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Research 'In the Wild'

Into the Wild: Beyond the Design Research Lab
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Over recent years the term 'in the wild' has increasingly appeared in publications within the field of Human Computer Interaction (HCI). The phrase has become synonymous with a range of approaches that focus upon carrying out research-based studies reporting on user behaviour in 'natural', 'situated' contexts, in distinction to lab-based studies. The objective of this book is to bring together a range of perspectives from a variety of researchers who have carried out studies in the wild. By bringing these together we aim to explore and demonstrate how such studies can support research in different fields and domains. In doing this we wish to help the broader research community understand some of the issues, reasoning, methods and practical matters that are involved in doing research in the wild. This edited collection is part of an ongoing and developing debate, and as such provides both a backdrop and platform that will promote further discussions in this emerging area.

The Turn to the Wild

Early works in this area of an influential nature were based within the field of Anthropology and Cognition, with researchers attempting to unravel and evolve theories of practice and cognition, showing through their studies the situated, distributed, and emergent nature of cognition in the real world (see for example Suchman 1987 Lave 1988, and Hutchings 1995). In many respects this research went against accepted notions of the time and reshaped fundamental understandings of cognition and human practice and how it might impact the design and use of digital technologies. 'In the wild' studies are now routinely carried out to understand the everyday uses of emerging technologies and shape the design of systems and applications to better fit the situations in which they are deployed and used.

Early HCI focused on the interface between the user and machine and design of the 'software control dialogue' (Grudin, 1990). HCI researchers began to recognise, however, that digital technologies are ecologically situated, which necessitated an appreciation of wider socio-technical issues. Of particular note is the 'turn to the social' that occurred during the late 1980s and early 1990s and the development of CSCW (Computer Supported Cooperative Work), which prompted designers to look beyond the computer interface to the socially embedded nature of systems beyond the lab. As Grudin (1990) wrote, "the location of the 'user interface' has been pushed farther and farther out from the computer itself, deeper into the user … environment." The need to understand and appreciate the socially embedded nature of technology required that researchers go out 'into the wild'. With the development of technologies that are mobile, ubiquitous and embedded in mundane objects or 'things' (the so-called Internet of Things) it becomes increasingly important to understand technology

at an ecological rather than at a species level, which cannot be accomplished in a sterile lab-based setting.

It might be said then that a fundamental concern with ecological validity motivates the turn to the wild. The Glossary of HCI (Papantoniou *et al*. 2018) tells us that "…*ecological validity refers to an acknowledgment of the fact that human action is situated and highly contingent on contextual factors/variables. To obtain 'valid' results, humans should [therefore] be studied in the richness of their natural environment."* This means that is important, if not imperative, to move out of the lab. It is only then that the real world, real time nature of human action and cognition can be apprehended, and systems be shaped around them. By taking technology out into the wild, we are better placed to understand the ecological factors that impact it and and understand what needs to be done to make it fit into the settings in must inhabit.

An evolving body of 'in the wild' studies have emerged over recent years. In examining these studies, we start to see a marked difference between the situated use of technology in the real-world and its development, creation and use in research labs. This begs the question, is there more to research in the wild than merely studying technology that has already been developed in a lab, or do we need to leave the lab behind and start to appreciate the in-situ nature of the setting where such technologies will be used as a premise for design? It's clear to see that lab-based studies may lead to situations where participants are over-controlled and that the activities and actions they are asked to engage in do not map onto, and are not reasoned about in the same ways, outside of such controlled environments. It is for reasons such as this that Davies (2005) argues that lab studies are not a substitute for deployment: "*it is impossible to understand ahead of time the impact of the environment on technology (or indeed, the impact of technology on the environment), and this is often critical to system design."* Understanding the environment of use can engender better understanding of the context in which technology will actually be deployed and the heterogeneous factors at play in the real world beyond the laboratory doors.

This position is of course contestable and contested. Kjeldskov et al. (2004) launch a notable critique of research in the wild and beg question "is it worth the hassle?", for as Rogers et al (2007) note carrying out research-in-the-wild is both labour intensive, financially expensive, and significant investment. We can already appreciate the difficulty of carrying out research in the wild, particularly in settings where groups and multiple actors are involved. As Grudin wrote nearly 30 years ago, "group processes are often variable and context-sensitive, and usually unfold over time and in different locations; organizational change that results from introducing technology may take even longer to observe; and generalizing from observation is difficult – each group's experience is governed by its constitution and the conditions under which technology is introduced (Grudin 1990)." Nonetheless, and as the articles in this book hopefully demonstrate, the returns on 'in the wild' research offer significant insights that offset its costs.

This is not to suggest that we abandon the lab and move entirely into the wild. The purpose of the research and the end-point of a project all have to be factored into the way that the research is carried out. Arguably developing technology to support paramedics responding to an emergency situation will inevitably need to go through

multiple rounds of in the wild testing and evaluation based in different situations, whereas an educational game might require a different approach to understanding and evaluating its applied use. So, there may well be cases where lab-based studies are rightly prioritised over studies in the wild and vice versa, and research needs to consider this when developing its design approach. At root we need to ask, are carefully controlled experimental results required or do we need to explore and understand what the technology will look like in the wild? Ultimately, as the 'turn to the social' in HCI opened up a new vistas and research agendas, then turn to the wild further expands our field of vision and immerses design *in* the world.

