
What to Study in HCI?

Kasper Hornbæk

Department of Computer Science, University of Copenhagen, Denmark.
kash@diku.dk

Antti Oulasvirta

Department of Communications and Networking, Aalto University, Finland.
antti.oulasvirta@aalto.fi

Stuart Reeves

School of Computer Science, University of Nottingham, UK
stuart@tropic.org.uk

Susanne Bødker

Department of Computer Science, University of Aarhus, Denmark.
bodker@cs.au.dk

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s). Copyright is held by the author/owner(s).
CHI'15 Extended Abstracts, Apr 18–23, 2015, Seoul, Republic of Korea.
ACM 978-1-4503-3146-3/15/04.
<http://dx.doi.org/10.1145/2702613.2702648>

Abstract

The question “What to Study in HCI” has two parts. First it asks how HCI researchers think about the research challenges they tackle: how do they decide what problems to engage with and how to study them? Second, the question also asks what *is* the subject of HCI: which challenges should researchers address and, ultimately, what makes us unique as a discipline? While there have been intermittent discussions on this topic in HCI, the present workshop emphasizes this question and explore some possible answers among a group of seasoned researchers. One reason is our belief that researchers can benefit from addressing these questions so as to develop their *practical* understanding (e.g., “tricks of the trade”) of how to tackle the complexity of selecting “what to study”. Second, we argue that researchers can benefit from thinking about the epistemological grounds upon which they base their everyday work, that is, thinking about what HCI is. The workshop results in publicly available key readings and position papers on “What to Study in HCI”.

Author Keywords

Methodology; research questions.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

The question *What to Study in HCI* is simple, yet essential for planning PhD studies, for academic development as a professor, and for the advancement of our field. In 1982, Campbell and colleagues published a book called *What to Study: Generating and Developing Research Questions* [1]. They argue that while generating research problems can be an “idiosyncratic process”, there may be benefits in a more systematic examination. The book then discusses the principles of how to choose compelling research questions, with examples from organizational psychology. Other fields have similar attempts, but we know of no equivalent work in HCI. The present workshop attempts to raise this question for HCI and to provide resources for discussing it—in part to become more reflective as researchers about our own practices [10], as well as understanding what strategies may be employed to do so.

One part of the question concerns *how individual HCI researchers think about the research questions they tackle*. This part concerns navigating in a multi-disciplinary field, balancing research output and research depth, and finding a personally meaningful approach to research. Another part of the question concerns *which research questions HCI as a field should address*. This part concerns identifying the pressing questions of our field and, ultimately, what makes us unique as a discipline.

Discussions about HCI in HCI

In HCI there has been an intermittent discussion of these questions. Some of the points of this discussion have emerged during HCI’s early moments. For instance, Alan Dix (in 2010) noted how the ergonomist

Brian Shackel’s keynote delivered at the INTERACT conference in 1987 posed “A key question [...] whether HCI was a discipline, or merely a meeting between other disciplines” [4]. Shackel seemed to be asking an implied question about the constitution of HCI’s research questions: whether they were collisions between (say) cognitive ergonomics and computer science or whether they had an ‘indigenous’ quality.

Perhaps the earliest formal discussions of the scope of HCI’s research questions—and what kinds of research questions are distinctive to HCI—were raised by Long and Dowell in 1989 [8]. In an attempt to clarify what HCI’s problems were, Long and Dowell weighed up whether HCI might be characterised as a craft discipline, an applied science discipline, or an engineering discipline, with each implying different kinds of research questions and organisations of knowledge [8].

Ben Shneiderman (in 1993) tackled the issue more pragmatically, providing a description of the “Maryland Way of Innovation” and what he termed as the “seven sparks” of innovation: “1. Choose a good driving problem; 2. Become immersed in related work; 3. Clarify short-term and long-term goals; 4. Balance individual and group interests; 5. Work hard; 6. Communicate with internal and external stakeholders; 7. Get past failures. Celebrate success!” [11].

More recently (in 2010), John Carroll returned to this topic, long after his discussions with Long and Dowell in the late 80s [2]. Carroll reflects on the disciplinary scope of HCI and the kinds of questions that it generates, placing the “ever-expanding concept of usability” as its core generator. For Carroll, then, HCI is

a “meta-discipline” with “no single disciplinary problem or specified set of practices, and certainly no single conception of effectiveness”.

