

Introduction to the Special Issue of “The Turn to The Wild”

The phrase “in-the-wild” is becoming popular again in the field of human-computer interaction (HCI), describing approaches to HCI research and accounts of user experience phenomena that differ from those derived from other lab-based methods. It first came to the fore 20–25 years ago when anthropologists Jean Lave [1988], Lucy Suchman [1987], and Ed Hutchins [1995] began writing about cognition being in-the-wild. Then, they took the fledgling field of cognitive science apart, eloquently explaining how cognition observed in everyday practice is distributed and situated in the moment – in sharp contrast to the accepted theorizing at the time of models in the head and knowledge divided among mind, body, activity, and culturally organized settings. Today, it is used more broadly to refer to research that seeks to understand and shape new technology interventions within everyday living.

A reason for its resurgence in contemporary HCI is an acknowledgement that so much technology is now embedded and used in our everyday lives. Researchers have begun following suit, decamping from their usability and living labs and moving into the wild, carrying out in-situ development and engagement, sampling experiences and probing people in their homes and on the streets. The aim of this special issue is to examine what this new direction entails and what it means for HCI theory, practice, and design. The focus is on the insights, demands, and concerns.

This methodological “return to the wild”, however, begs the question: How does it differ from the other applied approaches in interaction design, such as contextual design, action research, or ethnography? What is added by labeling user research as being in-the-wild? One main difference is where the research starts and ends: Unlike user-centered, and more specifically, ethnographic approaches which typically begin by observing existing practices and then suggesting general design implications or system requirements, in-the-wild approaches create and evaluate new technologies and experiences in situ [Rogers 2012]. Moreover, novel technologies are often developed to augment people, places, and settings without necessarily designing them for specific user needs. There has also been a shift in design thinking. Instead of developing solutions that fit in with existing practices, researchers are experimenting with new technological possibilities that can change and even disrupt behavior. Opportunities are created, interventions installed, and different ways of behaving are encouraged. A key concern is how people react, change, and integrate these into their everyday lives.

The small but growing body of in-the-wild studies appearing in the literature has started to show how the in-situ user experiences that are reported are different from the phenomena they were based upon and designed for when created and evaluated in a lab setting. The disparities are most marked when compared with experimental approaches [Rogers 2011]. What participants understand, interpret, and do in these controlled settings when asked by an experimenter to follow instructions and perform certain tasks using a prototype system have been found to differ markedly from what people do by their own volition when approaching or using the same technology when placed in a real-world setting such as a public place or someone’s home [Marshall et al. 2011].

Prototypes are evaluated in the context of how they are used and integrated within people’s lives. This involves observing and recording what people do and how this changes over suitable periods of time. Whereas the burning question in HCI used to be “how many participants do I need?”, the hotly debated question now is “how long

should my study run for?” Some say a few weeks, others argue for months, while some even suggest years are needed to show sustainable and long-term effects. The outcome of conducting in-the-wild studies for different periods and at different intervals can be most revealing, demonstrating quite different results from those arising out of lab studies. Crucially, people’s motivation for participating varies: It is one thing for someone to volunteer for a short-term experiment, while another for them to integrate a novel technology into their life in order to change their behavior.

So far, the in-the-wild studies that have been published have tended to be piecemeal, reporting on a specific prototype or phenomenon, and demonstrating how people appropriate and use technologies in a diversity of settings. The few papers that have compared findings from one context to another have shown that, while many usability issues can be revealed in a quick lab study [Kjeldskov et al. 2004], actual use aspects are less easily revealed in such settings. Developers, researchers, and users have to ground their work in the open environment of everyday realities to explore how people might approach a technology, find it beneficial, appropriate it in the context of routine activity, and use it in a sustained way over time [Marshall et al. 2011; Rogers et al. 2007].

However, in-the-wild studies are expensive to run and expectations are high as to what they will provide. There needs to be more explication of the benefits and costs if the trend is to become more mainstream. Other concerns include the extent to which researchers can invade people’s lives in the pursuit of their goals. Are they equipped to address new topics with the right tools, sensibilities, and level of professionalism? How do they position themselves with respect to others already studying non-traditional HCI concerns? Is there anything left in-the-wild that we have not studied? Are we seeing a trend for a “search for the new wild”? What might that be, for example, undeveloped and uncharted areas of the world? At what point do we stop? Finally, is it worth it – arguably, you can learn a lot more if you are asking specific questions in lab studies?

The articles in this special issue offer a diverse set of perspectives on in-the-wild. Authors variously reflect on the understandings and the pros and cons of conducting in-the-wild research in a variety of contexts. Whereas the early work on in-the-wild was more a critique of the prevailing cognitive science paradigm, we see here how its use now is much broader. The rhetoric, frameworks, and theories of the new turn to in-the-wild are touched upon alongside several extensive case studies of longitudinal studies of wild places that have used different approaches to in-situ design and prototyping in-the-wild. The researchers’ role, responsibilities, and the ethics of moving in-the-wild are also discussed.