Contributors and Contributions

This volume brings together a variety of perspectives on research in the wild. Without giving to much away, below we give the reader a flavour of the chapters that make up this work. We start in Chapter One with Alan Dix's walk around Wales. In charting this Alan offers intriguing glimpses of the many issues that can affect research in the wild. Alan's is a journey of discovery that helps us to see what is involved in both doing a journey, understanding that journey, and bringing the understandings gained to bear on possible design solutions. As Alan puts it, "research in the wild is always methodologically challenging, dealing with unconstrained use, data collecting for the unexpected, creating transferable knowledge from particular incidents, and inevitably pushing the boundaries of professional objectivity."

Chapter Two, by Andy Crabtree, Peter Tolmie and Alan Chamberlain, provides a sociological orientation to the wild as an everyday and unremarkable place for those that inhabit it and the technologies situated within it. The authors make the case that the 'unremarkable' status of the everyday world is consequential, as it means that the wild is a mundane place whose social features may easily be overlooked by design researchers. This chapter elaborates "a collection of in-the-wild approaches for conducting foundational research on socio-technical systems, moving the development of future systems out of the laboratory to engage directly with users at each turn in the development process."

Chapter Three, by Tomasso Columbino Jutta Willamowski and Antonietta Grasso takes a thought provoking look at what happens when organisations examine the approaches they use to carry out research and how research agendas are prioritised and controlled. Doing research in the wild and reflecting upon the roles and motivations of the actors involved allows the authors to uncover 'uncomfortable lessons' about corporate research. This chapter will be of particular interest to researchers that are interested in innovation in organisations and how research in the wild blurs the distinction between prototype and product, experiment and deployment.

Chapter Four, by Richard Harper, Siân Lindley, Richard Banks, Phil Gosset and Gavin Smyth questions the mechanisms that might be employed to carry out design research and the problematic nature of methodology. As Harper et al. emphasize, taking an enquiry-based approach can be difficult and can sometimes suffer from a lack of direction. Nonetheless, early stage research is key to design and development. In presenting and elaborating the evaluation of a new type of data store, the authors consider the role of researchers as early stage in the wild adopters and what this might mean for design. As the authors put it, "Our engagement with the technology is not,

as it were, intended to let us figure out how to appropriate the technology; our research has entailed engaging with it so as to fathom our own imaginations made real through use of the technology."

Chapter Five by Keith Cheverst Nick Taylor, and Trien Do moves the focus to a rural village in Lancashire. The authors address what is involved in doing community-based research and giving communities a voice in design. In an honest response to the fact that what is created and deployed can never respond to the needs of an entire community composed of people with differing needs and wants, Cheverst et al's work focuses upon the culture of the community and the ways in which that might be represented, shared and used by multiple stakeholders. As a final parting comment the chapter asks us to think about impact that research can have upon a community. This in itself is an ethical question that needs to be pondered upon.

Chapter Six by Jon Whittle, Maria Angela Ferrario and Will Simm also explores community-based research and picks up the ethical challenge. The authors explore egalitarian approaches to doing research in the wild that actively engage and involve people and share power. A particularly valuable part of the paper lies in the discussion of innovation and the concept of 'responsible innovation'. The interdisciplinary nature of research in the wild is also highlighted in a chapter that is not only timely, but key to developing research approaches in general.

Chapter Seven by Ewa Luger and Tom Rodden explores ethics as a constituent part of in the wild studies and examines the foundational nature of consent in research and design. Questions are asked about the nature and prediction of harm in 'in the wild' research and the consequences of carrying out research that may be taken out of the control of the researchers' hands. Luger and Rodden note, "new variables, such as third parties, can come into play creating a highly dynamic research environment that stymies the identification of right or wrong conduct through a host of unexpected temporal, social and other contextual factors". They ask, how do we design in situations where we might not know the actual context of the research? The notion of 'responsive consent' and the role of the 'participant as researcher' are considered in response.

Chapter Eight by Nick Race, Dave Randall, Mark Rouncefield and Roger Slack explores the practical character of ethics and is food for thought. Using examples from their work the authors examine "relationship between researchers and subjects" and question amongst other matters notions of community and trust. Being able to gain insights based on real-world studies is valuable and this chapter serves to inform researchers both about the actual issues that occurred in specific 'in the wild' projects and to generalise findings in a palatable way that may enable the broader community to understand some of the difficulties of carrying out 'research in the wild" in diverse settings.

In Chapter Nine, Peter Tolmie provides a thoughtful response to many issues relating to 'research in the wild' in a carefully constructed piece that makes the reader think about both the practicalities and the unpredictable nature of working in the wild. Tolmie writes, "I want to take this proposition seriously and examine what research orientations to 'the wild' actually look like and what the implications of those

orientations might be." He crafts an intelligent argument based on a significant amount of literature in the field and his discussions throw the homogenous notion of 'in the wild' into sharp relief. We think that Peter's work is a perfect way to end this book.

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