appendix and Chapter 4 for some examples). Many of these approaches involve some kind of interview. The interview technique that is particularly appropriate for story gathering is relatively unstructured so that it can remain open to participants giving their own detailed account of their experience. The narrative interview is likely to start with an opening question or invitation that encourages participants to talk about their lives

or to tell the story of a particular experience, after which the interviewer may only intervene to encourage and seek clarification.

One of John's postgraduate students, Vivien Rooney, is interviewing people who are emotionally close to another and use social media to maintain their intimate relationships when they become geographically separated. She is interested in understanding their stories of their experiences partly to understand the value of social media in these settings and partly to inform future design. Vivien's research involves interviewing participants a number of times over two years to get a sense of how their close relationship lived at a distance is developing over time and what, if any, role social media play in it. In one set of interviews, in which the importance of visual contact was explored, participants spoke about their use of webcam. Here is a short extract from an interview with a participant called Bea who is living in Ireland and whose sister is living in America. Following a short exchange about changes in Bea's use of social media since a previous meeting, Bea started to articulate her feelings about webcams.

B: you're naked when you're being viewed on camera, and I don't mean just without your clothes, I mean your whole facial expressions and lines on your face are shown and visible and they're subconscious or conscious messages, whichever, you'll see by looking at your sister, by looking in her eyes you'll see how things are and I think we pick those signals up whether we acknowledge it or not from everybody, so in some ways we like that, maybe we like just talking on the phone, maybe it frees you up from, from other things you know, maybe habit too.

V: frees you up, in what way would you mean by that?

B: maybe it frees you up because you know that you can't see a face, maybe you've just had a fight with your husband now and you've been in tears or whatever, and it's been miserable, or whatever, and she rings you, and you know the way somebody can ring you and they ring you, and it's like it's not troublesome whereas, they ring you out of the blue and you have to turn on the face, you know, and then actually you're fine, you're actually ok because you're in the scene with them and it's good for you, and it brings you away from the other thing, the moment that they've taken you out of, and then perhaps that's good, that's ok, and then you relate in a different way and that's one scene, fight with the husband is another scene, you're grateful for the fact that she can't see the red around your eyes and say to you, it's because you want to give completely whatever you want to give to her, cause she doesn't ring that often, or you're not in touch that often, or you know.

V: so it might be intrusive?

B: you can be grateful for it, whereas if the webcam came through and the, all of a sudden, turn on your computer, I'm on the phone, you'd then have to be explaining, and the other stuff would have to be visible, so I think sometimes it can be useful to have the little distance, you can even communicate better with a little distance, you can give more completely if you don't have to project your stuff on to her because she can see it in your face, I don't know how else

to explain it, sometimes, because of all the baggage that you carry, and in a life, people do, and you go through good and bad times you know, communicating with somebody who is at a distance, or who is close to you and who is at a distance to, your primary, my primary wish is not to visit them with my stuff, unless I'm in dire need.'

(Extract from Bea 2)

Vivien limits herself to encouraging and asking simple follow-up or clarification questions. She wants Bea to tell her story in her own way as much as possible. Notice Bea's tendency to describe her experience in short stories. For example, she expresses her discomfort with webcam by imagining a scenario in which it would be difficult for her to show her face to her sister when she is upset, perhaps having had a fight with her husband. Throughout the interview, she constructs scenes and events to help explain her feelings about using technology to mediate the long-distance relationships with her sister. These stories give readers a sense of the character Bea; she is in part constructing a version of her self for Vivien in the storytelling. They also give a good sense of her relationship with her sister and how it is experienced when mediated by various technologies.

There are many ways of developing a systematic analysis of a story like Bea's. We have described and given references to them in the Appendix. All involve a process of the researchers or designers immersing themselves in the story to really get to know the people involved and to get a very strong sense of the experiences being described. Some also involve processes of coding and categorizing to establish accountability for interpretations. Other approaches are less dependent on coding and depend instead on the analyst's hermeneutic engagement with the text. See the Appendix for a discussion of the balance that needs to be achieved between personal reading and public accountability when trying to understand a person's experience. Most of the various processes of analysis can also be used as the basis for identifying design issues or opportunities.

In *Narrative Inquiry*, [Clandinin and Connelly \(2000\)](#) make a distinction between the field text and the research text to capture the analytic process. As they point out, the researcher will spend many hours reading and re-reading field texts. While the initial analysis relates to matters familiar to those interested in narrative such as character, place, scene, plot, tension, end-point, narrator, context, and tone, research texts move away from this toward matters concerning meaning and significance. For example, Vivien's project includes field texts such as the transcripts of interviews, field-notes, the sense she has of the person interviewed and their relationship that she records soon after interviewing them. As she moves into a more reflective mode, she spends hours reading all of these texts to develop a summarized account of how technology mediates their relationships. This initial analysis deals with matters such as the characters involved, the places in which they live, the ways in which they manage to keep in touch, and any events that might cause them to change their routine such as a family member becoming ill. As she pursues this analysis further – more reading, more thinking, and more analysis – she begins to relate one account to another and to generate concepts to make sense of the experience of technologically mediated relationships, paying respect to but not being limited by any individual experience. A final reflective move could be to develop a research text that illuminates the social and design significance of processes of negotiation of the

meanings of communication technologies in terms of intimate relationships. This involves gaining the kind of distance from the people and events in field texts that enables the researcher to develop a response that will be meaningful in the research and design communities to which she belongs.

Aside from collecting relevant data about experience in a coherent form, narrative inquiry has a number of features that could benefit experience-centered design. As we have seen with Vivien and Bea above, it empowers people to tell their story in their own way. The user decides what themes and issues to emphasize and how to construct activities as experiences that are meaningful to them. They also decide how to present themselves in the story. Of course this means that, when interpreting stories such as Bea's, it is very important to be sensitive to Bea's connectedness to her story. It is not a depersonalized text. It is a person's effort to connect with her experience, and with the researcher, by making sense of her experience both for herself and for the researcher. In narrative inquiry, the researcher inserts themselves into the very personal process of another person constructing or making meaning of their experience.

Narrative inquiry is often used in practical settings to understand and evaluate social situations with a view to improving them. It has been widely used in education and health research, for example, where improvement involves understanding the people and their experiences in the situation. It seems to us that it would also be a valuable tool in experience-centered design. There are other approaches to collecting and analyzing experiences. For example, Anne Light's work using phenomenological interviewing to explore people's experiences receiving phone calls (Light, A., 2008). We describe this and other approaches in more detail in the Appendix. To date, narrative inquiry, as such, has not been widely used in experience-centered design, but a very rich diversity of methods based around stories, storytelling, and performance have.

We have talked at length here about the kinds of analytical work that experienced researchers do. This analytic work can be very important for students doing PhDs or for projects that require a high degree of accountability for judgments made. But it is not all necessary in all design projects. In some projects, a much more lightweight approach to the research texts will be taken. In yet others, as we will see in the next section, the field texts themselves can be a very useful resource for design (see also Gaver et al., 1999; Mattelmäki and Battarbee, 2002). Decisions about how detailed an analysis to do will be influenced by three main factors: The criteria by which the projects will be judged, the motivations for doing the research, and the nature of the questions about experience-centered design that are being asked (see Appendix).

### 3.3 USING STORIES IN EXPERIENCE-CENTERED DESIGN

Stories have been used in many different ways within experience-centered design projects. We don't propose to offer an exhaustive review of all of them. Rather, we aim to show the variety of uses that stories have been put to in design. As we mentioned above, the particular methods you choose depend on the project objectives and the research questions being asked. The examples we give below give a sense of the diversity of applications and cross user-centered design and participatory design approaches that we described in Chapter 1.

### 3.3.1 SCENARIOS, PERSONAS, AND PASTICHE

Scenario-based design uses scenarios - stories about people and their activities often involving their use of technology - as a key representation throughout the design process to reflect the complexity of human activity and to facilitate the readers engagement with it. Carroll, J. (1995) describes a good HCI scenario as having many of the features that a good story has. A scenario must establish the *setting* of the activity, the physical location in which the activities occur (e.g., an office or a sitting room), and the state of the system with which the person is interacting. It should also describe the *agents* and their *goals*. As in any good story, the relative importance of the various people and goals may become apparent in the *plot* that moves the *action* and *events* of the scenario on. The plot describes the sequencing of actions, what actors do and what happens to them, and any changes of circumstances. Finally, a scenario should be sufficiently dynamic to accommodate goals being changed by the events that occur throughout.

Along with the features identified as important by Carroll, from an experience-centered design perspective, scenarios ought to convey not only people's activities but also their motivation, feelings, the meanings they make of the interactions, and social interactions around the activities in question, much of which we saw in Orr's ethnography and the narrative inquiry approach above. By attending to the particular circumstances in which events occur as a person uses a system, scenarios try to keep human concerns to the fore in any consideration of design options.

Cooper, A. (1999) advocates for the inclusion of personas in scenarios to replace vague notions of 'users' with characters who have personal histories, goals, and feelings. He argues that designing for a vague category such as 'user' leads to arbitrary growth in system functionality and increased cognitive load for people who try to use the system. Instead, he suggests, the best way to accommodate a variety of users is to design for specific types of individuals with specific goals and needs. One of the main reasons for personifying these goals and needs is to elicit the empathy of the designers for the specific kinds of people who are likely to use the system. The idea is to make the personas lifelike even though each persona is a composite archetype of many people.

Nielsen, L. (2002) argues that scenarios and personas are flat because they emphasize plot at a cost to character. Although plot may convey the complexity of the choice that a person has to make, it fails to engage the audience in the lived experience of the people forced to make the difficult choices. Nielsen argues that if scenarios are to help bring users to the fore in user-centered design, they must be character-driven rather than plot driven. Rounded characters have many different traits, inner needs and goals, interpersonal desires and professional ambitions. They tend to be memorable. Scenarios that are constructed around and driven by their development nurture user-centered design with the empathy of the design team who recognize aspects of themselves and 'real' others in the scenarios. Curiously, Nielsen stops one important step short of using stories to their potential by adhering to the idea that design must respond to stories that correspond to a factual reality.

Whether they are factual or fictional, good stories have the power to stimulate imagination, engage interest, and highlight particular aspects of a situation (real or imagined). In a move that we find really interesting, a number of projects have moved the emphasis away from the informational

quality of fact-based scenarios to the use of scenarios to inspire in design and to evoke responses from design teams. This has involved making use of fiction, specific features of fiction such as the caricature or the extreme case, and genres such as pastiche in developing design scenarios.

Blythe and Wright (2006) illustrate the value of pastiche to enliven discussion of otherwise dry issues while at the same time helping to identify important issues. Pastiche involves using well-known characters from fiction stories, such as Bart Simpson or Dickens' Scrooge. Because people know these characters well, they can imagine how each might respond to the new technologies incorporated into the scenarios. Pastiche scenarios are particularly useful to explore the complex social and cultural issues raised by technological innovation in an engaging way.

Bødker et al. (2000) illustrate the value of caricature in scenarios to exaggerate potential benefits and problems to the extent that even extreme optimists and pessimists are drawn into questioning their own positions. Seeing scenarios as containers of ideas rather than distillations of facts, and as tools to facilitate dialogue, they suggest that, because caricatures overemphasize distinguishing features, they can make key design points more salient for participants.

In a similar vein, Djajadiningrat et al. (2000) use extreme characters, fictional users with exaggerated emotional attitudes, as a method for understanding design possibilities especially when highlighting cultural issues is important in the project. Similarly, Ljungblad and Holmquist (2007) propose Transfer Scenarios, which describe marginal practices that stand out as quite different from the mainstream, as a means of encouraging innovation in design.

### 3.3.2 DRAMA AND ROLE-PLAY

Scenarios, personas, and pastiche generally use a textual narrative to present user experience to designers. All media have their limitations. Interestingly, designers also often create them. Cooper, A. (1999), for example, describes building persona libraries, raising the questions about voice described in Section 1.2. With scenarios and personas, the designer's engagement with the user, however evocative, is mediated through the text rather than taking the more direct forms of engagement common in participatory design. Some experience-centered designers have responded, with more or less success, to these issues by making a drama out of their stories.

Often when drama is used, it is to create situations in which potential users can contribute to developing scenarios that look to future technology and use. The Dynabook project used dramatized scenarios to engage potential users in developing design concepts for the electronic book. Brandt and Grunnet (2000) interviewed people in their homes about their lifestyle and technology. Using very simple scenes and props, they then created dramatized scenarios, on the basis of what they had learned, to stimulate brainstorming. Then, the designers went back to the users' homes, with a prototype and asked them to role-play scenarios of use.

In a similar example, Newell et al. (2006), in collaboration with a professional theatre, employed a scriptwriter to create dramatized scenarios to help designers and users to identify requirements for assistive technology for older people. As most of the older people involved had little technical knowledge, Newell et al. believed that a theatrical approach to representing experience

with the proposed system would work better than a technical description for engaging their interest and involvement in realistic discussion about the system. Coming from a creative, artistic background, the scriptwriter created scenarios that, as well as illustrating how the system might work, had human interest, humor, and dramatic tension. Videos of the actors' performances contained 'stopping points' where the audience, consisting older people, professional carers, and in some cases designers, was encouraged to discuss what was happening. While scenarios generally set a shared context for discussion, the key thing about this dramatized approach is that it enabled the older people to imagine themselves in the scenarios and the designers to empathize with people of whom they may have limited experience.

Some approaches use role-play to help designers engage even more directly with people's desires and needs. [Iacucci et al. \(2002\)](#) describe a project in which a designer follows participants as they go about their daily activities armed with a simple mock-up of a future device. The very open-ended and unrestricted mock-up is called the 'magic thing' to help participants to exercise their imagination in envisioning services and product features. As interesting situations, arise designer and participant invent and act out future use scenarios.

Although less concerned with the whole performance, there is some value in thinking of *Experience Prototyping* ([Buchenau and Suri, 2000](#)) as having many of the qualities of performative and dramatic approaches in design. Experience prototypes are used to help both designer and user to experience what it might be like to engage with a product or system that is being developed. The prototypes allow users and designers to experience the 'product' themselves rather than hearing about or seeing somebody else's experience of it. For example, as part of a project to design product and service elements of a cardiac telemetry systems, Buchenau and Suri used experience prototypes to get to know what it is like to receive a shock from a defibrillating pacemaker and the kinds of situations in which users found themselves when such shocks occurred.

The use of drama and role-play as a way of re-telling stories is of interest in experience-centered design because it allows designers to experience the users' experience from their own perspective, helps users and designers to imagine possible worlds of technology use, and, as a mimetic form of representation, has the potential to create a more embodied engagement with the user experience. Participative uses of stories, which draw out their mimetic qualities, also have the potential to create embodied, imaginative engagement.

### 3.3.3 PARTICIPATIVE APPROACHES

Scenarios and personas tend to emphasize the informational value of stories over their evocative potential and, as mediating representations, raise questions about the voices of designers and users in the text. Drama and role-play speak more strongly to the evocative and attempt to engage the user more strongly in real or imagined worlds. Stories can also be used, however, to provide the starting point for face-to-face dialogue between designers, users, and others as real people. When this happens, the key point is that the experiences that are in play, through the stories, are the real lived

experiences of the individuals who are partners in the dialogue (see for example [Bate and Robert, 2007](#), who use this broad approach in health service research).

One of Peter's projects uses this kind of participatory approach in the design of outpatient services for older people at a local hospital. The process begins by getting patients and staff at the hospital to tell stories of their experiences of visiting and working in the outpatient's department. Rather than present these stories to the design team, the design team bring together those patients and staff in a series of workshops, in which the patients and staff share their stories. Collecting the stories then is not simply a matter of gathering information for design. Rather, it gives patients and staff an opportunity to make sense of their experiences through storytelling and to rehearse their stories in anticipation of sharing them with others.

Through the process of sharing stories, patients and staff build up an understanding of what the journey through outpatients is like, and they can use their experiences to reflect on the emotional highs and lows of that journey. Having identified these highs and lows, the team of staff, patients, and designers go on to think about ways of improving the experience of that journey.

For both patients and staff these meetings are often very emotional and sometimes conflictual. Patients can find themselves sharing bad experiences of the service, while being aware that doing so could imply a criticism of the staff who are present. They sometimes qualify what they are saying in order to make it clear that they are not blaming the staff, while making it clear that they feel that they might have been treated better. In turn, staff can find themselves acknowledging poor service and having to acknowledge that there is very little they can do about it other than offer trite excuses, or they might find themselves disagreeing with the patient, perhaps having sympathy for them but, at the same time, feeling that their complaint about service is not warranted and reflects their tendency to complain. In these circumstances, it is not surprising that both can become emotional, anxious, and even defensive while telling their stories. On some occasions, it might even involve a person's experience being questioned, not validated.

