

Sustainable HCI: What have we learned?

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WORKSHOP QUESTIONS

I welcome the theme of this workshop because talking about it together as a community seems like a necessary way to move forward. Below are my thoughts on some of the posed questions. I look forward to discussing more at the workshop.

1. What is sustainability?

For me, definitions of sustainability like the ones in the National Research Council Report and the Brundtland report (mentioned in the workshop proposal) primarily help to draw attention to the broader dimensions of sustainability. However, I feel that they are less helpful (in fact, overwhelming) in thinking concretely about things we as a field can do, which makes me wonder what role these definitions could/should have for us? The abstract nature of definitions like these ones has been raised as a general concern (i.e., they are problematic to address not only in HCI). Whose sustainability are we talking about, and where? And again, what counts as a “need”?

Leaving these definitions aside for a moment, what has been more helpful for me in better understanding aspects of sustainability is to study people who are very dedicated to environmentally friendly lifestyles, and learn about what living sustainably means to them. What does it mean “on the ground” to try to live sustainably in everyday life? Drawing on two studies of simple living families [4], and organic farm families [5] respectively, I have learned about their practices, values, and everyday strategies related to sustainability, as well as their use of ICT to help and/or hinder living more sustainably. Taking one key insight as an example, I learned about the value of seeing sustainability holistically [4]. The families see sustainability as broader than environmental issues, encompassing the social and personal too. This is clearly aligned with the definitions above, without being about specific goals. For the families, it means that it doesn’t make sense to live sustainably in one aspect of life but not in another. Further, seeing sustainability holistically emphasizes that it is only achievable with other people e.g., in a family and community, rather than as individuals. For HCI, it suggests that designing for sustainability can mean a broader set of things than being about “being green”. While I think this opens for exciting opportunities to think about how we can support sustainability, it also raises questions about how we evaluate the result.

Returning to the families, one way several of them have chosen to address sustainability in everyday life is to homeschool their children. This is an attempt to focus on values and practices tied to how they see sustainability (e.g., appreciating and respecting nature, practical skills like gardening to grow one’s food and know where food comes from, community-building activities), and to avoid consumerism. This is a deliberate and long-term investment to support alternative futures, yet it is very hard to translate into or “evaluate” in terms of for instance “emissions saved” or “positive influence on the vitality of the world’s ecosystems” or even link them to goals in the definitions we have seen. So how should we look at such efforts? What does that, in turn, say about definitions? This is not to say that definitions are not needed, however, how HCI chooses to define sustainability will have implications for what we look for in an evaluation. I wonder if it also makes it harder to allow for emerging bottom-up definitions that might arise when communities themselves think about what is important for them, with respect to larger goals.

3. What crucial open questions remain?

One indirect question is how we in HCI need to change as an academic field to better reflect sustainability as an important goal. How can we change from being a technology-oriented field that stresses novelty and technical advancement, to a field that accepts more alternative forms of engagement with technology that better support sustainability? Building on Blevis’ suggestions to address recycling, reuse, renewal etc. [1], how can we break from the cycle of newness in our own field?

5. How should HCI & Sustainability research be evaluated (e.g., is it possible or desirable to review papers in different genres with one coherent framework)?

If the question is about whether “regular” HCI research and “sustainable HCI” research should be evaluated based on the same framework, see my response to question 3. It seems like if we want to address sustainability more seriously (suggesting that it’s unsustainable to continue to advance technology by creating new all the time), we cannot evaluate sustainable HCI research simply based on the same principles as “regular” HCI research. As others have already pointed out [1], sometimes the “most sustainable” solution might be to not design (technology) at

all, which complicates things from a regular HCI point of view. However, it is not trivial how we could become more sensitive to – and evaluate – alternative “success stories” *within* our academic field.

7. How can we make better use of sustainability knowledge from outside HCI?

I think we need to approach this challenge as a community, not as individual researchers. The task of *systematically* analyzing what related work outside our field makes sense to take into consideration in HCI seems overwhelming. Instead of everyone thinking “new”, are there ways we can discuss and maybe even agree on what is important knowledge for us to consider? Should we get together and do a large literature review/analysis? Should we (as in the sustainable HCI community) have some other, more dynamic, online resource that for instance could help new students coming to the field with an interest in, but limited experience of, sustainability questions? After all, our (or at least my) core skills are in HCI-related areas, not in sustainability-related areas, which makes it more difficult to *carefully* select key works, as well as identify how they could apply to us. The latter seems important too: to what extent *could* our field concretely and constructively use that knowledge in what we do, and the power we have?

One thing that I have become more aware of, having recently moved back to my native Sweden after living in the US for 2 ½ years, is differences at a nation level in tackling environmental problems, structural differences that matters for what kinds of solution one can aim for, political and cultural differences etc. These factors affect what we can do locally, which could mean that the methods and knowledge we need might differ from country to country (even though the larger goals are similar). How does this affect what we as community see as necessary knowledge to bring in? I think being more aware of and open about such structural differences could be helpful for us as an international community when talking about what we can do, expect, aim for, etc.

Finally, besides working together in the community to identify and bring in knowledge from outside HCI, I think that generally working more with *other groups* in society is necessary to get exposed to outside knowledge, skills, and just a better sensitivity for how working with sustainability challenges happens at different levels. Participatory design and action research (see more in my reply to question 8) come to my mind, but perhaps we should also think more about other methods (besides more knowledge)?

8. How can we encourage work that contributes substantively to practical efforts to achieve sustainability?

I've recently become more interested in the potential of using action research [see e.g., 3] as a way to work interdisciplinary together with other “real-world” partners

and stakeholder on sustainability issues. It seems like one possible way to use our skills and knowledge to address a (real-world) problem that there might even be some local strategy for, and at the same time take advantage of being exposed to knowledge from other fields and bring it back into HCI.

If we were to engage in action research or similar approaches, *one* possible way evaluation could follow is to evaluate internally among partners who are familiar with the (local) problem. As discussed in [3], action research focuses not solely on the outcome, but also on the process itself, on the value of the social network and knowledge being built up as a result of working together, etc. I'm attracted to its holistic approach because it seems to fit sustainability-oriented issues, where many results could be equally important in the long run as the direct positive impact on the environment.

BIO

I'm currently an assistant professor at the department of Applied IT, Chalmers University of Technology, Sweden, with a focus on sustainability and ICT design. Between 2011-2013 I did a postdoc at Cornell University, USA, where I studied “simple living” families and organic farm families to learn about lived sustainability from people who voluntarily make sustainable choices based on a concern for the environment and wanting to increase personal and social wellbeing. Am I new or established? I would say somewhere in between. I'm established in the sense that I have done empirical studies and published papers on topics related to sustainable HCI. Those activities have guided me into the field of sustainable HCI. However, in thinking about several of the posed questions, I feel as if I'm still new to the field. The questions are still complex, overwhelming, and abstract, to the point where I don't know if I have any useful answers.

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