What is clear from this brief summary is that discussions *about* HCI in general are few and far between. And that reflection on specific parts of the question of *What to Study in HCI* remains only occasionally addressed.

Applying *What to Study* to HCI

Given this, we suggest that applying *What to Study* to HCI specifically could be of value. In positioning this as an ongoing (but sporadic) discussion in HCI, we also aim to raise awareness of the value of Campbell et al.’s questions. In particular, we will get to touch both questions of what *is* the subject of HCI, what makes us distinctive as a discipline, how to work in HCI, and how to make choices in HCI as a researcher or student.

To this end it is worthwhile to use this workshop as a way of starting a process of developing more extensive resources for helping aspiring and established researchers think about *What to Study in HCI*, particularly in aiding practical understanding around how to manage the complexity of decision-making around ‘what to study’-type questions.

Practically applying the questions of *What to Study in HCI* involves goal setting. Goal setting in HCI is challenging due to the rapidly changing technology landscape and the lack of well-established sub-topics. This part of the question is also hard because HCI seems to have no consensus on what we need to study (which may be a positive or negative matter). A recently-performed co-word analysis of CHI paper

keywords (published at CHI 2014) argued for lack of continuity in HCI research and a failure to identify clear “motor themes” that drive the discipline [7]. While we might question the usefulness of keywords as a ‘barometer’ for the discipline, what is clear is that HCI researchers are at times struggling to separate research questions from the very technologies that they answer them with.

Although earlier work in various parts of HCI has formulated research agendas (e.g., [3, 5, 6]), we argue that a more general discussion of this question has deep consequences for our discipline and the success of our research. We also consider the development of greater reflection in our research practice to be a healthy activity for HCI to be engaged in, in line with many other disciplines [10].

Workshop aims and outcomes

The workshop aims to bring together seasoned researchers to discuss these two parts of the question *What to Study in HCI*. The intended outcome is to have a personally inspiring discussion among participants. In addition we aim to contribute to the field two sets of documents that may help both aspiring PhD students and mature researchers think about what to study. They are (a) a set of publicly available key readings for thinking about these questions and (b) a set of position papers, updated based on the workshop, that explain participants’ thinking about these questions.

Acknowledgements

Stuart Reeves acknowledges EPSRC EP/K025848/1.

References

- [1] Campbell, J.P., Daft, R.L., Hulin, C.L., Association, A.P., and others. *What to study: Generating and developing research questions*. Sage Beverly Hills, CA, 1982.
- [2] Carroll, J. M. Conceptualizing a possible discipline of human-computer interaction. *Interact. Comput.* 22, 1 (January 2010), 3-12.
- [3] DiSalvo, C., Sengers, P., and Brynjarsdóttir, H. Mapping the Landscape of Sustainable HCI. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, ACM (2010), 1975–1984.
- [4] Dix, A. Human-computer interaction: A stable discipline, a nascent science, and the growth of the long tail. *Interact. Comput.* 22, 1 (January 2010), 13-27.
- [5] Hassenzahl, M. and Tractinsky, N. User experience - a research agenda. *Behaviour & Information Technology* 25, 2 (2006), 91–97.
- [6] Kuutti, K. and Bannon, L.J. The Turn to Practice in HCI: Towards a Research Agenda. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, ACM (2014), 3543–3552.
- [7] Liu, Y., Goncalves, J., Ferreira, D., Xiao, B., Hosio, S., and Kostakos, V. CHI 1994–2013: Mapping Two Decades of Intellectual Progress Through Co-word Analysis. *Proceedings of the 32Nd Annual ACM Conference on Human Factors in Computing Systems*, ACM (2014), 3553–3562.
- [8] Long, J. and Dowell, J. Conceptions of the discipline of HCI: craft, applied science, and engineering. In: Sutcliffe, A. and Macaulay, L., (eds.) *People and Computers V: Proceedings of the Fifth Conference of the British Computer Society*, pp. 9-32, 1989.
- [9] McGuire, W.J. Creative hypothesis generating in psychology: Some useful heuristics. *Annual review of psychology* 48, 1 (1997), 1–30.
- [10] Schön, D. *The Reflective Practitioner, How Professionals Think In Action*, Basic Books, 1983.
- [11] Shneiderman, B. *Sparks of innovation in human-computer interaction*. Intellect Books, 1993