Grounding design in the detailed experience of patients and involving those patients in the design process is a powerfully empowering approach, which seems to us to respond to the most powerful potential of experience-centered design to engage with lived experience. It is not, however, without its problems. We have already discussed some of the emotional and political issues that one has to confront when working in this way. But, in addition, involving the potential users of design so deeply in the design process can limit the horizons and ideals of the designers. [Dindler and Iversen \(2007\)](#) offer *Fictional Inquiry* as a response to this problem.

[Riceour, P. \(1983\)](#) has argued that the creation of possible worlds in narrative enlarges reality over time, expanding our notions of ourselves and of what is possible in life. *Fictional Inquiry* recruits this power of stories to facilitate participants in imagining design possibilities that go beyond their own experiential horizons. Fantasy stories are used to enable participants to play with possibilities that breach convention. So, for example, in an exploration of the design space for an interactive school environment, schoolchildren were told a story of Martians doing research about life on earth. Pretend messages from the Martians and images of spacecraft circling the earth were used to create

the illusion of the children participating in the Martians' research. Having been drawn into this fantastic world, the schoolchildren talked to the Martians via an audio link about the contents of their schoolbag and how they used it during the day. Because of the fantasy framing of the narrative, the Martians could ask questions that would seem strange in conventional interview situations. The designers extracted themes from what the schoolchildren told the Martians, and these were used as points of further inquiry into possible design of an electronic schoolbag for the children.

A similar approach called A Critical Artifact Methodology has been developed by [Bowen, S. \(2009\)](#), in which participants are presented with scenarios and provocative conceptual designs to challenge some of their preconceptions and social conventions. So, for example, a group of older people was presented with a scenario in which their friends appeared to them as talking heads on screens mounted on special dining chairs around the dinner table at mealtime. The purpose of this critical artifact was to encourage participants to consider applications of technology they might previously have discounted as irrelevant or inappropriate (i.e., virtual dinner parties). Participants' initial reactions were incredulity and humor. However, through discussion, they came to appreciate how problems they already recognized (loneliness, isolation, and depression) could be dealt with via familiar social practices (sharing a meal). As with Fictional Inquiry, the critical artifacts had served to push the participants beyond the limits of their everyday experience with technology.

Fictional Inquiry engages user imagination in interesting ways and employs lightweight thematic analysis to draw out key issues for design. It stops short of involving participants in a deep way in the design process. In contrast, the outpatients project draws people deeply into the design process but resulting design may be constrained to the limits of their lived experience. It seems to us that a combination of the imaginative power of Fictional Inquiry, the materiality of critical artifacts, and the full participation through sharing deeply felt experience of the outpatients project would offer a powerful means of doing experience-centered design.

### 3.4 STORIES AND DIALOGUE

Recognizing from the outset the close relationship between experience and narrative, research in experience-centered design can be seen as the construction and reconstruction of stories of people's experiences with technology. We know users and their experiences through the stories they tell, and we reconstruct and re-tell in another context (e.g., discussion with the design team). As they become central to the experience-centered design tradition, stories that we hear and retell, stories that circulate in the community of practice that is experience-centered design become the stories by which we imagine what it must be like to live another person's life and by which we design for their experience. Creating a tradition of narration in experience-centered design, of creating, telling, sharing, and listening to stories, may enhance the community's ability to imagine otherness and use it in design.

But, while all of this is true, we must recognize that there are many different kinds of story and ways to tell them. In this chapter, we have described a variety of uses of story. We have seen stories used to inform and evoke a response. We have seen story used by one person to analyze

and give voice to the lived experience of another. We have seen how stories can be used to enable people to engage with the interior world of the storyteller. We have seen stories used to represent the absent user in design discussions. We have seen stories created in dramatic encounter to give designers an embodied sense of what it is like to be the user. We have seen stories used to empower and legitimate people's participation in design. We have seen story used to create imagined worlds in which dialogue about possible futures can happen.

The point of all of this is that it is not just the stories; it is how they are used that is the thing. Different ways of using stories entail different kinds of engagement between participants (designers, researchers, users, etc.). In turn, this implies different kinds of relationships. Stories do not tell themselves and stories are not heard unless there is someone there to hear them. Stories only come to life when readers enter the story world enacting relationships with author and characters. Storyteller and listener are both actively engaged and stand in different relationships to the story and to each other. The researcher may be listening for recurring patterns and themes; the designer may be listening for moments of design inspiration; the patient may be listening out for validation of their experience.

So, as we move forward, we need to address the kinds of relationships and forms of engagement that characterize experience-centered design. As we will see, these different relationships can constitute different ways of knowing from those in which participants are quite distant from each other to those in which their connectedness is integral to their knowing. The kinds of relationships that we see as most central to experience-centered design are ones in which participants are intimately and mutually connected through active listening, empathic responding, and creative understanding.

## CHAPTER 4

# Experience-Centered Design as Dialogue

## 4.1 STORIES IN DIALOGUE

In Chapter 3, we argued that story or narrative is a good way to capture and describe lived experience. Indeed, we noted that according to Bruner it is the only way. With respect to design, we considered the use of story as a representation of and a focus for inquiry into people's experience, noting that the stories people tell about their experience can influence design in a number of ways. They put people's lived experience at the centre of design, drawing designers further into an empathic relationship with users. A genuine, emphatic interest in people is required to convincingly engage with them as they discuss their experience. Asking them about their lives, and how their lives are influenced by a technological intervention, entails an ethical commitment to those people to take them and what they say seriously. Moreover, the very act of transforming what they say into a story of their experience involves trying to see events from their perspective. Without a genuine interest in people and their experience, user inquiry and design representation are likely to lack a sense of the person involved and their feelings, struggles, and satisfactions.

Julian Orr's photocopier technicians could not have been drawn as richly as he drew them, had he not been interested in them as people, had he for example only been interested in their task performance. Would they have allowed him into their circle to hear their personal conversations if they had sensed detachment on his part? Similarly, would Vivien's interviewee, Bea, have talked to her about her need to sometimes hide her feelings of distress from her sister had Vivien not shown concern for the closeness of their relationship and the dilemmas attendant on separation? And, even if they had, would either of the researchers have been able to convey the depth of their participants' experiences in the accounts they wrote without an interest in and appreciation of those people's experiences? Even if some user studies start out as academic or solely functional exercises, the power of storytelling is to engage people in the teller's experience.

Although storytelling is sometimes a polished performance in a book or on stage, most of us construct and learn to tell stories interactively, building accounts of lived experience in conversations with family and friends (Ochs and Capps, 2001). We learn by listening to others telling stories, by trying to tell stories ourselves and refining our telling in response to the hearing that we get in the faces of our listeners, and by participating in the practice and performance of storytelling. Seen in this context, it becomes clear that stories of experience do not come ready-formed rather they are brought into being in dialogue. This echoes Bruner, J. (1990) treatment of narratives of self – the

only way to represent experience - as transactional and emergent from dialogue between a speaker and an other. Focusing predominantly on the product - the formal properties of the story, scenario, or persona for example - results in a very limited understanding of both the experience and the way story engages with the horizon of experience. Something extra is available when attention is paid to the *dialogue* that brings the product into being.

## 4.2 DIALOGUE IN EXPERIENCE-CENTERED DESIGN

A number of experience-centered design projects focus on *dialogue* in their practices and representations. Some also design to facilitate *dialogue* within and between communities. These projects make a contribution to HCI design that deserves further consideration. For some researchers, identifying these projects as part of the Third Wave of HCI provides a sufficient account, where the Third Wave is characterized by interest in aspects of lived experience that had been largely neglected in HCI, such as culture and emotion, and by interactions in the home and in broader community as people engage in their personal and social lives outside of work (Bødker, S., 2006). Some of the projects we are interested in do not even fit this description as they, for example, provoke discussion about the meanings of work and play rather than positioning themselves on one side or the other of any imagined boundary. Third Wave HCI is not a precise enough description to clarify what some of the projects we are interested in are about: it does not lead to an appreciation of how they might be evaluated; it does not direct engagement with the kinds of questions and problems that these projects raise about HCI; it does not throw light on the themes we see as central to understanding these projects, relations between designers and users and the meanings of the artifacts or systems in people's lives. Before we can advance a position of our own, we need to be clear about the kinds of projects and practices we are referring to.

Many experience-centered design methods are dialogical. As a methodology, ethnography depends on dialogue between researcher and participants and results in a story written by the researcher that tries to speak from or of the participants' perspectives, sometimes in their voices. The participant-observer position and a genre of writing that strives to be multi-voiced play on tensions between different perspectives and voices. Some ethnographies of people's experiences with technology push the dialogue further by engaging with people who would not be typical of those normally included in HCI discourse, for example, homeless people (Le Dantec and Edwards, 2008) and people who take religious practice very seriously (Wyche et al., 2008). This move opens up an extra dialogue about the boundaries of the subject and its relations with wider social, cultural, and political issues. Cultural Probes, collections of evocative tasks, is another method used early in the design process to facilitate mutual, reciprocal engagement between designers and communities of users. The probes are designed to move dialogue out of the comfort zone of language and, by defamiliarizing the situation, to elicit inspirational data (Gaver et al., 1999, 2004). Cultural Commentators such as documentary filmmakers and journalists have been employed to make personal and thought-provoking stories of people's experience with the products (Gaver, W., 2007). The commentators

bring a new voice and perspective to the design process, and contribute to the potential for novelty and diversity in evaluation.

Many experience-centered design projects and products are intended to encourage dialogue. For example, the Interaction Design Centre at University of Limerick has designed and deployed interactive technologies as focused interventions in community living (Bannon, L., 2005). The Recipe Station was designed for a country market to facilitate social contact between people who would often shop there without talking much to each other. The Shannon Airport Portal Installation allowed users to select and personalize photographs from their own camera or from a corpus of public images, annotate them, and email and/or upload them to a public image gallery (Ciolfi et al., 2008). The interactive public image gallery, a collage of magnified photographs projected onto a wall, encouraged dialogue between people who were passing by and sitting nearby. The interactive portal was given the form of a modern-day, technologically enhanced, portal dolmen, the dolmen being a Neolithic stone structure common to the area that served as a focal point for communities. In development and in use, the portal encouraged dialogue between past and present, the geography of the West of Ireland and the airport, travel and community. The Digital Urban Living Centre at the University of Aarhus explores new ways of digital urban living (e.g., Dalsgaard, P., 2008) using participatory research and investigates new methods for exploring the digital potential of new interfaces by involving non-professional users in the design process (Dindler and Iversen, 2007). Urban Atmospheres (Paulos and Jenkins, 2005) uses digital media to create convivial atmospheres and to facilitate conversation and community in urban space. Net Neighbors (Blythe and Monk, 2005) is an online shopping scheme in which volunteers are paired with an older person to socialize and shop.

A number of concepts that help to mark out the space of experience-centered design also seem to be dialogical in their appreciation of intervention, participation, and responsive relationship between designers and community. For example, ambiguity as a resource for design (Gaver et al., 2003), the need to engage with multiple meanings and to stay open to interpretation (Sengers and Gaver, 2006), the shift from use to presence (Hallnäs and Redström, 2002) and the shift from function and formality to experience (McCarthy and Wright, 2004; Petersen et al., 2004; Forlizzi and Ford, 2000).

Clearly, there are many examples we could use to illustrate the points we want to make about dialogue and experience-centered design. However, we are aware of the risk to clarity in moving around among too many different projects and practices, all of which have some qualities in common while each also has its own unique features. To avoid the pitfalls, we will focus on a small number of projects for the remainder of this chapter. These projects have been carried out by designer-researchers, so we are working from both our knowledge of the work and the designers' written accounts of it. The first is Jayne Wallace's Digital Jewellery project. We have written about Jayne's work before but think it worth discussing here again as a project that very clearly uses dialogue in trying to understand participants and tries to encourage dialogue, among other things, about the personal meaning and cultural significance of jewelry.



asked to write a dream on fabric that folds out of a small pillow and to tuck the fabric away again. By focusing on dream, the pillow evokes imagination, wishes, hopes, and fantasies. Using a mixture of gesture, textual and other creative stimuli, Wallace invites participants to express something about themselves, about their lives, relationships and histories, the places they come from, their memories and hopes. After the participants have responded to the stimuli, Wallace then uses their responses as resources in conversation with them.

Wallace uses the stimuli and the conversations to try to get a glimpse of the other person's life, perspectives, and values, their own sense of who they are and what aesthetic experience and preferences they have. She immerses herself in the materials produced by the participant and in the conversation they have had together, developing a holistic sense of the other person and the relationship between them, looking for connections in the detail, highlighting ordinary moments that say something to her as well as moments that stand out. Wallace finds some threads that are familiar to her from her own experiences or with which she can empathize. As the creative response progresses, she might make a book of images that reflect how she feels she relates to the participant's responses. In this way, she allows for a tacit response and builds in her own feelings toward them.

Through our conversation with Wallace (see [Wright et al., 2008](#)), it is clear to us that although her feelings about her participants influence the design decisions she makes, Wallace does not respond to how she feels about them in any simple or straightforward way. Rather, her feelings about her participants become embedded in the interaction she has with her materials in the process of making and with the emerging artifact. She feels that she develops an empathic understanding of the expressive potential of the materials (both digital and physical) through which the emerging artifact can become an appropriate medium for the developing idea. She has a deep personal commitment to the piece being made and what it expresses of herself and her own values and commitments, not least about jewelry and identity. For her, this performance of making is a process of learning rather than simply reproducing or representing an idea in another medium.

As an example of her jewelry, *Blossom* is a hand-worn piece, made from wood, glass, silver, and vintage postage stamps ([Wright et al., 2008](#)). The piece is not meant to be worn in a traditional sense and does not center on ideas of adornment, but is made to be worn by cradling the glass dome within the cupped hand as a contemplative form of digital jewelry object. The jewelry object resides with its owner in London and is connected to a rain sensor planted on her family land in Cyprus. The postage stamps inside the glass dome are initially closed like the petals of a flower. But they are attached to a mechanism, which can be actuated when a signal is received from the rain sensor. This happens once the rain sensor on Ana's family land in Cyprus registers a predetermined quantity of rain, which may take months or even years. When the signal is received, the mechanism is activated; slowly opening the postage stamps like petals of a flower blossoming. This would happen only *once*. After which, the petals would remain open.

There is also a strong aesthetic dimension to Wallace's practice. The evocative stimuli, briefly described above, are beautifully made and presented and she wants to make beautiful jewelry. For her, this beauty involves personal connections between the artifact, participant, and often another



**Figure 4.2:** *Blossom.*

person, object, place, or experience. She also wants the piece to work in emotionally significant ways for her participants and to be reflexively related to what is meaningful for them as the jewelry itself becomes in some way meaningful for them. Wallace has a number of conversations with participants when they are living with her jewelry to try to understand how they feel about it and make sense of it. This may include discussion of their feeling about the piece on emotional and personal levels as well as her feelings about it as a piece of digital jewelry in the context of her expectations of jewelry and how this particular experience relates to those expectations.

Dialogue runs through Wallace's process of making. Dialogue with the person for whom she is making, before and after the object is made. Dialogue with materials when the object is being made, as well as with the other person, who though not physically present is there in the fragments of insight and inspiration derived from earlier interactions, and with an imagined or emerging piece of jewelry. It is arguable that the dialogue between designer, participant, and artifact, and between all together participating in broader societal discourses on jewelry and digital artifacts are integral to Wallace's practice and to what she makes.

#### 4.4 THE PRAYER COMPANION

Dialogue is also central to the work of the Interaction Research Studio, led by Bill Gaver. We mentioned Cultural Probes and Cultural Commentators above as examples of dialogical methods he and his group have developed. However, instead of focusing on their methods here, we will focus on a specific design project, which, without using those methods of engagement between designers and users, produced a device in a context that strongly suggests a reading in terms of layers of dialogue.

Our account is drawn from a recent project in which Peter has been involved. The project was a collaboration between Peter, Mark Blythe at York University, and the Interaction Research Group at Goldsmith's, and it was funded by the UK's New Dynamics of Ageing Programme (see [Gaver et al., 2010](#)). Mark was responsible for establishing and developing the contact with the nuns and the extended fieldwork that took place. The Interaction Research Group led the design work, but both groups worked closely together.

In a convent, in a city, in the North of England, a small T shaped object stands under a notice board, on a box table, in a corridor, at the bottom of a major staircase. It displays a moving stream of text on top of the horizontal part of the T. The text consists of news headlines and short statements about personal feelings. A small group of elderly, enclosed nuns live in the convent. Most of them have very little contact with people from outside the convent, and they observe silence among themselves for most of each day. They pass by the table with the T shaped display on it many times a day as they go about their business, on the way to and from refectory, prayers, and to the garden. As they pass, they sometimes catch a glimpse of the text out of the corner of their eyes and continue on. Sometimes they pause to see what the device is displaying.