The first two articles provide methodological frameworks for shaping and understanding technologies in-the-wild. Steve Benford, Chris Greenhalgh, Andy Crabtree, Martin Flintham, Brendan Walker, Joe Marshall, Boriana Koleva, Stefan Rennick Egglestone, Gabriella Giannachi, Matt Adams, Nick Tandavanitj, and Ju Row Farr’s article, “Performance-Led Research in-the-Wild”, sets the scene by discussing what is involved in the staging of public artworks that have engaged with exploratory HCI research. They view this hybrid form of art – technology-enhanced theatrical performances – as engaging with “real” users with emerging technologies in “real” settings under demanding conditions of actual use. Significantly, it is the artists, rather than the researchers or users, that lead these projects; this raises different challenges and demands of research in-the-wild than if it was the researcher. To illustrate their approach, they describe and reflect on a series of innovative projects they have been involved with over the last 15 years. In particular, they discuss how the artists they have worked with use a diversity of emerging technologies in innovative and unusual ways, pushing it in unforeseen ways. They point out how this raises new design values and

approaches that can be sometimes contrary to the prevailing wisdom in HCI. They end with a discussion of how their performance-led research in-the-wild approach might be generalized to other settings, using the insights they have gleaned from what happens when you mix practice, user studies, and theory in complex ways on stage.

Anne Adams, Elizabeth Fitzgerald, and Gary Priestnall in their article, “Of Catwalk Technologies and Boundary Creatures”, focus on the methodological challenges of working in-the-wild. Specifically, they offer a metaphor (catwalk technology) that is designed to help researchers balance innovation and scalability. Their work builds on a long tradition of trying to establish a relationship with stakeholders in a field project in such a way that both their needs and those of the researchers are met through the course of the project. The solution they offer is that of a “catwalk technology”, one that is developed to be novel but also offer hooks suggesting other designs that are scalable and sustainable.

The next three articles illustrate the “wild” benefits of sustained (years, not weeks, of interaction) and large-scale engagement involving whole communities and, in the case of the third article, multi-region uptake. In “Wild at Home: The Neighborhood as a Living Laboratory for HCI”, John M. Carroll and Mary Beth Rosson survey a twenty-year endeavor to engage with members of their neighborhood in Blacksburg, Virginia. Reporting on a series of projects with a range of groups, they elaborate five lessons on how to build effective community systems. Their experiences of a long-term, participative commitment – “rewarding, though often inefficient” – with the need to be open and responsive to changes in perspective, relationships, and appropriation of ideas provide an insightful tutorial and case study for anyone thinking about a long-term, sustainable in-the-wild community project.

In their article, “P-LAYERS – A Layered Framework Addressing the Multifaceted Issues Facing Community Supporting Public Display Deployments”, Nemanja Memarovic, Marc Langheinrich, Keith Cheverst, Nick Taylor, and Florian Alt reflect on the design of public displays in the wild. They elaborate on framework called P-LAYERS, supporting the design, deployment, and maintenance of public displays. The framework is developed on the basis of diverse in-the-wild experiences, three of which are drawn upon in detail to illustrate the framework. The framework draws analytic and practical attention to five distinct layers of design that may provide a useful orientation when developing and situating public displays in the wild. These layers include hardware, system architecture, content, system interaction, and community interaction design.

Elizabeth Bonsignore, Alexander J. Quinn, Allison Druin, and Benjamin B. Bederson’s article, “Sharing Stories “in the Wild”: A Mobile Storytelling Case Study Using StoryKit”, describes how they designed and evaluated in situ an authoring tool intended for children to use with their families on their mobile devices. Their project spans several years, during which a whole range of methods were used to evaluate and evolve the tool. The authors describe in detail how the mobile app was actually used in-the-wild by a large number of children. They point out how they observed several unexpected lab-wild divergences [Rogers 2011], highlighting how in-the-wild stories, created by real users, were quite different from in-the-lab stories by workshop participants. They also found their mobile app was used extensively by groups they had not expected, such as those with special learning needs. The app turned out to be a huge success: It was used over 2 million times by almost 386,000 distinct users in 175 countries and in 40 languages/dialects over a three-year period (2009–2011). That is a lot of wild data! The article includes an overview of how they managed and analyzed this kind of burgeoning data to good effect, including mining web data to track user behavior patterns. They also show how their indices of use and other findings were fed back into an evolving design process as new mobile technologies

they could run on appeared on the market (e.g., iPads). Watching your app used so successfully in-the-wild, over many years, and having no control over how it does this, but being able to help it grow, is a great achievement.

The last article, “Wild in the Laboratory: A Discussion of *Plans and Situated Actions*”, by John Rooksby, reminds us that the definition and values of in-the-wild are still very much being forged and contested. In his article, Rooksby goes full circle: critically discussing the reasoning behind the lab-based study and the critiques of ethnography in Suchman’s *Plans and Situated Actions*, arguing that a further appreciation of the text could, “...help in moving towards forms of social analysis that span both the laboratory and the world outside.” More generally he discusses the nature of lab-based research as a natural setting and posits that if there is to be another turn to the wild, this should in many respects be a turn towards research methods that appreciate the importance of human practice. Rooksby concludes by drawing our attention to the way that the metaphor of the wild is interpreted by HCI and issues relating to this, and he proposes the movement of HCI into what he coins the post-ethnographic phase, a movement away from specialist workplace IT solutions towards a more product-oriented environment.

Together, these articles articulate a vision for HCI research that is distinctively “real”. Being real in this new era for HCI means going beyond the researcher as passing visitor or tourist of previous participatory design periods. It involves a greater degree of embedding and engagement with those with whom we seek to partner. Being real also requires us to move on from managing the risks of “deployments” and to seek to exploit the uncertainties and dynamics of real contexts. Above all, it powerfully reminds us of the purpose of HCI, articulated eloquently by Carroll and Rosson, which is “to ensure that human values and human priorities are advanced and not diminished through new technology. This is what created HCI; it is what led HCI onto and then off the desktop; it will continue to lead HCI to new regions of technology-mediated human possibility”.

We hope you enjoy reading these articles and that they inspire additional research.

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