'Five soldiers killed in Afghanistan'. 'Ships collide off Southern Japan'. 'I feel lonely'.  
 'Missing girl found'. 'Fears over missile build up in Iran'. 'I feel thirty-four'. 'Jailed Baby  
 P lodger wins appeal'. 'Retail sales increase 0.3%'. 'I feel so'.

It is amazing how much news it shows in a minute. Some of it drifts away. They carry some of it with them, mulling it over as they garden or sit in chapel. They read the detail of some of the stories on the Internet later. The thought of a missile build up has some of the nuns holding their breath. Noticing that a missing girl has been found has them feeling thankful. They empathize with some of the feeling statements and get irritated by or laugh at others.

The Prayer Companion is 35cm high, roughly the size of many Catholic altar-top artifacts. The nuns did not want it to be obtrusive and the design team, having suggested some larger vertical displays, opted for this smaller, horizontal design as being more in keeping with the lives of the nuns. The design team was interested in making a contemporary piece that would fit harmoniously with the convent's existing fittings and the small T-shaped display satisfied that aim as well as the nuns' preference for something unobtrusive. The color, a deep burgundy, was also intended to be sympathetic to the palette of sacred artifacts already in the environment. The nuns commented on the similarity between the shape of the Prayer Companion and the Tau Cross, an ancient T shaped symbol of Christ's cross. The Tau Cross had not been discussed by the nuns and designers, and it was not one of the design team's aims to create something that looked like a sacred artifact, but the design team had researched relics and religious artifacts in the Victoria and Albert Museum in London.

The scrolling text display is presented in the horizontally mounted screen, the top of the T. The text that is displayed consists of a stream of headlines from a variety of news sites mixed with short sentences from [wefeelfine.com](#), a site that crawls social network sites to collect statements of feeling. The news headlines are taken from 25 sites including some of the major global news sites,



**Figure 4.3:** *The Prayer Companion.*

sites from areas like South America and Asia to ensure broad international coverage, and some local sites. The selected headlines are eight or fewer words long and are tested for their efficacy as news digests by ensuring they have a subject-verb-object structure. The mix was intended to balance the collective and global news headlines with some more personal and idiosyncratic messages. Most of the time the selection of items to display is made randomly, but for one minute in twenty, the display behaves differently. It might show feelings or local news only, or it might show one item repeatedly. This variation was intended to pique interest without being disruptive. Originally, the mix of news and feeling statements was half and half, but the number of feeling messages was reduced to quarter after the nuns reported finding the frequency of ‘I feels’ annoying. The design team also inferred from the nuns’ comments that they found it hard to know how to respond to ‘I feels’ in their prayers. The design team discussed with the nuns ways in which they might interpret ‘I feels’ as revealing something important about the authors rather than as requests for prayer. This seemed to make a difference to the nuns’ response to the feeling statements. They began to think of the people who were writing them as possibly unable to pray for themselves even though they are sometimes in a state that seemed to the nuns to be the start of prayer. Some began to link their ‘I feels’ to their undertaking to pray for those who can’t pray for themselves.

The Prayer Companion was developed as an ongoing reminder of contemporary events and concerns that could be possible topics for the nuns' prayers. It had become clear in discussions with the nuns that they saw prayer as their work and that they wanted it to be pertinent. For many of them, this meant that they needed to have some knowledge of what was going on in the world so that they would carry it with them as they went about their daily business. This way, as they lived in the presence of God, they brought the missile crisis, the missing girl, and the lonely person into the presence of God. The designers had made an object with a very specific form that was clearly 'about' something, but it was also an object that was open to interpretation and appropriation by the nuns. As they note in their own account of it, the designers could not have understood prayer as the nuns did, and so it was necessary to give the nuns something that was sufficiently open and ambiguous to allow them to appropriate it for their own use. Such appropriation would have been less likely had the designers not been very specific about the form and materiality of the device, which was accepted into the home and lives of the nuns rather than treated as a distraction.

The Prayer Companion project builds on a number of layered dialogues between the design team and the nuns. Initially, Mark Blythe made extensive field visits to the nuns establishing a relationship with them and bringing back stories, anecdotes, and photographs for the rest of the team at Goldsmith's. Later, as the design evolved, the rest of the team made various visits in different roles and combinations, with different people taking the lead. After each visit, stories were shared with the rest of the team at design meetings.

The dialogue is also multi-layered in another sense, including the relationships between past projects involving display design and this project, the forms of historical sacred artifacts and the desire to make something contemporary that would fit into the nuns' lives. Two of the most revealing dialogues are embodied in the relationship between the Prayer Companion and the life of the convent: the formal and functional specificity of the artifact complementing the ambiguity of its meaning and the computational supporting the spiritual experience. The relevance of both became clear only as an understanding of prayer as a way of life emerged.

Wallace's approach to the design of digital jewelry and the Interaction Research Studio's design interventions in community and domestic life both engage with participants and communities – when developing design ideas and when designing and deploying – in ways that push the often implicit boundaries between designers and users and between design and intervention in HCI. Wallace wants her work to provoke reflection on and dialogue about jewelry, digital technology, embodiment, and identity. The Interaction Research Studios' work explores the design of computational systems for everyday life by creating situations that encourage playfulness, exploration, and insight. In our third and final example, a project called Silence of the Lands (Giaccardi and Palen, 2008), where the focus is creating opportunities for dialogue and community. Silence of the Lands used digital media to creatively facilitate dialogue and community around people's encounters with their natural heritage. One of the main aims of the project was to encourage a community to get involved in its natural heritage by walking into the land and collecting and collectively interpreting the natural sounds that are encountered during a walk.

## 4.5 SILENCE OF THE LANDS

Participation in Silence of the Lands (SOL) was organized through long-term partnerships between the project team and community stakeholders who were interested in exploring patterns of interaction with the land. This partnership took the form of an outreach program scheduled as one part of an area-wide nature and hiking program. A part of this larger initiative, the City of Boulder organized a program of ‘sound-walks’ and workshops extending over a number of weeks. The program enrolled 20 people of different ages and backgrounds.



**Figure 4.4:** *Silence of the lands:* Catching sounds.

Participants collected sounds from nature using sound cameras. Each recorded sound was linked to the person who collected it and associated with GPS data determining its location in space and time. In the project, this is called ‘data catching’. The designer, Elisa Giaccardi, hoped that listening closely for sounds would promote direct, sensory engagement with the land and nature and, ultimately, a personal, reflective experience of the natural environment.

The individuals collected 1,300 sounds during their walks and worked with them afterward. The sounds were transferred to an online database and made available on a website. Participants could describe their own sounds and compose them into a personally meaningful soundscape. When a number of personal soundscapes were available, members of the community gathered around an ‘interactive table’ that displayed the available sound collection to construct their ideal soundscape, the one they would like to preserve and in which they would like to live. This was a collaborative, communally, creative activity of ‘data interpretation’ in which representations were produced and images



**Figure 4.5:** *Silence of the lands*: Creating a shared soundscape.

evolved. The idea was that participants connected to other members' experiences to imaginatively build a shared representation through collaborative play.

By harnessing some of the barriers between people and settings produced by spatial distances ('voices from far away'), temporal distances ('voices from the past'), conceptual distances ('voices from people with different knowledge and values'), and technological distances ('voices embedded in the artifacts'), the cross-media infrastructure of SOL enables information to flow through unique but layered interaction spaces and 'circuit' or connect cultural experiences, interpretations and expectations. As a result, the community's shared representation of the natural heritage is constructed bit by bit, according to new forms of practice encountered in the interaction spaces across which information migrates (Giaccardi and Palen, 2008).

Connecting with other people's experiences of the landscape as reflected in the sounds they had collected, they created with others their ideal landscape through what Giaccardi et al. (2006) called "conversation pieces of a social dialogue on natural quiet" (Giaccardi et al., 2006, p. 1). They suggest that Silence of the Lands enabled people with different perceptions and values to communicate their experiences and perspectives using natural sounds rather than words. The project was designed to encourage engaged listening, expressing and sharing experience, and the production of narratives to foster public participation and support community development.

Although there are many differences between these projects, they also share certain interests, concerns, and practices that are particularly relevant to our attempt to clarify the relationship between dialogue and experience-centered design and to see how dialogue might be a useful conceptual resource in experience-centered design. They share a commitment to creatively fostering dialogue in their design practices and products. Conversation is integral to all three projects. In Silence of the

Lands, it is both process and product. It is also integral to the convent community's slightly changed interactions with the world around them, amongst themselves and with the Prayer Companion itself. The Digital Jewellery project's commitment to a relational view of jewelry has resulted in designs that encourage and support dialogue between a person's past and present, different places, and between people. There is also another sense in which they are all committed to dialogue, that is in their response to the other as thoughtful, emotional, volitional people with values who are well able to participate in shaping their own lives and in making technology meaningful for them in it, not as feeble users (Cooper and Bowers, 1995).

The projects' commitment to dialogue, in their different ways, is what holds them together as a coherent grouping for our purposes here. Focusing on their dialogical practices also highlights issues that are less likely to be raised, or at least in this particular way, by simply thinking of them as Interaction Design projects or examples of Third Wave HCI or by casting them in terms of narrative. For example, focusing on dialogue raises questions about:

- The *contacts* and relationships between users, communities, and designers in the process of making. When dialogue is used as a lens, designing, making, and understanding are approached from the perspective of communication between the people who are involved.
- The meanings of products and interventions. Dialogue focuses on the ways in which people give products meanings through their experience with those products and the conversations they have about them.
- The social, cultural, and political aspects of experience-centered design interventions. Thinking about these interventions in terms of dialogue suggests consideration of whose voices are heard and whose are not in design and in interaction with the system?
- How knowing is understood. Dialogue is associated with approaches to knowing that are inter-subjective rather than objective.
- The designers' *sensibilities* such as playful engagement in the sense of putting things into play, an orientation to openness and ambiguity, and an understanding of interaction as embodied (see McCarthy et al., 2006; Wright et al., 2008).

To begin to consider how we might address some of these questions, we need to look more closely at the conceptual resources made available by adopting a dialogical position on experience and interaction and examining their potential value in experience-centered design.

## CHAPTER 5

# What do We Mean by Dialogue?

In everyday use, the word *dialogue* is associated with talk and is often used to refer to conversation involving two or more people. However, *dialogue* also has a technical use in communication studies (Anderson et al., 2004), social sciences (Hicks, D., 2002), art theory (Kester, G., 2004), and as we have seen above, experience-centered design. In its technical use, the focus is on experiential, relational, and community approaches to communication, knowledge, and identity, and it is associated with empathy, active listening, and perspective taking.

Dialogue or dialogism (Bakhtin, M., 1984, 1986) signifies an important phase in the development of studies of communication in which the phenomenological or experiential aspects of communication were brought into focus. Following the technical invention of mass communication and the theoretical and engineering advances of cybernetics, both of which emphasize aspects of information transmission, human communication as dialogue places the emphasis on relationships. A dialogical approach to communication focuses on the processes *between* the people involved rather than on what happens within each one of them. It sees all of those involved in communication as mutual, present, and responsive to each other.

Similarly, in art theory, the development of dialogical (Kester, G., 2004) and relational (Bourriard, N., 1998/2002) aesthetics brings into sharp relief the experience of the audience and the relationship between artist and audience, so much so that ‘audience’ becomes as ambiguous a label as ‘user’ often is in experience-centered design. Kester, G. (2004) study of the emergence of dialogical art as a coherent set of practices analyses the pivotal role of communication between artists and communities in developing collaborative relationships between the artists and the communities with which they work. He describes art projects that bring unlikely groups together in novel settings to engage in dialogue about how to improve people’s experience by intervening in a particular social situation. For example, he describes art projects that are concrete interventions in the social situations of drug-addicted women, disenfranchised communities, and schools. According to Kester, these collaborative projects depend on “a conversational mode in which each interlocutor works to identify with the perspective of the others” (Kester, G., 2004, p. 113), dialogue not as tool but as ethical and aesthetic engagement.

Similarly, there are moves toward the dialogical in the social sciences. Kester’s conceptualization of a dialogical mode of conversation was influenced by Fiumara, C. (1990) philosophy of listening and the feminist epistemology of Mary Field Belenky and her colleagues (Belenky et al., 1986) presented in their important book *Women’s Ways of Knowing*. The idea of *connected knowing* is central to Belenky et al.’s approach. They propose that the kind of detached, objective knowing conventionally associated with science and rational debate be seen as one form of knowing, not the

only. They call it *separated knowing* and describe it as depending on distancing the person from the knowing and valuing practices such as doubt, opposition and argument. They offer connected knowing as an alternative. Though still procedural and reasoned, it involves trying to understand an idea or theory from the inside, from the perspective that generated it, so as to see what can be learned from it. Connected knowing has two key components: recognizing the social context from which the other speaks and acts and redefining the interaction between reader and writer as empathic. Hicks, D. (2002) brings this kind of dialogical knowing to life in her multi-voiced account of “the complex histories of working-class children’s engagements with literacy practices and searches for love and belonging” (Hicks, D., 2002, p. 4). She brings the children’s voices into dialogue with her own so that the reader can really feel the children’s experience. She also brings her own history and experience to bear as a lens through which the children’s experience is sometimes refracted. This became particularly illuminating when different family values around education and literacy became relevant. She also introduces literary and sympathetic philosophical voices into the narrative. Hicks’ responsiveness to the children and respect for their lives, even when they exposed values that were not hers, in both the research to find out about their experience and the novel genre for writing about their experience evokes a similarly dialogical response for readers. The following quote from Hicks, in which she compares her own experiences as a child with her readings on educational literacy, goes some way to the complexities of these dialogues.

When I think back to the richness and complexity of my own girlhood experiences, I am filled with words and images that do not readily fit within the discourses of cultural and critical literacy research. But of what value are the memories of that small history for those who study literacy? What is their value in shaping theory, research and practice? These are questions that have guided me towards hybrid languages of enquiry that are as complicated as a young girl’s struggles to make sense of some pretty powerful meanings and practices in her life. I have turned to the languages of literary memoirs to help shape a theory of reading reflective of the complexity of actual reading practices (Hicks, D., 2002, pp. 37–38).

Although there are some differences among uses of *dialogue* and although *dialogue* may best be seen as an ongoing, unfinalizable project, as we have seen, there are some key ideas that form a nexus around which practices with a dialogical family resemblance gather, a set of ideas that resonate with dialogue and mark out a space in which to reflect on its value. These ideas position *dialogue* as a metaphor for both how communication, knowledge, and identity are experienced and for how they could be enacted in practice. In this context, dialogue is both emergent and transitory *and* it is a model for effective communication and collaboration (Anderson et al., 2004, p. 2 and p. 16).

Dialogue puts the focus clearly on processes *between* people. It sees communication, knowledge, and identity as constructed in *relationships* between people, not within individuals. For example, connected knowing is a relational alternative to the alienating, authoritative voice of detached knowing that offers instead an epistemology based on recognizing the perspective of the other. Similarly, dialogical aesthetics understands and reflects critically on art in terms of the relationships between

artists and the communities with which they work. Often, this is more than a metaphor when the artwork or project presents itself as the crystallization of the dialogue between them. Reflecting on the Prayer Companion in terms of the mutual processes of understanding each other, and the joint construction of the potential for computational support of prayer that nuns and designers engaged in together, can also be instructive. In each of these examples, as well as in the Digital Jewellery project, coming to an understanding of people and of interventions in community, is emotional and concerned with values, as well as being intellectual. Artists, researchers, and designers, as well as the communities they work with, can be changed by the encounter and the relationship.

For the remainder of this chapter, we will develop our understanding of dialogue further by focusing on three ideas that seem to us most relevant to experience-centered design. As we do so, we will also explore some of the ways in which these ideas can help generate interesting questions about experience-centered design and suggest conceptual resources for beginning to answer them.

## 5.1 CREATIVITY AND OPENNESS

Understanding experience was a preoccupation in the design examples discussed earlier in this chapter. Wallace thinks of her approach in her Digital Jewellery project as an empathic immersion in participants' evocative stimuli and the conversations she has had with them around the stimuli.

Instead I considered the set of responses more in terms of a puzzle: a collection of bizarre stories, descriptions of objects, hopes, dreams and memories. I use the term puzzle not as something to solve, but rather something to enter into, a different pair of shoes to step into (Wallace, J., 2007, p. 125).

In the Prayer Companion project, the design team was not interested in making something that responded to a particular need but rather seeing their design, in part, as their contribution to an ongoing conversation about the meaning of prayer and the role that technology might play in it. This reflected values that were important for the design team. One is a commitment to the agency of the nuns whose experiences and meaning making can only ever be incompletely understood by designers. Against this background, comes a second commitment to the value of open design, providing the potential for research into ways of addressing the possibilities and problems of the situation of interest.

Both projects adopt a revisionary approach to understanding in which understanding involves creating new ways of seeing the world and is open to change in future experience (Dewey, J., 1934; Shusterman, R., 2000). In the Prayer Companion project dialogue between designers and nuns, and living with the Companion for a while, resulted in new ways of seeing prayer, the feeling statements, and computer support for prayer. Both projects, as well as Silence of the Lands, are interested in enriching people's experience whether it be a deeper understanding of prayer, a closer connection to the land or family. For all of them, this involves practical intervention in a particular socio-cultural situation – much like Dewey's approach to inquiry and Kester's to dialogical art. For example, in the

Digital Jewellery project the Blossom piece provoked a strong emotional response and important insight.

...when it blossomed, it kind of upset me that it was only the once, and I thought ‘oh my god!’ (laughs) but ...if it wasn’t only once then that would defeat the object ... for me anyway... I mean that was a kind of crucial point for me, when I started blubbing (laughs) when it said it ‘only blossoms once’ and I was just like ‘oh!’, ‘yeah!’ and it, I sort of *got it*, that it was sort of, represented life really and that, erm, you only live it once... (Ana interview transcript lines 155 - 161)

(Wright et al., 2008)

For Dewey, the fruit of dialogue is participation and sharing in which all events are re-considered and revised to meet the requirements of the conversation. Aware of the creative potential of action, he suggests that, in conversation, events are turned into meanings, which may make present events that are distant in time and space. In addition to their original existence as events, “their meanings may be infinitely combined and re-arranged in imagination” (Dewey, J., 1929, p. 138). This resonates with the spirit of the Silence of the Lands project. After contemplation and dialogue, a deflection from “the rapid and roaring stream of events”, events “rejoin the main stream, and color, temper and compose its course” (Dewey, J., 1929, p. 138). Following Dewey, it is important to realize that after user study and design intervention, life goes back to its prosaic best for participants in our studies and for designers, perhaps slightly shifted in direction and slightly differently toned.

Understanding in dialogue then is less about apprehending intended meanings than it is about producing new meanings by which to test emerging ideas (Gadamer, H., 1979). In the interpersonal context, new meanings come about through engagement with the other person, thinking about them and what they do, experiencing the resistance to ready interpretation as they speak back in what they say and do, and puzzling over that resistance to see what has to change to generate a plausible interpretation. The change could involve a new way of inquiring or even a new perspective on self and other. This is an unpredictable and multi-vocal process permeated by voices from past experiences, current certainties, and imagined futures.

Dialogue can be infused by uncertainty between people about what they mean, how they feel about each other, and what their responses should be. It is in that open and sometimes risky encounter that something new may be created. As the design projects described earlier in the chapter demonstrate, the uncertainties are made creative through sensitive conversation and careful listening.

The dialogical approach to understanding experience has practical implications. Remember the outpatient project we briefly described in Chapter 3, which brought together older people, outpatients, hospital staff, and designers in a series of co-design workshops. This involved a dialogical approach to communication between designers, health professionals, and service users, talking about their experiences of the service, which shifted the focus away from collecting information or re-hashing old nostrums to producing new understandings of the service through their interaction. In the context of the experience of the service users and staff, the dialogical approach valued the kind

of openness and mutual respect that fostered the kinds of communicative experience that resulted in the co-creation of new meanings.

New understanding is created in the respectful, responsive engagement with dissimilarity. Trying to understand other people, including users, by foregoing one's own perspective may reproduce existing knowledge but will not produce new understandings. For that, as well as a willingness to engage with the other person's perspective, some separation or distance is also required. It would be worth asking of experience-centered design projects like Digital Jewellery, Prayer Companion, and Silence of the Lands whether they encourage dissimilarity or similarity in their processes or products. Do they encourage different voices in their engagement with users and difference in voice when engaged with single users? Do their interpretive methods work toward or accommodate a variety of understandings or do they favor a single reading and conclusion? Assumptions of homogeneity between designers and the communities or individuals they serve, or assuming or prizing homogeneity within these groups, is likely to work against open creative dialogue. To appreciate the importance of diversity to understanding user experience, a dialogical understanding of the relationship between users and designers is needed.

## 5.2 RESPONSIVENESS: RELATIONSHIP BETWEEN DESIGNERS AND USERS

We have already described some of these qualities of thought and talk: attentive listening, imaginatively entering into the other's speaking, a disposition of wanting to learn from the other, willingness to risk changing one's own perspective, engaging with the other's perspective and values even when they are greatly different from one's own. Perhaps underpinning all of them is a relationship with the other that treats them as people with feelings and values and is responsive to those feelings and values. Hicks, D. (2000) calls this "richly seeing" the person as a separate center of value and unique individual. For her, this involves:

... seeing this separate center of value as unique and then forming a response to it from the special value position that is one's own. ... The particularity of one value center enhances that of another; as Bakhtin describes things, one value center (one individuated subject) envelops another, enriching the other with an outside perspective (Hicks, D., 2000, p. 231).

Although the language suggests something very demanding and refers to communication that is treated as very special in some contexts, it can also be read as something achievable that experience-centered designers should aim for. We selected the particular examples of experience-centered design on which we have concentrated in this chapter because we feel that, in their different ways, they reach for a two-fold contact between users and designers. As do other experience-centered design projects.

In experience-centered design, people's lives and worldviews may change. All of the participants (users and designers) are involved in an encounter that may change, even very subtly, the way

they see themselves, their activities, and their lives. When a design team of mixed ages, backgrounds, and beliefs and a community of nuns who give their lives to God and to prayer engage responsively with each other, some change of perspective is likely for both. The design team may come to an understanding of the nuns' prayer life that is emotionally and valuationally connected rather than detached. They might feel differently about spirituality having gotten to know the nuns and their prayer lives. Interestingly, the nuns may also shift their understanding of prayer. Even after a lifetime committed to prayer, hearing how important it is for a teenager to feel wanted and to have that need heard and validated, might open them up to an experience in their prayer that they had not previously had. And both may learn about technology and design as they reflect on its use to mediate prayer.

This kind of mutual learning is made possible through dialogue by the acknowledgement of the other as a different center of value. It involves empathically understanding the other in terms of the context from which they speak and act. It is always approximate and provisional, never final. The test is not objective truth but veridicality. Whether we believe in prayer or not, to claim to understand something about the prayer life of enclosed nuns requires a believing disposition that accepts it as deeply meaningful and real for them, that writes about it in as lifelike a manner as possible, and that acts towards it responding to the richness of this other centre of value. The value of knowing in dialogue is framed by responsiveness, not objective, detached knowing. This kind of knowing comes from a commitment to listening in dialogue.

### 5.3 LISTENING

In terms of the dialogical approach to experience-centered design that we have been outlining here, the point of turning to listening at this stage is to draw attention to what any of us might do to begin to work in a creative, responsive, and open way. In fact, you have already seen it in the ways in which the designers worked in the design projects above. Their way of working is intimately tied up with the practice of listening and, in particular, an approach to listening that [Fiumara, C. \(1990\)](#) calls 'active' or 'attentive' listening.

Active listening involves going into a situation with the minimum of preconceptions about what we will hear and the understanding that it may be necessary to change how we already think about the people, practices, and events we find there. It is a bit like going into the situation as a learner rather than a teacher, wanting to be taught about prayer life, intimate relationships, or engagement with the natural environment. It involves not hearing what people say as familiar problems to be solved or needs to be met to which we already have a response. By thinking about the situation in terms of problems and needs, we already impose our frame of reference rather than listening to what the other person has to say. Active listening involves listening to a person's story and, in dialogue with them, creating new meaning.

How this kind of metaphor works out in design practice can be seen in the Prayer Companion project. The Prayer Companion, as an artifact, is a new design yet it is very much in the Gaver style of ludic design because it carries many echoes of conversations that the design team have had in

other contexts. But, at the same time, the Prayer Companion responds to and expresses the specific conversations that the design team had with the nuns. As a consequence, the nuns recognize aspects of themselves in that artifact. For example, the characteristic horizontal display echoes conversations that were had about the need for an unobtrusive artifact.

As the Prayer Companion project shows, active listening entails an imaginative act of moving over into the life of the other person, in their uniqueness, to experience the other side of the relationship, in order to imagine quite concretely what the other person is feeling and thinking. But, in such listening, moving over is done without taking over or projecting oneself into what the other is saying. Fiumara puts it this way:

The message from the other will not attain its expressive potential except in the context of a relationship through which the listening interlocutor actually becomes a participant in the nascent thought of the person who is talking. But a listener can only “enter” in a way which is at once paradoxical and committing: ‘by taking leave,’ by standing aside and making room (Fiumara, C., 1990, p. 144).

Attentive listening is not primarily about the listener but about making space for the speaker to speak. Listening that attends to what the other is saying suspends any automatic responses of approval or disapproval in favor of a disposition of ‘not knowing’ and wanting to learn (Todd, S., 2002).

Kester introduces a number of artists whose activist art begins with and depends on careful listening, an aesthetics of listening. One of them, Jay Koh, is particularly interesting with respect to the centrality of listening to his work. As Kester puts it:

For Koh an art practice that privileges dialogue and communication cannot be based on the serial imposition of a fixed, formal, or spatial motif ... Rather, it must begin with an attempt to understand as thoroughly as possible the specific conditions and nuances of a particular site ... For Koh it is even more important that Western artists and institutions, for whom the “assertive tradition of saying” comes so naturally, also learn to begin by listening (Kester, G., 2004, p. 107).

Experience-centered design is not immune from the tension between the assertive tradition of saying and the need to listen carefully. A dialogical perspective on design is likely to raise questions about listening in projects, even if there are no easy answers, and perhaps should not be, to the challenges of practicing attentive listening. For in attentive listening we listen not only to the language but also to the otherness of the other person.

Listening, indeed finding different ways of actively listening is critical in experience-centered design, as can be seen in the projects we focused on in this chapter. Before designing and making anything, they engage in an open engagement with users. This is especially so in Digital Jewellery and the Prayer Companion, which involved an openness to the experience of others and an engagement with them that is about mutual learning and which preceded any making. With respect to experience-centered design in general, we might reflect on the extent to which design processes attempt to

thoroughly understand the nuances of the site and make space for users to speak and be heard. As Koh suggests with respect to community art, the vulnerability of the designer, their willingness to feel what users say and respond meaningfully in design is a good indicator of active listening.

## 5.4 CONCLUSION

We have explained the importance of dialogue in constructing representations and processes in experience-centered design. We paid particular attention to three design projects using them as examples as we tried to explain some quite difficult concepts. We could have chosen other equally insightful and illustrative projects but felt we knew these three well enough to do a good job with them. Early on, we set ourselves an aim for this chapter which was that we would demonstrate how an analytical lens like dialogue could be practically useful in terms of understanding what is happening in areas of HCI that emphasize experience in design. We suggested two routes to this understanding: what issues and questions does dialogue suggest that are unlikely to be suggested by other approaches and what does dialogue suggest about evaluating such projects. In the previous three sections, where we explored the relevance of three characteristics of dialogue to experience-centered design, we identified the following issues and related evaluation directions.

- The emergence of specific evaluation criteria from the dialogue between users and designers, during which designers are likely to learn a lot about what their general ambitions for the project mean to users.
- The need for reflection on practice, in evaluation, that pays particular attention to the diversity of voices heard in design and issues of control over which voices were heard.
- The critical value of dissimilarity of voices, values, and perspectives to understanding user experience and evaluating experience-centered design projects.
- The growing importance of empathy as a concept to describe user-designer relationships, and the consequent need to attend to the reciprocity of the relationships and the changes in people's experience that results from design projects.
- The dialogical construction of the user in experience-centered design for example as people with feelings and values who can contribute to shaping their own futures or as unable to engage at an appropriate level to participate in the project.
- The value of knowledge that is created in designer-user dialogue and the need to appreciate its strengths and to be able to critically evaluate it.
- The extent to which design processes attempt to thoroughly understand the nuances of place and person and make space for users to speak and be heard.

This is not a complete list of all the issues raised by dialogue for experience-centered design. But even as an incomplete list – and one we have tried to make as practical as we could consistent

with explaining the value of dialogue – it poses real challenges for experience-centered design and the people who involve themselves in it. Many of these challenges have strong ethical dimensions, an important one of which is that each of us appreciates the skills and experience we have and don't have when engaging in dialogue with users.



## **Part III**



In the previous two sections, we have covered a lot of ground, first, by looking at the roots of experience-centered design in the humanist agendas of user-centered and participatory design, and then by exploring in some depth the practice, methods, and concepts behind it. In this section, we want to do two things, firstly, we want to recap and draw together some of the key points from those earlier chapters. Secondly, and perhaps more importantly, we want to re-visit that humanist agenda and explore what to us is the real excitement of experience-centered design. This is the possibility it offers to give people a richer life, to include people who might otherwise feel excluded, and to ensure that everybody has a chance to have their say. It can do this because it can focus on design issues that matter to people in a way that they can understand and engage with.

## CHAPTER 6

# Valuing Experience-Centered Design

In this chapter, we revisit some of the issues and themes discussed in the previous chapters to address the question of what's involved in the practice of experience-centered design, over and above commitments to involving users, rapid prototyping, iterative design, and the other principles and practices of user-centered design.

## 6.1 VALUING THE WHOLE PERSON BEHIND THE 'USER'

As we suggested in Chapter 3, 'the user' has become a problematic term in HCI (Kuutti, K., 2001). The problem is that, by framing people as 'users,' HCI practitioners and researchers connote a limited role-relation between people and the technology, namely that of *tool user*. This framing has been productive in HCI, leading to quality criteria such as transparency (Bødker, S., 1996), the idea that the interface, like other tools, should be transparent to allow users to concentrate on their tasks. Ease of learning and efficiency also follow from this conception of the person-technology relation. But, like all conceptions, it has its limitations, and experience-centered design overcomes some of them. Experience-centered design takes a holistic perspective on the people who use computers, seeing them as active in defining the nature of the roles they construct for themselves and the relationships they enter into with other people (including researchers and designers) and with technology.

To think of a person holistically requires us to acknowledge the tight relationship between what people do and how they feel about, give value to, and to give meaning to what they do and to what happens to them.

To think of a person holistically is to think of them as having a past, present, and future. The past, their biography or history, is a cumulation of their experiences over time, over places, and over other people (i.e., over situations). This history is part of what defines them as a person with preferences, dispositions, values, and attitudes. It also provides them with a set of resources with which they make sense of their experiences in order to act in or on the current situation. Importantly, it is not just who we are in this historical-biographical sense but also who we want to be in terms of our imagined futures, our dreams, our needs, and our desires that go to make us who we are. Seeing what a person wants to be, or could imagine themselves as being, is part of seeing the whole person, and is an important part of how we make sense of and act in a situation in order to transform it.

To think of a person holistically as a person with a past, present, and future entails thinking of them as embedded in complex and changing social networks within which they enter into different

relationships and roles with others each day, as lover, as worker, as colleague, and as friend. The many different roles we play and relationships we have are a significant influence on what we are and what we do, a central part of our identity, and our image of self. In *Technology as Experience*, we used Bakhtin's notions of *voice* and *otherness* to discuss the influences that other people, whether present or not, have on who we are and what we do.

One important consequence of this holistic view for designers is that they need to understand that people always come to a situation with expectations, based on their previous experiences, which shape how they make sense of this new situation. This may be an explicit conscious process or at least have conscious components, as is the case when we reflect on a future event like going to hear a concert. We wonder what it will be like, whether the band will play our favorite number, and whether we will be able to see clearly. At other times or in other aspects, this process may be more non-conscious, tacit, or implicit. In our everyday routines, we make certain tacit assumptions about the way both physical and social situations are configured. When we go down a stairs we expect there to be a floor at the bottom, not a drop. Surrealist art plays around with these tacit assumptions about the way things are. Similarly, in social situations we have certain tacit expectations. In the UK, and in many Countries in Europe, I do not expect to walk into a boardroom meeting and be kissed on the cheeks by strangers, especially by other men, but in France, this can happen.

But another equally important consequence for designers is that we can tap into this wealth of experience. By working with people's past experiences, we can unearth and challenge some of their tacit assumptions and stimulate their imagination and their aspirations. We can begin to design the things that really matter to them.

As we have seen in Chapter 3, if we want to understand the whole person and the richness of their experience, a tried and trusted method is by gathering stories. In Chapter 3 and in the Appendix, we have described at length the skills and the sensibilities that are required to work with people in this way. As we saw in the Prayer Companion and Digital Jewellery projects, it isn't simply a matter of sitting down with them and saying 'tell us your story.' This is because, over a lifetime of story telling, people get used to constructing scripted, stereotypical accounts of themselves. As Bakhtin would say, people finalize themselves for others. They do this to present a tidy and easy-to-understand persona that does not embarrass them in front of whoever they are talking to. Imagine answering the question, "and what do you do for a living?" in a number of different situations. People often avoid the inconsistencies, the bits that don't add up, are personally sensitive, leave a person vulnerable, or are just downright hard to understand. As a consequence, asking a person to tell you about themselves doesn't always work. It can produce reduced accounts carefully tailored to what the person thinks is needed by the other, the researcher or designer.

Another problem with story telling is that much of who we are, what we have done, and what we might hope to be is not always obvious even to ourselves. Much of the way we make sense of the world is what we might think of as tacit, part of the taken-for-granted of who we are. Understanding the whole person involves finding ways of making the taken-for-granted visible for reflection. As a consequence, creative forms of engagement, which involve the person in reflecting

on and opening up their own understandings of themselves and the taken-for-granted in their situation, are often useful for understanding experience. As we saw in the Digital Jewellery project, open or projective techniques, such as evocative stimuli and cultural probes, which require the person to creatively construct imaginative responses, rather than simply report on factual evidence, are particularly valuable in this regard. The content of such creative responses is shaped in part by the person's understanding of the purpose of the project, in part by the nature of their relationship with the person for whom they are creating the response (usually the designer/researcher), and in part by their own history of experiences and the sense of self they construct for the designer/researcher. In turn, the interpretation of people's responses is shaped by, among other things, the designer's interests in the project and their understanding and use of the probes. Hence, it is the kind of dialogical process that we have described in Chapter 5.

## 6.2 VALUING THE DIALOGICAL NATURE OF DESIGN

In HCI, researchers often break problems and issues down into two types, those associated with the design context and those associated with the use context. This can be very useful but it is also useful to try to understand both design and use as human activities that are very tightly interconnected and have many similarities that constitute the basis for dialogue between designers and users. Experience-centered design tends to focus on these interconnections and use them as a resource for design.

One important interconnection is that both designers and users try to make sense of situations to appropriate, adapt, and transform the situation to meet their needs and the needs of others. A concrete situation, a particular configuration of needs, desires, people, and things in a particular place at a particular time, is the catalyst for sense making. It both enables and constrains possibilities for transformation. And this really sums up the fundamental dialogical idea of sense making. In some critical sense, meaning does not reside in the situation or thing with which we interact, nor does it reside in the head of the person preformed. Meaning making is co-production at the point of interaction. Designers influence meaning making in two ways. The first is in terms of what they do with the materials. The second is in terms of the degree to which they can anticipate the people who will participate in the situation. This involves connecting with those participants as whole people and the values that they will bring to the experience. A sensitive designer will always remember that design is an open, creative process, in which they may sometimes be surprised and have to revise their decisions.

The dialogical approach to sense making is not a passive one. It is not about a person absorbing the meaning like a sponge absorbs water. As we described in Chapter 5, it involves active listening and responsivity. Like our description of Dewey's notion of inquiry in Chapter 1, this is an active process of interpretation based on well laid down schemas from previous experiences, and it is a process of active reflection and reasoning when habitual ways of interpretation fail to render a unified meaning. But more than this, it is a process of active transformation of the situation in order to make sense of it, to understand how to move forward with it, how to transform the situation and the self in ways that settle the person in a new relationship or new mode of being with the situation. Exploration,

curiosity, and learning by doing are all aspects of this approach to understanding sense making. The idea of making sense of a situation, in order to transform it (as a way of achieving a stable productive comfortable or unified relationship with it), and to be transformed by it (to achieve new understandings and to realize new potentials) speaks to a restless, creative, actively engaged image of the person.

As we discussed in Chapter 4, no situation is inherently finalized. Certain aspects of its meaning may be indisputable, but there are always aspects of a situation that are open to interpretation and amenable to (sometimes subtle) changes of meaning. Although people share many common experiences and ways of making sense of situations, no two people have identical experiences and so may come to different understandings of any situation. At the same time, each person may be able to see the situation from the other's point of view and enter into dialogue about the situation on that basis. As we saw in Chapter 3 with respect to Participatory Design, the openness of a situation to other interpretations and other forms of action is not always obvious. Indeed, when an organization or a person finds themselves in need of a designer, it is often because they realize that they have a limited point of view on a situation and they need someone to offer them a different point of view so that new possibilities can be seen.

There are many kinds of resources that a person can bring to a situation in order to make sense of it. In a design situation, two of the most valuable are theory and precedent. Both have their value as ways of making sense of a situation but both can also be used in closed and unhelpful ways. (For people faced with new situation of use, theory and precedent are also important resources for sense making but here we shall concentrate on design situations.)

### 6.2.1 THEORY AND DIALOGICAL DESIGN

A theory can be used to finalize a situation by giving it a fixed set of meanings. But the strong imposition of a particular theoretical point of view creates a number of problems. Firstly, since more than one theoretical perspective can be brought to bear on any situation, what sanctions the choice of one theoretical perspective over another? Of course, there are times when one theoretical perspective is more appropriate for a given problem than another. Problems arise when the choice of that theoretical approach is not explained; it can come across as using a preferred theory again regardless of its relevance or value in the situation. So it is always better to justify the imposition of any theory. A second issue is that theories used in HCI tend to be theories of the use context. They are very good at richly describing and even explaining how people interact with situations. But it is sometimes difficult to use these theories to envision new possibilities, which is the point of design.

There have recently been debates in HCI research about ethnography and the problem of extracting "design implications" from thick descriptions of a use context (Dourish, P., 2006). Here some detailed ethnographic account of the use context is undertaken and, through a process of qualitative analysis, design implications are extracted from the data. As can be seen in Chapter 3 and in the Appendix, the process of analysis might involve the identification of themes relating to design. This approach can be misleading when it is assumed that the design implications can be inferred

without any creative or imaginative intervention of the person doing the analysis. On occasions, this may be true. Sometimes participants come up with their own design solutions, particularly in participatory design where the user is clear as to the design purpose of the research.

At other times, however, the design ‘implications’ have to be imaginatively constructed from the data. These skills might be better understood as ‘seeing’ design potential in rich descriptions. In the Appendix, we describe the creative and almost artistic aspects of the interpretive skills of a qualitative researcher in making sense of their data. Even though this can be a very creative and imaginative process, it may still not constitute seeing *design potential*. In order to see design potential in rich descriptions, it might be necessary to bring to those rich descriptions a designer’s eyes. It may be easier for a designer to see design potential in a situation than it is for the qualitative researcher.

In Chapter 3, particularly in the Digital Jewellery project, we have described similarly artistic processes at work in responding to the participants’ evocative stimuli. This, of course, brings us back to where we started, which is that this is not about deriving design implications in a logical deductive manner from some theory of use context. Rather it is about seeing a situation from a number of perspectives. It is about bringing different perspectives together in dialogue.

In this dialogical approach, theory takes on a new role in design. Building on our discussion of Dewey’s experiential approach to inquiry in Chapter 2, theory can be used in a creative way to constrain the possibilities for action but at the same time to generate a range of possible interpretations. Thus, theory can be used to filter out obvious and grossly bad ideas, to inspire design discussions, and perhaps to provide a language within which to frame those discussions. Theories become a resource in the design dialogue, and the designed artifact is a response to those theories and concepts rather than a derivation from it. This idea of using theory as a resource for dialogue avoids the finalizing tendencies of approaches that assume there is one correct theory or one possible best design solution. It maintains openness in the design process that is a stimulus for innovation. But, of course, there is a time in any process when designs have to be finalized and agreed if only temporarily. So this is not a matter of being open or closed in design thinking. It is a matter of when.

### 6.2.2 PRECEDENT AND DIALOGICAL DESIGN

Our discussion of the role of theory in dialogical design runs the risk of over-emphasizing the role of theory in making sense of new situations. Indeed, the role of previous similar experiences may be more important than theory as a resource in making sense of a situation in order to move forward. Previous experience can have many relations to current experience. It can range from vaguely resembling to being identical. It can be analogous. Previous experiences can confirm ways of proceeding, or they can serve as contra-indications to proceeding in certain obvious ways. All of these things allow us to make sense of current concrete situations in relation to our experiences of past situations.

Design education proceeds as much by precedent as it does by theory. Exemplars of great design are commonplace in design textbooks. For example, Antonelli, P. (2006) book *Humble Masterpieces* celebrates the insight and quality of design thinking that has gone into everyday objects from jelly beans to soft contact lenses. Similarly, Dormer, P. (1993) *Design Since 1945* provides a history of

design exemplified by some of its greatest and most iconic products. In addition, [Dormer, P. \(1993\)](#), like [Moggridge, B. \(2006\)](#) in his book about interaction design, also celebrates the great individuals and teams of people whose experience transformed those designs into a reality. Good designers, like good artists, are very aware of the tradition to which they belong and to the artifacts that are heralded by their communities as great. As well as serving to define a certain culture of design, historical precedents also serve designers in solving current design problems.

Usually however, experience-centered designers do not simply try to fit a pre-existing solution to a novel problem situation. Rather, they use design precedents as resources for making sense of new situations in interesting ways. Elsewhere ([Wright et al., 2006](#)), we have argued that the many design disciplines have a toolkit of styles and languages that are sometimes referred to as genres ([Brown and Duguid, 1996](#); [Wright and McCarthy, 2005](#)), which can be used as the starting point for innovation. In literary theory and cultural studies, the term genre is used to identify a collection of things such as certain styles of novel or musical form, which, once identified, creates certain kinds of expectations to be used as resources for sense making. Knowing that you are reading a detective novel generates certain expectations and habitual ways of understanding what is written. But visual languages in design, and genres in literary and musical theory, allow designers to identify classes of possible solution that are known to work together. Unlike more scientific classification systems, genres have permeable boundaries. Sometimes crossing those boundaries stimulates innovation and moves a discipline on. Good designers then push the boundaries of a genre in order to provide innovative design, which is nevertheless connected to previous design. [Brown and Duguid](#), use the example of Jazz to show how innovation emerges when genre boundaries are pushed:

In jazz, for instance, Miles Davies claimed that Wynton Marsalis was too respectful of old forms to go anywhere new. Other musicians, however, criticized Davis for moving too far beyond the conventional forms to be understood. Almost every time that he moved across musical boundaries, Davis was charged with incoherence. ... Before long, however, it became apparent that he had built a new audience for his work, and a new frontier for musicians - often led by Davis himself - to cross ([Brown and Duguid, 1996](#), p. 142).

This example also reminds us of the importance of critical reflection in design practice ([Agre, P., 1997](#)). Reflective practitioner's continually question assumptions and ways of sense making. This kind of critical reflection is particularly well facilitated when radically different points of view can be brought into contact through disciplines working together. Different disciplines have different points of view and different ways of making sense of a situation, and these different perspectives on the same design problem offer significant surpluses for forging new frontiers.

In dialogical design, using precedents is not about forcing a new situation into old habitual ways of thinking and acting. Rather it is about moving an accepted design solution out of its old context and into a new one in order to change how we make sense of both the design solution and problem situation. [Buchanan, R. \(1995\)](#) described this dialogical way of thinking as the 'doctrine of

placements,' a kind of conceptual re-positioning of the design problem. He contrasted placement with the more scientific notion of classification thus:

Understanding the difference between a category and placement is essential if design thinking is to be regarded as more than a series of creative accidents. Categories have fixed meanings that are accepted within the framework of a theory or a philosophy, and serve as a basis for analysing what already exists. Placements have boundaries to shape and constrain meaning but are not rigidly fixed and determinate. The boundary of a placement gives a context or orientation to thinking, but the application to a specific situation can generate a new perception of that situation and, hence, a new possibility to be tested. Therefore, placements are sources of new ideas and possibilities when applied to problems in concrete circumstances (Buchanan, R., 1995, p. 10–11).

By moving a concrete design problem out of its habitual placement and placing it in some other disciplinary context or orientation, an innovative solution can occur. For example, instead of seeing a building as a physical space, its habitual placement, it could be viewed as an emotional space or an information space.

## 6.3 ENGAGING WITH PARTICIPANTS IN DIALOGICAL DESIGN

In the dialogical view of experience-centered design, the designer is not a detached isolated individual who observes but does not affect that which is observed in order to derive in the logical implications of design propositions from the abstract user data. Instead, the designer is involved in dialogue with the participants, each person trying to understand the other's point of view, and their needs and desires, and trying to understand how best to contribute something to the growing mutual understanding of the current situation and possible futures. The designer and the user are both changing the situation (as a form of inquiry) in order to learn from it and understand how to go on.

### 6.3.1 A VARIETY OF FORMS OF ENGAGEMENT

As we saw in Chapters 3, and 4, a design process that is dialogical and centered on experience is not constrained to a particular form of engagement with users. There are many forms of engagement that can be productive for experience-centered design. There are many ways of understanding the experiences of another and many types of relationship that designer and user can enter into. We might design from our own experience assured in the knowledge that we are designing from a place of shared cultural knowledge and values (Margolin, V., 2002). In this approach, the product of our design process can be understood as putting an experience into circulation (McCarthy and Wright, 2004) or as posing a question or making a statement to provoke a response from others (Redström, J., 2006; Dunne and Raby, 2001).

If we are less confident that we share that pool of common experiences, and we are convinced there are gaps and differences to be negotiated (Gaver et al., 1999), we might engage strongly with

users through, for example, a cultural probes study and then go away and leave the users alone while we think up some great ideas with which to surprise them and to take them to places they would never have anticipated. In this case, the product of the design process might be understood as a gift or as a surprising and pleasing turn in a conversation. At the other extreme, we might involve users directly in the design teams, working with them, using our expertise and skills as designers to push their imagination as far as we can in order to come up with a transcendent design. In this case, the product of the process is something that is shared and owned together (Dindler and Iversen, 2007; Greenbaum and Kyng, 1991). In all three approaches (and there are many variants in between), the focus is on a deep understanding of the other which is achieved through empathy, co-experience, and dialogue.

### 6.3.2 EMPATHY AND EXPERIENCE

Empathy is thus a central methodological construct in experience-centered design (Wright and McCarthy, 2008). Empathy has been recognized as an important aspect of user-centered design for a long time, but it has also often been used quite loosely to refer to any form of user involvement. In experience-centered design, it has a much deeper meaning and implies fundamentally different ways of understanding the user experience and responding to it in a dialogical way. It is a particularly significant consideration when we focus on the whole person and their experiences. This is for two reasons. Firstly, we cannot really understand another person's experiences simply by observing what they do or by surveying their attitudes and opinions. Secondly, while all individuals share some experiences (e.g., common culture, family histories or co-experienced events), at the same time, every individual is different. Empathy is about being able to imaginatively construct the world from another person's perspective, while at the same time remembering one's own point of view in order to creatively work with the difference. Bakhtin called this *creative understanding* and emphasized that if empathic understanding were just about 'fusing' with the other, that is, becoming identical with the other, there is nothing to be gained. It is only when we can understand the world from another's position while at the same time maintaining our own that something new can be produced:

Creative understanding does not renounce itself, its own place in time, its own culture, and it forgets nothing. In order to understand, it is immensely important for the person who understands to be located outside the object of his or her creative understanding- in time, in space, and in culture. For one cannot even really see one's own exterior and comprehend it as a whole, and no mirrors or photographs can help; our real exterior can be seen and understood only by other people because they are located outside us in space and because they are others (Bakhtin, M., 1986, p. 7).

## CHAPTER 7

# Where Do We Go from Here?

## 7.1 SOME PERSONAL STORIES

Products have become commodities and the post-industrial nations have developed a commoditized society whose rhetoric is growth and development, which is associated with ever better technologies. The use of terms like growth and development in economic and political discourse could be questioned and challenged to see what work they are doing in the discourse. We know, for example, that growth in one country may be at a cost to the economy and people of another country. We also know that growth and development are often used in very narrow ways in political and economic discourse to mean increased output or increasing technological sophistication, often without consideration for whether people's education and wellbeing grows and develops as well. Let us explore some of these issues with Peter telling some stories about his experiences and reflections on experience and commodification.

*My children are great fashion followers both in clothes and in digital products. They track developments on product innovation. They are acutely aware, for example, of the latest developments in touch-screen phones. You might think that they get this from me, but, in fact, I am a late adopter of technologies, and most of my product acquisitions come through my work and not through personal lifestyle choices.*

*No, my children get it from their peers. They see other people with the latest technology, and it is straight onto their Christmas or birthday wish list. When they were very young, this was partly due to the novelty and excitement of the shiny and new, but, at an early age, it became about keeping up with their friends and not being marginalized by their peer groups because they didn't have the latest gadget. Now, they are teenagers; their fascination has become more nuanced. They are aware that a touch phone offers a much more enjoyable interaction, makes texting simpler and quicker and far less fiddly, but these things are still badges of identity and membership.*

*My children like many others are children of the consumer society, and much of design practice, product design, graphic design, packaging and even user-centered design has serviced that society and the business objectives of those that both fuel that market and meet its demands. But consumer culture is not just about children nor is it just about products. Experience is the most recent thing that businesses have packaged and sold to all comers.*

*When my wife Janet and I were young, our great passion was mountaineering. When we went to university, we joined the university climbing club, which took us all over the UK to places*

*we had never been. We learnt painfully and slowly to rock climb, from sometimes-reluctant old timers and from our experiences in these new places. Soon, we developed a desire to be closer to the big mountains and to learn to climb snow, and so I looked to the North for employment, and we moved to Scotland where I undertook a PhD.*

*We learned from people in the various clubs that we joined about the skills needed to climb, navigate, and hopefully survive the Scottish Mountains in winter. All of this soon became part of a bigger plan, to get the experience we needed to go Alpine Mountaineering and possibly even climb the biggest mountain in Europe, Mont Blanc. In the succeeding years, we spent many holidays climbing in the Mont Blanc Massif, and we climbed many Alpine Peaks, but somehow we never got around to Mont Blanc. We did, however, make another life changing decision, which was to give up our careers and spend time living in Nepal and climbing in the Himalayas.*

*One afternoon in May of 1986, I stood on a fifty-degree ice slope at an altitude of around 20,000 feet, about 2000 ft above a mountain pass and a few hundred feet below the summit of Mount Pharchamo. A quarter-inch of tungsten steel on the front points of my crampons, helped my feet stay in place while the points of two ice axes supported my upper body.*

*Janet was about 50 ft below me. There was no rope between us; we were soloing, we were entirely alone, and there was total silence. The sky was the deepest most intense blue I had ever experienced. As I looked to my left, I looked across toward the Tibetan Plateau; to my right was the glacier and icefall that we had spent four days climbing to get to where we were. Below us, our tiny tent sat alone, bright red against the white snow and black rock of the mountain pass where we had spent the previous night with no food or fuel.*

*There was no wind, the sun was intensely hot, and the air intensely cold, a combination that only seems to occur at altitude where the air is too thin to retain the sun's heat. My breathing was labored, even when I was standing still. There just didn't seem to be enough oxygen in the air for me to catch my breath. My head ached intensely, more than I had ever experienced before or since. Each kick of a crampon into the ice sent a searing pain through my head, behind my eyes. I knew these were the early signs of altitude sickness, probably brought on because we had not had fuel to melt enough snow to make water the previous night.*

*Despite all this discomfort and suffering, I realized, at that precise point in time, I realized that this was the culmination of everything Janet and I had dreamed of and worked towards for so many years; it was the culmination of what had given our lives direction, meaning, and purpose for so many years, and it was destined to be one of the defining moments of our lives together.*

*We don't climb big and dangerous mountains any more, but Janet and I do still climb. We go on holiday most years with the same people that we climbed with when we were undergraduates. We've all got kids now, some of whom climb.*

*I met someone recently while I was walking in the hills. I asked whether he 'got out much' and he said no, but that he was in training to do Mont Blanc. I assumed he must be an experienced Alpine mountaineer, and I was envious because I had somehow missed out on Mont Blanc all those years ago. I asked him what other mountains he had done in the Alps. He said none. In fact, he had never been to the Alps or even climbed outside of the UK for that matter. But his friend had been given a 'Mont Blanc Experience' for his 21<sup>st</sup> birthday, and he was joining him on it. This involved plane flights and transfers to Chamonix, a small village at the foot of Mont Blanc, where they would be met by guides who would equip them give them some basic training and take them safely up the 'tourist route' to the summit and back over a couple of days. It certainly would be a 21<sup>st</sup> Birthday to remember!*

Or would it? This kind of packaged experience can, of course, significantly change a person's life. On the other hand, it could be just another one of those things, another version of tourism in which the aim is ultimately to be able say, "been there, got the tee-shirt."

## 7.2 DESIGNING THINGS THAT MATTER

Margolin, V. (2002), in his chapter *Expansion or Sustainability: Two models of development*, argues that although the consumer model of society requires continual product innovation, built-in obsolescence, and fashion-based marketing to drive global prosperity, such a model is ultimately limited by the fact it reduces prosperity and well-being to technological innovation.

However, the expansion model is dominated by a belief in the power of technological innovation to enhance human experience, a relation predicated on the claim that the satisfaction material goods can provide is without limits. Furthermore, materialism has become so integral to notions of happiness that product development is now almost inextricably bound to the striving for human betterment (Margolin, V., 2002, p. 84).

Experience-centered design can be appropriated uncritically in service of this technology-driven model of innovation, which simply equates wellbeing with having more of the latest stuff. But if this happens, then the real potential of the turn to experience will be lost. Because fundamentally, the turn to experience offers an opportunity for critically deconstructing consumerism's narrow equation of enhanced experience with more and better technology. Technology clearly has an important role to play in enhancing people's lived experience and society, but technology innovation has to be guided by richer understandings of growth and development; understandings, which are, in fact, at the heart of the richer conception of experience that is being developed in experience-centered design.

The question and the challenge for experience-centered design researchers and practitioners is to find the means of harnessing the potential of experience-centered design to bring about change that really matters to people and to society and to open up a space where designers can have the opportunity once again, to help shape society towards some of the bigger issues of significance in our lives both individually and as a society. The question is how do we do that?

### 7.2.1 CONTINUITY, CUMULATION, AND TRANSFORMATION

To begin with, it is helpful when planning design projects to think about the big picture. To ask the question, how would I like the thing that I am going to design to impact the lives of the people I am designing for and the society they are part of? We saw in Chapter 4, for example, how these questions featured in the design of the Prayer Companion, how the team responded to them by building a relationship with the nun's and working hard to understand the Poor Clare tradition, what prayer meant to the nuns and how technology might impact their life.

One of the key principles in Dewey's philosophy of experience, which also provides a valuable principle for experience-centered design, is the principle of *continuity* and the related concept of *transformation*. With these concepts, we can move between the lifeworld of the individual and the larger design context of society and culture. Dewey used the principle of continuity to describe the way in which experiences are a continuous interchange between present and past and between personal and socio-cultural in that:

... Every experience both takes up something from those which have gone before and modifies in some way the quality of those that will come after (Dewey, J., 1938/1997, p. 35).

The environment is changed by us and changes us, but the environment presents itself to us the way it does, not only because of the developmental forces of nature, but also by virtue of the history of its interactions with mankind. Once again Dewey captures this well:

In a word, we live from birth to death in a world of persons and things which in a large measure is what it is by virtue of what has been done and transmitted from previous human activities. When this fact is ignored experience is treated as something that goes on exclusively inside an individual's body and mind (Dewey, J., 1938/1997, p. 39).

For Dewey, although he was not concerned specifically with design, he clearly saw design as an activity that is fundamental to human experience. As users and designers, we engage with persons and things in this environment in order to create or structure experiences for our selves and others, present and future, close and distant. The designer's role then is to design the conditions for experience that do the following: build on people's past and current experience; can be understood in terms of their past and current experience; and allow those people to transform their current environment in ways that will positively enhance or transform their future experiences.

For Dewey, ensuring the continuity between past, present, and future experiences is at the heart of the development and growth of individual and society. Each successive generation builds on what has gone before, transforming it for the next generation. The role of the designer, like the role of the educator, then is to structure present experiences such that they connect with past experience, and, at the same time, to transform the present in such a way that present experiences live on into the future in a way that enhances subsequent growth and learning.

How will the things we are designing enter into a person's lifeworld, become of use to them, enhance the quality of their lived experience, and transform their ongoing and future experiences

before ultimately leaving them? As designers, how do we ensure that the experiences our products and services support are not only good, but also transformative?

### 7.2.2 AN ECOLOGY OF THINGS

To help answer these questions, it is useful to remember that experiences are not subjective and do not happen in isolation. In Dewey's accounts of experience, he argued that experience was better understood in terms of what we would recognize today as an ecological metaphor, in which an organism (or, as Dewey would have it, a live creature) is involved in tightly reciprocal interactions with an environment. The environment is potentially infinitely variable. It is not a fixed unchanging environment but an environment that is changed by and changes the organisms with which it interacts over time and space. Neither is it simply a physical environment; as well as natural physical objects, it consists of man-made material artifacts, including objects, symbols, and languages. It is also importantly an environment that includes other people. Dewey sees this environment as defining the conditions of our experience, or the situation in which the live creature finds him or herself, and which he or she seeks to interact with and make sense of.

The design theorist, [Margolin, V. \(2002\)](#), inspired by Dewey's ideas, uses the term 'product milieu' to capture the idea of an ecology of designed objects, images, systems and services, both material and immaterial, that fill our lifeworlds. Products (and people) are drawn together into networks within the product milieu as a result of human actions. Consider, for example, how a banking service is produced by bringing together various products. Individuals too bring together and sustain complex networks within their products milieus for example linking iPhones, cameras, music files, and web servers to share experiences with friends and family, or create an identity for themselves in the digital public forums. It seems to us that some of the most successful products and services, in this area, enter into existing ecologies of socio-cultural practice (such as music downloading and sharing) and, in so doing, gradually transform the practice, changing the ecology and creating new possibilities for further product innovation.

### 7.2.3 TRAJECTORIES AND VALUES

Products, like people, have their own trajectories through product milieu, which they share to a greater or lesser extent. They have a variety of lifespans; consider the lifespan of a house or stately home compared with that of a car, mobile phone, or Nintendo game. Products are often mass-produced and identical and thus have much history in common, as well as much in common in terms of functionality and looks when they leave the factory. However, as people use them and they intervene in people's lives, they become more individuated in the realm of meaning and use. Products take on a personal history that gives them value. Think of antiques, think of a copy of the Beatles *Let it Be* song sheet signed by John Lennon, but also think of the paper knife I have on my desk which was my father's, bought on a seaside holiday when I was 8 or 9 years of age.

We can make a distinction between inherent and personal value. Inherent value is the importance and significance placed on a product by the community in which it resides. Sometimes, this

value is associated in people's minds with its monetary value, such as is the case with an artwork or an antique car. The inherent value in a product comes into contact with my personal needs, histories, and values during my encounters with it and, as a consequence, takes on a layer of personal significance, relevance, and hence value. A product, whether it is the *Let it Be* song sheet or a new iPhone, thus has its inherent values (shared by the community in general), but it also has personal value to me and any one else that has encountered it. These values may be consonant or dissonant. I might dislike the Beatles and be scornful of the pop culture of celebrity; for example, I may not be able to understand how to use an iPhone, or have no need for it, or find it difficult to justify in terms of cost or ecological values even though at the same time I enjoy and respect the importance of these things to others.

Although, in the example above, we have talked as if our experience of a product begins when we first physically interact with it; it is important to remember that our experience of a product generally starts long before our first physical interaction. It starts when we first hear about the product or service through the media or from someone else who has experienced it. The lifeworld through which products migrate isn't a box with a lid that something gets dropped into. A better metaphor is that of a terrain with a horizon towards which things travel but never reach.

As designers then, we are simultaneously operating at a number of levels in people's lifeworlds. We are seeking to structure an individual's encounter with whatever we design so that the encounter is an experience - something notable, memorable and valued for its own sake. But, more than that, we are hoping, through this process, to encourage that person to appropriate whatever we make into their lives, to use it on a daily basis, and to tell others about it. And we are also hoping, through this process, to impact society, transforming the way people live, and enhancing quality of life more generally. The Silence of Lands project is a good example of design that works at all of these three levels simultaneously.

It might be thought from the above that using the tools of experience-centered design to design something fun, distracting, or entertaining rather than something that is going to transform the way people live their lives doesn't count as serious design, but we do not mean to imply this. The iPod is an entertainment device and was marketed as such. But its popular appeal is such that it has transformed the way the world consumes and produces not only music but also video and photography. It is a good example of how something, which started out as a personal device for personal use, has transformed the way society and culture operates.

### 7.3 EXPERIENCE, TECHNOLOGY, AND DEMOCRACY

As Løvlied, L. (2009) points out, some of the first industrial designers worked at a time when one hundred years of industrialization had revolutionized what and how things could be made. But they had also experienced the destructive potential of industrialization with the mass slaughter of World War 1. The first generation of industrial designers sought to combine aesthetic and technical skills in order to humanize technology. What seemed like radical design innovations at the time appear now to be timeless classics (Dormer, P., 1993).

Human-centered design, in its earliest incarnation as human factors and ergonomics, likewise grew out of a time of war to try and make technologies safer, accessible, and more usable by ordinary people. The human factors community and the industrial design community have experienced unprecedented technological progress in the last 50 years. This has occurred in all fields of human technical endeavor, but the digital revolution that started in the 1970's and that is still ongoing, has fundamentally transformed our experiences and our ways of life in all areas from work to leisure. The revolution has created fundamentally new platforms, such as the Internet and mobile phone networks, that, together with innovative systems and product design, create platforms and services that would have been unimaginable by most people only fifteen years ago. An ATM machine gives us direct access to our bank's servers, for example, and the telecom businesses and internet service providers give us access to data streams, which provide information that would have been totally inaccessible to ordinary people ten years ago.

But what would those early industrial designers and human factors pioneers make of all of this? Would they have seen it as an unqualified good or would they have recognized, more than ever, the need to ensure that a humanist and democratic agenda informed such technology developments?

There is no inherent good in digital technologies. Whereas they are sometimes a force for good and empower ordinary people in new and creative ways, in some spheres of our everyday experience, they are dehumanizing. Poor information services configure users into series of types, queries, or problems that can be rendered intelligible to automated answering machines and web services. Natural conversational interactions are parodied by so called voice recognition software that leads us to shout down telephone lines as if trying to reason with a demented dog. We spend an hour of our lives navigating labyrinthine pre-programmed dialogues and waiting endlessly to be connected in order to get a simple piece of information that a human being could have provided in a second or two.

But as well as all of this dehumanization, digital technology can empower, it can create an environment that enables people to take more control of their lives, to have more say in what happens to them, to give them more choices, to increase their social connectedness, and to improve the quality of their lived experience allowing them to become the people they want to be.

### 7.3.1 THE STORY OF AIMEE MULLINS

The athlete, actor, and activist, Aimee Mullins was born without fibula bones and both of her legs had to be amputated below the knees. Up to the age of fifteen, she had been given standard medical prosthetics designed to be used with orthopedic shoes. But, as she points out in an interview with the *New Scientist*, “what 17-year old girl is going to wear an orthopedic shoe?” On a visit to Madame Tussaud's in London, she was astonished to see a model of Jerry Hall in which every detail was exactly replicated down to skin tone and eye color. This was a revelatory experience for Aimee. She realized she had been talking to the wrong people about her disability. Instead of talking to doctors and medical technicians, she needed to talk to designers and “the guys in Hollywood who were building the Terminator,” who didn't have the traditional viewpoint of doctors and prosthetic

manufacturers about how artificial legs such function and look. She now has 12 pairs of prosthetic legs. She has a pair she calls her Cheetah legs, which she uses for her professional athletics. She has a pair of Robocop legs, which have a shock absorber and a spring, and she has four pairs of cosmetic legs, which she uses for modeling.

These are incredibly human-looking, with veins, hair follicles and tendons. They're made for different heel heights. If I come home from a month in Italy or Paris, I have a suitcase just full of legs because I need options for different clothing (Mullins, A., 2009).

Through her activism, Mullins has redefined the design of prosthetics, and she has challenged the conversation with society about disability; it is no longer a conversation about overcoming loss, it is a conversation about empowerment.

... people that society once considered disabled can now become the architects of their own identities... and design their bodies from a place of empowerment ... (Mullins, A., 2009).

It is also a conversation about seeing users, not through abstractions like 'disabled,' but as real people with potential for transformation (see, for further details, Pullin, G., 2009). Additionally, it is a conversation about the imperative of designing from the lived experience of people. The lived experience, for Aimee, is aesthetic as much as it is about identity politics. As she put it in a presentation, the poetry in the design of her legs matters, drawing people toward her who might otherwise turn away, fearful of the strange. And, for her, the poetry can be fun and whimsical when the design "provoke[s] the senses and ignite[s] the imagination." It is in the experience of designing her body from a place of empowerment and enjoying the experiences that follow – whimsically varying her height, sensually exploring what it might be to articulate movement as a cheetah, powerfully receiving people's responses – that she sees the potential for people to discover and appreciate their collective humanity.

### 7.3.2 THE STORY OF AMY TENDERICH

Amy Tenderich was diagnosed with Type 1 diabetes at the comparatively late age of 37. She found little information available to help her understand the disease, its implications for her body, and her day-to-day life. She helped develop blogging sites and later health media sites (e.g., DiabetesMine and diabeticConnect) to share experiences, information, education, emotional support, and advocacy with other sufferers.

She was amazed and appalled to find so many sufferers with very little understanding of their condition, its life threatening potential, and how to manage it. This included people who had been sent home with blood glucose meters but didn't know what to do with the numbers the meters provided them or why they should undertake daily testing. The value of the social networks is demonstrated by one patient's quote from a recent keynote talk delivered by Tenderich, A. (2009):

I've learned more in the last 24 hours (on this community site) than I have in a whole year from my Doctor (PatW).

DiabeticConnect is a social media site that offers a number of services, including product reviews and a chance for people to share their experiences of using products and services. It also has a book club and recipe sharing. But one of the most heavily used areas of the site offers motivational and emotional support and allows people to talk about their experiences and how they feel.

These sites also allow people to form strong and politically coherent communities that can serve an advocacy role and as pressure groups to challenge insurance providers and policy makers. As an example, Tenderich cites a grass roots campaign entitled ‘anti-denial of continuous glucose monitoring.’ This campaign spoke out against the policies of insurance companies in the US that denied patients the right to purchase new technology that can continuously monitor their glucose levels. The site allowed people from across the country to share their experiences, with others some of whom were denied the products and others who were allowed them, and still others who had successfully appealed against insurers’ decisions. Because they were able to highlight these inconsistencies, they were able to enter into dialogue as a collective voice.

The community now supports an annual design competition, the *DiabetesMine Design Challenge* for emerging medical technologies products (see [www.diabetesmine.com](http://www.diabetesmine.com)). A recent winner was an iPhone application that turned the phone into the controller for a combined glucose monitor and insulin-pumping device. Tenderich concludes:

“So needless to say, Participation in this transformation we call health 2.0 has made all of this possible. For the first time parents and caregivers and people touched by diabetes can be actively involved in the design of the medical devices that shape our lives” (Tenderich, A., 2009).

This is about the transformation of people’s experiences of being someone with diabetes. It helps them to move from a position (like Aimee Mullins) where they are disabled and passive recipients of health care policy to a place where they have knowledge, control, support, voice, and political power.

### 7.3.3 QUESTIONS FOR THE EXPERIENCE-CENTERED DESIGNER

These examples crystallize the questions that designers, who are interested in human experience and potential, could ask themselves about their design projects. These questions first emerged for us from reading Dewey, J. (1938/1997) *Experience and Education*, a little book about the design of education. Subsequently, engaging with the various design projects in this book and with Aimee Mullins’ and Amy Tenderich’s experiences with technology, helped us to express some of Dewey’s concerns for the big picture of the design of education in terms of the design of digital design projects. Our hope is that those of you involved in experience-centered design might find it useful to ponder these questions when thinking about the impact you hope your work will have on lived experience.

Do the things we design:

- Produce the conditions for an enriched experience, or the broadening, deepening, and lengthening of relationships?

- Create the conditions for breaking down or lessening inequalities or making boundaries more visible or permeable?
- Make new environments available to people or tap new potentials for growth, and new ways of understanding, which broaden their experiences and the experiences of others?
- Support new forms of creative expression and self-expression?
- Contribute to a person's intellectual, emotional, moral, and spiritual growth?
- Make new worlds (real or imagined) or new ways of seeing possible and accessible?
- Help people frame purposes of significance to themselves and others and support them in achieving those purposes?
- Produce transformations in the way we live in the direction of power, control, and autonomy?

To what extent do they:

- Make people servants to the purposes of others?
- Change the way capital (intellectual, economic, and social) is produced?
- Help people express aesthetic, technical, and political aspects of their lived experience?

## 7.4 CONCLUSION: EXPERIENCE-CENTERED DESIGN AND THE HUMANIST AGENDA

Experience-centered design has the potential to move forward HCI's humanist agenda in the 21<sup>st</sup> Century. This is already happening in research and in some of the leading service design agencies. Research on technologies for social action, health, heritage, and spirituality are all creating new agendas for experience-centered design, and opening up new discourses on designing things that really matter.

Dewey was concerned with experience in the context of institutions, practices, and modes of thought and discourse, from politics and democracy through education and schools to art galleries and museums. It was not his aim to study these things abstractly but rather to study them in order to change them so that people's experiences and the quality of their lives could be improved. In this very real sense, Dewey was a designer. But he was a designer concerned with big issues. The aim of an education system for Dewey was not simply to teach children, neither was it simply to provide resources for learning. Rather it was to teach people *how to learn*. In his discussion of democracy, he argued that freedom cannot be judged in absolute terms but only in relation to power, the power to act, the power to understand the consequences of action, and to critically reflect and evaluate desires in terms of their consequences, in short, the power to assert control.

As digital technologies penetrate ever deeper into the fabric of our lives, the need for discussions about the impact of these technologies on freedom, dignity, civil rights, and our power to take control, becomes increasingly pressing. Like the human-centered design of fifty years ago, with its agenda to humanize industrial production, turning it to the benefit of all, so the agenda of experience-centered design can be, and should be, to humanize digital technology, so that it empowers people through its poetry and politics to enjoy and to exercise control as members of a collective humanity.



## APPENDIX A

# Doing Research in Experience-Centered Design

Research on experience and the personal meaning of experience is particularly difficult to express in a procedure. Consider the Prayer Companion project that we described above. The meaning of prayer to the nuns only became clear as Mark Blythe got to know them personally, his understandings of the complexities and nuances of prayer began to grow, and he explored this richness with the rest of the project team. The focus of such a research project and the methods used have to respond to understandings that change as the project progresses. The personal and often intimate quality of experience also means that researchers and designers have to be sensitive to and respectful of the participants, building up trusting relationships in order for them to feel safe. This is not easy work and requires an individual to develop the sensibilities of a good ethnographic researcher. These sensibilities are evident in the work of people like Mark Blythe and Jayne Wallace, who have spent many years developing their fieldwork skills.

As a consequence, research on experience and meanings is not suited to fixed research designs and procedures. In this appendix we provide some guidelines on doing research in experience-centered design. We do this with the caveat that no guidelines can substitute for detailed study of relevant methodology and methods. The guidelines we offer are intended to point readers to the areas in which they may have to make decisions and to resources that may be useful in following through on those decisions. There are already many texts on methods for data collection and analysis. Our aim is to suggest a context that may help you to find the most suitable methods for your research question and then to find a really good book or chapter on that method.

## A.1 APPROACHES AND METHODS

When researching experience, methods and approaches that open up dialogue between designers, researchers and participants are the most appropriate. As we have already seen in earlier chapters, it is not easy to understand experience or its meaning except through the kind of dialogue in which the parties engage with each other in constructing a variety of meanings and perspectives that help them to mutually recognize and understand each other, and, indeed, themselves. It may be that in talking about an experience, in recounting it to another person, in creating new understandings in dialogue, participants are organizing and making sense of experience for themselves too (McCarthy et al., 2006; Sullivan, P., 2008).

In those earlier chapters, we drew attention to the value of a dialogical approach to conceptualizing experience and to understanding particular experience in design practice. We discussed examples from design practice, for example: Wallace's use of objects or stimuli to gently invite participants to creatively express something about themselves, their values, their relationships, and the ways they make sense of experience as resources for conversation about their experiences; the design and use of the Prayer Companion as a stimulus of discussion into the nun's spiritual life. They are particularly strong examples of experience-centered research methods. In this chapter, we will introduce you to a variety of methods, including other homegrown methods, methods that originate in art practice and in the humanities, and methods that originate in the social sciences. Although our focus will be on their use in experience-centered design, it is worth bearing in mind that, as they come from quite different traditions, they carry different baggage with them in terms of what it means to understand experience, why anybody would want to do that, and how to go about it.

Other homegrown methods that are used in experience-centered design include:

- A variety of probes (cultural, experiential, and evocative stimuli) (Gaver et al., 1999; Wright et al., 2008).
- Experience prototypes (Buchenau and Suri, 2000).
- Technology biographies (Blythe et al., 2002).
- Fictional Inquiry (Dindler and Iversen, 2007).
- Drama and role-play (Newell et al., 2006)

Experience-centered design also makes use of methods from the social sciences some of which have been used in HCI projects for many years including:

- Ethnography
- Interviewing
- Diary studies
- Focus groups
- Repertory Grids
- Card Sorting

Many of these methods have the potential to elicit personally meaningful reflections that are needed to understand how people experience and make sense of situations, relationships, and life events. However, it is important to note that none of them is guaranteed to provide insight on experience and none of them is intrinsically dialogical. It is the way in which they are used in practice that yields insight and dialogue. For example, probes, interviews, and repertory grids could be used to

gather information that would go toward specifying requirements in a software engineering approach to the design and development of interactive systems. However, when they are used to engage with participants in a personally meaningful way that is open to the multiple voices and ambiguities of dialogue, they can open up design spaces.

When it comes to analyzing what has been returned in a Cultural Probes exercise, what has been said in interviews, the visual images that have been created with people to represent their desires, or the observations of people living with an open design, and so on, a number of different approaches are available and have been used in experience-centered design. For example, they can be analyzed to extract their content or abstract the major categories required to classify them. Or they can be used as resources for getting into the other person's experience. Or they can be used, like literary writing, to inspire and evoke responses. The approach taken in any particular experience-centered design project will depend on the aims of the project, the tradition in which it is running, and the preferences and interests of the project team. They are all valuable approaches to research in experience-centered design that, like any research approach, need to be used with careful attention to the work you expect them to do and sensitivity to the traditions involved and the strengths and limitations of the methods chosen.

As was the case with methods available for engaging people about their experiences and the sense they make of it, there is also a large number of methods available for analysis. Many of these methods start by creating a detailed transcript of the interview, a good record of field notes, or some kind of organized portfolio of images. Some of the more artistically oriented projects may be more likely to have images, texts, and other stimuli randomly scattered around a workspace as inspiration for design activity. When a transcript or other representation of people's account of their experience is involved, decisions have to be made about detail and notation. How detailed and what transcription notation to use are matters of debate in qualitative research. The transcript is typically analyzed using one of the following methods: Grounded Theory, Discourse Analysis, Content Analysis, Interpretive Phenomenological Analysis, Narrative Analysis, etc., each of which is suitable for a different kind of research question. There are many books that describe these methods and the kinds of research questions they are best suited to (Clandinin and Connelly, 2000; Parker, I., 2005; Smith, J., 2008; Charmaz, K., 2006; Reason and Bradbury, 2008; Denzin and Lincoln, 2005; Knowles and Cole, 2008; Jankowicz, D., 2004; Laurel, B., 2004). We have reservations about any of them being entirely suitable for developing an understanding of experience. Some, such as Grounded Theory and Content Analysis, are very good at analyzing the content of an interview or any of a number of other sources (e.g., blog, diary, comments, pictures, images, etc.). Some, such as Narrative Analysis, are very good at describing the structure of what is said. And Discourse Analysis helps to understand the social action or version of events expressed in a text. However, experience cannot be reduced to any one of those perspectives. When selecting the most suitable approach to data collection and analysis in experience-centered design, bear in mind that experience is holistic and dialogical, and judge whether the method you are considering can capture those holistic and dialogical qualities. The distinction between a relatively closed, monological use of methods such as probes,

interviews, and biographies outlined above, and a more open dialogical use can also be applied to the approaches used by designers and researchers to make sense of or interpret their data.

When you look at texts that describe the wide variety of methods available for analyzing and interpreting texts and other visual and auditory stimuli, bear in mind that each method is designed to do a different job, and that different researchers, depending on their own dispositions and interests, may bring quite different approaches to working with them. So, for example, whereas Grounded Theory and Thematic Analysis are broadly interested in finding meaningful ways of organizing content (e.g., the content of an interview or the text written on postcard in a probes exercise), Discourse Analysis is more interested in the social action performed by those texts. Moreover, whereas some researchers use Grounded Theory to generate interpretations from verbal data using the systematic techniques provided in the method, other researchers are more interested in using Grounded Theory to support a process of mutual interpretation of experience between researcher and participant (Charmaz, K., 2006). Within almost any area of research in the social sciences, humanities, and arts, there are differences of style and approach that may not be apparent to readers and practitioners who have not read extensively in the area. This is not a reason for not joining in, more an encouragement to attend to the nuance and difference when joining in.

## A.2 RESEARCH TOPICS AND QUESTIONS

When people set out to do research they have their own views about what is important. Sometimes this is quite informal and reflects the researcher's interests or intuitive beliefs about the world and the area they are researching. Other times, it takes the form of a fully-fledged ontology, a set of assumptions about what is to be treated as real in the inquiry. The dialogical approach that we have outlined in this book treats relationships and communication as privileged in terms of understanding experience. It treats relationships as the building blocks of 'reality.' This has conceptual and methodological implications: favoring interpretation in terms of processes such as communication and engagement and favoring data collection and analysis that involves meaningful encounter and participation, for example, between designer and user. Other approaches might treat people, sensations, physiological responses, social structures, and societal processes as their basic building blocks, each of which has its own conceptual and methodological implications. Ontological differences are, therefore, likely to have some influence on the variety of questions that can be asked about experience and/or the approaches that particular researchers judge to be most fruitful in their area. They are not determining though and may not even be the most significant influence in many cases.

Although convention has it that the research question or research topic has the major influence on choice of method, in practice the research topic and the ontology are never completely separate. A researcher who asks questions about the societal reproduction of domestic or work experience is likely to be committed to the idea that society plays a role in shaping people's experience. And somebody interested in questions about people's experience with technology or doing experience-centered design is likely to be committed to a central place for experience in people's interaction with and appropriation of technology.

There have been a number of attempts to classify research as it relates to art and design. Frayling, C. (1993) classification of the types of research that might suit and grow out of what artists and designers do and Archer, B. (1995) subsequent classification of ‘research through practitioner action,’ have been particularly influential. Reflecting on what they say, we see three broad types of experience-centered design research topics and questions. The three types of research topics and questions are:

- Research *for* experience-centered design
- Research *through* experience-centered design
- Research *into* or *about* experience-centered design

In experience-centered design the focus is mainly on research *for* and research *through* design.

### A.3 RESEARCH FOR EXPERIENCE-CENTERED DESIGN

Imagine you are doing a project on the design of a museum installation, one of the aims of which is to encourage children to engage with the history of their region. You might want to find out about the kinds of interactions that normally hold children’s interest or about how to create a balance between narrative and other elements such as evocative sounds and images to develop an immersive experience of a local historical event such as a riot that would work for children. Addressing these interests involves doing research *for* experience-centered design.

In research *for* art and design, the end product of the research is an artifact (Frayling, C., 1993). In art, this involves gathering reference materials to inform or inspire, similar to Gaver et al. (1999) description of how they intended Cultural Probes to be used to inspire design. As well as producing artifacts or systems, most experience-centered design projects are also geared toward understanding user experience and the design process. Archer, B. (1995) recognizes this possibility when he refers to the possibility of work done to support design as ‘research’ only when it involves systematic inquiry whose goal is communicable knowledge.

We have seen many studies of people’s experience with mobile technologies such as phones and music players that both contribute communicable knowledge and support design activity. Taylor and Harper (2002) ethnography of teenagers’ experience of mobile phones involved field-work (observation and interviewing) in a secondary school and resulted in an account of texting as gift-giving, as well as a set of design recommendation and concepts. Ethnography has been the methodology of choice in many studies of experience of technology. Ethnographers use multiple methods such as observation, participation, and interviews and write accounts of activity and experience from the participants’ perspectives. As a methodology, it has many of the qualities of narrative and dialogue discussed earlier, and some versions of it productively draw on interpretive social science and humanities. As is the case with all research methodologies, there is debate within the camp about which approaches are suitable, and some ethnographers would shy away from any alignment with the humanities, preferring instead a strong social science position. It would benefit anybody who

wants to do experience-centered design research to have a working knowledge of ethnography and an appreciation that, like most qualitative methodologies, it takes quite an apprenticeship to become a proficient ethnographer and that all apprenticeships require thoughtful, supervised practice.

Research *for* experience-centered design can be performed using a number of the methods mentioned earlier. For example, when Wallace uses evocative stimuli to get some insight into her participants' experiences, values, and relationships, she is doing research *for* design. Blythe et al. (2002) use of technology biographies performs a similar role in quite a different way. Dindler and Iversen (2007) use of Fictional Inquiry, a Participatory Design technique that allows designers address specific issues through the use of partly fictional narratives that bypass existing conventions and structures, is an example of research *for* design that depends on something close to play.

Interviewing is one of the most widely used methods for inquiring into people's experience. There are many different kinds of interviews. Some are fairly strictly structured, others relatively free from defining structure, and perhaps the most widely used are semi-structured. In semi-structured interviews, the interviewer has a set of issues to discuss but is prepared to go with the flow of the conversation in discussing them. Interviews also differ in terms of their focus, from those that ask for stories of experience (e.g., Vivien's interview with Bea in Chapter 3) to those that try to take the participant through an experience.

Light, A. (2008) analyzed people's accounts of their experiences of receiving mobile phone calls so that designers could better contemplate that experience when designing mobile communication systems. She interviewed ten people about their experiences of calls received. She used a phenomenological approach to interviewing, that is, an approach that describes experiences as they enter into consciousness. Light asked her participants to describe the last time they received a mobile call and the last time they received a landline call. After they had given both accounts, she then asked them to compare the two experiences of remembering and to comment on what they had learnt. This was a carefully considered method of collecting data on people's experiences, which was designed to make comparison of experiences possible without affecting the initial recall.

The interviews were not formally structured and were non-directive as Light was interested in gathering accounts in the participants' own words. The interview elicitation method is described in detail in Light, A. (2006). It involves maintaining a state of evocation in the interview, encouraging the interviewees to relive an experience by asking them to describe the place they are in, the sounds they hear, their memories of a particular event, and what the experience felt like at a particular moment. The interviewer asks the interviewee sensorial questions and other questions that encourage them to focus on the lived experience of a particular event, episode, or place. The interviewer asks for clarification and detail to keep attention on the topic. She asked questions derived from the last thing the interviewee said, or she prompted them by echoing what they said or asking them to be a little more specific. Here are some examples of the kinds of questions Light used in the studies reported in her two papers:

- Where were you?
- Was it a hot afternoon? Was it a cold afternoon?

- Ok, tell me more about that...is that a feeling or a ...?
- When you say it disappears—tell me about that?
- How was it doing the walk and taking the call?

The interviewee was steered away from telling a story (though other interviews would have been geared specifically at eliciting stories of technology use) or giving opinions or general impressions and instead asked to focus on particular things that they did, emotions they felt, and sensory experiences they had.

It would profit anyone who plans to carry out research using interviews to read Light's papers and a number of overviews of research interviewing (e.g., [Kvale, S., 2007](#); [Kvale and Brinkmann, 2008](#); [Roulston, K., 2009](#)) that address issues as broad as how to judge the value of data collected using interviewing and as specific as what are the best kinds of questions to ask in interviews (e.g., open questions, how rather than why questions, etc.). Reading some of them will show that interviewing is not one uniform activity that a researcher can launch into without careful thought and planning.

As we have already noted above, when data has been collected by interview, focus group, diary or other similar method, and then transcribed, it results in a very large body of textual data that has to be analyzed. We have already mentioned a number of the approaches that are used in the social sciences including Grounded Theory, Discourse Analysis, and Narrative Analysis. We also expressed our reservation about any of these methods, as they are described in most textbooks, being able to develop a dialogical understanding of experience. Each of them emphasizes one aspect of a person's account of their experience and, therefore, runs the risk of reducing experience to a textual account and then of reducing the account to its form or content. But textbooks oversimplify and, as most people who use these methods know, it is never as straightforward as the textbook account suggests. And, as most people who read qualitative research know, skilled practitioners are not often hampered by the limitations of a method.

We have used some of the methods ourselves, frequently teach them, and have read research that used them and that gave us a strong sense of the people involved in the research and their experiences. Take, for example, Kathy Charmaz's accounts of the experience of chronic illness. Her method is Constructivist Grounded Theory ([Charmaz, K., 2006](#)), a variation on the textbook view of a Grounded Theory, which emphasizes the creation of meaning in the dialogue of listening and analyzing. Her research is rigorous and informs about the issues for people who are chronically ill, for example, their experience of time dragging or running away and their experience of control ebbing away. However, it also engages with the stories of individual people. Her analysis, as well as creating themes and issues to express the meaning of people's lived experience, engages with the individuals whose experience she is analyzing. Her writing evokes them by setting what would otherwise be abstract themes in the context of their lived experience.

But first, let me begin with a story about Karen Liddell, who struggled with chronic pain from a devastating neck injury, escalating reliance on pain medication, relentless emo-

tional turmoil, an unreliable and uncertain body, and the prospect of continued poverty. Karen's striking dark hair, perfect features, smooth skin, and graceful figure portray a woman younger than her 46 years. Her elegant carriage, clear gaze, and calm composure belie the physical, emotional, and financial struggles she has had and continues to experience. Karen has been married and divorced three times; she calls herself a "serial commitmentist" (Charmaz, K., 2004, p. 977).

Charmaz tells Karen's story. She tells us about her last husband, a property developer, who provided a very comfortable home for the family, and about Karen's chosen role as full time mother in the family. She tells us about the problems her son Joshua is having in high school and about the difficult financial situation they are in after her third marriage ended. Then she tells us about the sudden onset of her medical problems following a very serious motor accident as she drove home after a long stint doing voluntary work. Karen describes the accident in her own voice. Then Charmaz tells us about Karen's chronic pain and fatigue and her worries about permanent incapacity, intermingling the medical with a description of Karen's sense of broken trust and loss after finding out about her husband's double life with cocaine. Karen describes 'finding out' in her own voice.

Charmaz's detailed in-depth interviews with chronically ill people produce rich individual stories of experiences that she expresses in her writing as both story and analysis. Her research is concerned with constructing a deep understanding of lived experience and as she puts it "a deep understanding of studied life means entering it" (Charmaz, K., 2004, p. 980). In discussing her approach to qualitative research using Grounded Theory, she contrasts research that goes around the topic rather than entering it and research that enters into the experience with the people being interviewed in order to "make an interpretive rendering from the inside" (Charmaz, K., 2004, p. 980).

We could give similar examples of research using many of the other methods we have mentioned. In each, it would be easy to find examples of research going around the topic, and it would be possible to find examples of research that enters into the subject being studied in the interviews, observation, and participation. The former would be distant and detached, the latter engaged. Our skepticism, therefore, is not about any method in particular rather about a tendency to use methods as recipes for researching experience. Although most analysts work with one or other of the methods mentioned above – their choice reflecting their particular research interests and analytic preferences – the lesson is that the researcher's focus of attention should be on the experience and the people, not on the method.

If you are starting to do research in experience-centered design, how do you attend to the phenomenon and people, engage with the person's experience, rather than using methods mechanically? At one level, the answer is in the dialogue. It is in the listening, the responsiveness, and the openness of dialogue. It is in the commitment to engage with the other person and linger over their story and experience until an understanding is created. At another level the answer is in the kind of rich understanding that happens between friends. Think about a friend telling you about an experience that is very important to them. Do you focus on the content alone? Or do you focus the form of what they are saying, how it stacks up as a narrative similar to or different from other stories? Or even, do

you focus on the social function, how they are representing themselves in the experience and what response they expect from you? You know your friend as a person and how they are likely to respond in certain situations and to other people, the kind of empathic response you have to any person telling you about something that is important to them. You know how they might feel about their own part in the activities they recount to you. You listen carefully, and you respond with concern, and by opening yourself to their experience, you open yourself to being wrong. Being right or wrong is not the point between friends. What matters is being open, caring and responsive. Being wrong is easily forgiven when it is clear to the other person that your concern is for them.

Does this sound too deep for research that is likely ultimately to inform or inspire the design of technology? Should our interest be limited to the experience of the other as ‘user’? Focusing on that part of people’s lives – the user part – may have been appropriate when technology and systems were designed for their function only. But, as should be clear by now, that is not the point of experience-centered design. Imagine you are designing a hospital service for people who are chronically ill. Would it be important to know that the emotional aspects of chronic illness are as salient for ill people as the medical aspects? Would you be better able to design that service if you knew that Karen saw her survival hanging as much on her family, trust in her relationships, her incapacitating fear of being permanently ill, and her sense of being silenced as much as the chronic fatigue and pain that she was experiencing? We think so.

## A.4 RESEARCH THROUGH EXPERIENCE-CENTERED DESIGN

Think back to that museum design project we imagined at the beginning of the last section. There is an alternative to doing research *for* that design to inform and support design practice. Instead of enquiring into the children’s experience before designing the museum installation, you might prefer to find out what engages them, what draws them into collaborative activity, and what combination of sounds, images and narrative they find most immersive by making prototypes of systems or parts of systems and observing the children as they interact with the prototypes. This is research *through* experience-centered design.

Research *through* design refers to research that is carried out “through the medium of practitioner activity” (Archer, B., 1995, p. 11). There are times when the best way to understand a design idea or principle, a design judgment, a material, a novel form or medium of interaction, the focus or topic of a design project, or people’s appropriation of a system is to make a prototype and test it in use. This approach to research is common in education, business, professional practice such as architecture, and in some areas of medical practice. In these cases, it often involves intervening in a system and documenting and analyzing what happens and what can be learned from it. For example, it may be that the best or only way of trying out a new approach to teaching a HCI module is to try it and reflect on it by keeping a portfolio of artifacts, documents, and personal reflections on how specific elements went, student feedback, and students’ journal reflections on their learning. In these areas, this kind of research is often called action research. It involves the researcher as an agent

in the situation being studied, taking some action in the situation to evaluate the action or throw light on how the situation is understood. For example, trying out a new way of teaching HCI and reflecting on one's own and students' responses throws light on curriculum, teaching practice, and student learning – as well as a reflected light on one's own practice. Clearly, this research is colored by the presuppositions and values of the researcher, and so making them explicit in any report is critical to readers trying to understand the research and its implications for their work.

This seems to us to be a particularly interesting and potentially very fruitful type of research for those of us who have come from Interaction Design and Human Computer Interaction backgrounds. It resonates with the practical design case studies that have come to the fore in those areas in recent times and uses methodologies that are developmental and reflect on the designers' actions and outcomes. The Prayer Companion discussed earlier is an example of research *through* design. It tries to understand designers' judgments and practices, situations that are of interest for topical and/or theoretical reasons, and the deployment of technologies in those situations by developing a piece of technology, deploying it in the situation in question, and reflecting on outcomes and processes. In terms of our earlier discussion of research methods, it is worth noting that the Prayer Companion project made use of ethnography to get a sense of how the nuns lived their lives, collected written and short video-comments on experiences of the system in use, and extensive interviews with the nuns. However, as was suggested in the previous section, one of the key factors in this research was the researchers' readiness to engage with the nuns and try to understand their experience of prayer life and of the Prayer Companion from their perspective.

It might be useful to conceptualize this approach in terms of the epistemology Schön, D. (1983) developed in his book *The Reflective Practitioner*, which highlights the potential for research and practice of reflection-in-action, the kind of artful, improvisation that professionals learn and use in practice. Schön, whose epistemology builds on Dewey's experiential approach to inquiry discussed in Chapter 2, refers to the resulting knowledge as 'knowing-in-action.' According to Schön's epistemology, research inquiry begins with a sense of a situation being problematic or troublesome. We would add interesting, curious, or topical. As enquirers are in transaction with their interesting situation, they construct its meaning and, in the process, frame what it is that makes the situation particularly interesting for them. This brings about the setting for an informed intervention in the situation and ultimately a new situation, which presents its own problems and interests.

Therefore, the process of inquiry mooted by Schön is continuous and the knowledge generated through this inquiry is situated, action-oriented, and revisionary. From a sense of problem or trouble, or plain curiosity, to trying out different approaches, perhaps continuing to act intuitively but now also observing and noting both the activity and the outcomes, and through documenting and discussing them mindfully raising situated awareness of them. Being adventurous in generating and testing hypotheses but also careful not to foreclose on ongoing inquiry by drawing final conclusions. According to Schön, practical knowledge, generated in, for and through a particular situation of action can be made explicit and formulated so as to be useful in other situations too. This is not the

standard scientific generalization where a general proposition can be applied to all instances where a certain combination of variables is present.

## A.5 RESEARCH *INTO* OR *ABOUT* EXPERIENCE-CENTERED DESIGN

Having completed your museum design project, and a few more, you might begin to consider what exactly you are doing when you practice experience-centered design. Or you might start to wonder about the knowledge and hunches you used when making design decisions: What kind of knowledge is it and how was it translated into design practice? You might begin to generalize from your own experience to the broader study of design as an activity that happens in a historical and cultural context. It is not unusual to tackle some of these questions in the reflexive parts of a PhD. When you do that, you are doing research *into* experience-centered design.

Research *into* or *about* experience-centered design asks questions about experience-centered design practice, theory, and context. It covers the following quite conceptual topics that may best be pursued through interpretation of texts and other kinds of representations such as models, drawings, and artifacts:

- The history of experience-centered design or aspects of it.
- Criticism of the results of design activity, the prototype, product, or system.

In earlier work, we developed a framework of concepts for experience-centered design (McCarthy and Wright, 2004). A significant part of this work involved seeking out and studying theories of experience that we thought would have something useful to offer to design. This led us to philosophical treatments of experience from the 1920s and 1930s, specifically the work of John Dewey and Mikhail Bakhtin. Much of the research for this project was desk-based and involved reading and reflecting on Dewey and Bakhtin's original work and later scholars' analyses and interpretations of their work. This resulted in us developing an approach to experience and some key concepts for a framework of experience that we felt would be of use in experience-centered design.

Critical reflection on artistic practice and artwork has also informed and inspired design (e.g., Crampton-Smith and Tabor, 1996; Dunne, A., 2006). Critical reflection on design owes a lot to the arts and humanities tradition of research. The humanities may be understood as the study of human expressions, for example, in works of art, architecture, cultural movements, and historical development. Given the growing interest in the expressive potential of interactive digital artifacts and systems, the arts and humanities tradition can surely be informative in experience-centered design research. It brings its own particular emphasis on recognizing and understanding the 'voices' that are represented and excluded and with interpreting and evaluating around issues such as 'voice' rather than a body of facts. This critical emphasis in humanities research could benefit research about experience-centered design by drawing attention to issues concerning the inclusivity or exclusivity of involvement in design practice and system use. For example, it suggests questions about the

voices of users and communities in design and about the ways in which some interactive devices and systems facilitate user and community engagement while others inhibit some people or some kinds of engagement. Of course, the Open Systems movement already raises similar questions within the broader HCI community. The point is that it might benefit from the humanities' sensibilities toward the nuances of exclusion.

Research *about* experience-centered design also includes topics such as the following that draw more on scientific research traditions.

- Investigations of design practice, thinking and knowledge.
- Theoretical aspects of experience-centered design such as the socio-cultural or economic foundations of design in the experience economy.
- Political and ethical aspects of the potential commodification of experience.
- Basic aesthetic, perceptual, experiential processes.

You will find many studies of design practice, aesthetics and design, and socio-cultural aspects of design in journals such as *Design Studies*, *Design Issues*, *International Journal of Design and Co-Design* and some in HCI publications (e.g., [Zimmerman et al., 2007](#)).

## A.6 SUMMARY

We hope you can see very strong links between what we have described in this chapter and earlier discussions of dialogue and connected knowing. In qualitative research on experience-centered design, the impetus must be to engage with people and to try to understand their experience from within, a model of connected knowing. We hope too that you will have seen in the examples we used to illustrate different approaches the value of narrative and dialogue, asking people in one way or another to talk about their experience and engaging with them in a dialogue that potentially brings about new understanding. We also hope that it has become clear that there is no simple straightforward method for doing experience-centered design, that each situation and each question will make its own demands on method and each researcher will have their own research approach and style. Of course, you will find descriptions of methods of collecting and analyzing data in some of the texts we have referred you to. As you read those – and you should read them before trying to use the methods – bear in mind our skepticism about using methods as recipes and Charmaz's commitment to the experience over the method. The job is to understand the experience, not to apply the method. The method is a tool that can help you understand the experience, and it should be used with sensitivity to the situation, people, and experiences in question. This requires 'entering into' the situation and participating with the people whose experiences are being studied, perhaps, participating in activities with them and having them participate in research and design activities with you, minimally, participating in a dialogue that can take the form of meaningful, sometimes intimate, conversations with them over time.

A final point. Entering into people's lives and experiences requires a great deal of sensitivity and responsibility. You may hear things that participants in your research would not want repeated. You may interview people who are very upset or angry about the experience they are describing. You may simply get to like some participants and dislike others. Researching people's experience can be very challenging for all concerned. For example, if you use a repeated interview approach, you may get to know and like or dislike some of your research participants. In this context, paying very close attention to ethical concerns is important. Ethical Guidelines for research with people can be found in a number of places: ACM ([www.acm.org/about/code-of-ethics](http://www.acm.org/about/code-of-ethics)), the American Psychological Association ([www.apa.org/ethics/code/index.aspx](http://www.apa.org/ethics/code/index.aspx)), the British Psychological Association ([www.bps.org.uk/the-society-code-of-conduct](http://www.bps.org.uk/the-society-code-of-conduct)). You will also find useful discussion of relevant ethical issues on the British Computer Society Ethics Forum ([www.bcs.org](http://www.bcs.org)). The fundamental principle informing ethical guidelines is the protection of those who participate in the research, so that they leave the project with their self-respect intact, feeling positive about their participation, and with an assurance of anonymity. The idea of informed consent is central. Participants need to be given sufficient information about the study, how it will be analyzed, and how the results will be disseminated before the project starts. This enables them to make a decision as to whether they wish to participate or not. Equally, they must be given the right to withdraw from the study or terminate the interview, even when this does not suit the researcher. They should also be able to ask questions of the researcher about the study. Clearly, there are particular problems with regard to qualitative research. We can protect anonymity by using pseudonyms, changing locations and any identifying information. But sometimes, quoting from transcripts increases the visibility of the participant and possible subsequent identification. This must be considered with the participants and especially when writing up your research.



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