HCI on the Move: Methods, Culture, Values

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Abstract

As HCI is taken up across different cultures, its methods have typically been presumed to be culturally universal. Though evidence suggests that they are not, dimensions of cultural specificities of HCI methods are not understood. Through detailed fieldwork with design practitioners in Delhi, India, I propose to develop a framework for understanding tacit material, cultural, and value commitments in HCI design methods, opening up possibilities for alternate conceptions of design.

Keywords

STS, Cross-cultural design, ICT4D

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms

Design, Human Factors

Introduction

While many researchers in human-computer interaction develop and evaluate design methods, little is known about how these methods are taken up and made to actually work in non-Western contexts. The movement of design methods and practices developed to non-Western contexts becomes increasingly critical as globalization inspires intercultural collaborations, cross-cultural software design, and Human Computer Interaction for Development (HCI4D) projects among HCI practitioners. The globalization of design methods is a broader trend in product development and research calling for the teaching of user-centered design (UCD) practices in India and Africa [6].

Are HCI methods culturally universal? Preliminary evidence suggests that they are not. Design methods and models of human-computer interaction have been grounded in concepts like interface, efficiency, and psychology – concepts foreign to many of those they engage with. Persuasion, evidence, and intervention vary widely globally. Practicing HCI4D researchers understand that HCI methods are not culturally universal. Take for example this tale from the field, drawn from a note in the methods section of a CHI 2009 note on input device efficiency [12,13]:

An HCI researcher sought to experimentally compare input mechanisms on two phones in a controlled setting in rural India. He converted an office into a makeshift lab and enrolled participants. He soon learned that most female

participants did not have the means or the time to travel to his controlled setting. He adapted his method by traveling to these women's homes and found, then, that he would not be allowed in the room female participants without a supervisor.

The controlled settings of the ergonomic experiment had to adapt to accommodate differences in appropriate social relations among strangers in India. Such stories of cross-cultural adaptation of methods are common in conversations among HCI4D practitioners. Methods commonly used in Europe and America, such as participatory design and technology probes, fail to translate to contexts with different cultural knowledges, social relations, and infrastructure. Design methods entail ways of engaging with others, describing knowledge, and translating knowledge into technology implementation that are more or less appropriate in different cultural settings. Practically, design can also often enlist diverse people in long-term intellectual, economic, and corporate projects that, like anything, are value-laden. These cultural specificities of such design methods with primarily Western histories are poorly understood yet central to HCI projects.

My research seeks to answer the following questions:

- How do design methods and practices represent culturally particular ways of knowing and intervening in the world?

- Through what social and team processes do new kinds of design engagements emerge in response to local, cultural contingencies?

Expected Contributions to HCI
I will develop a framework to understand cultural specificities of HCI design methods. This framework will serve as a tool for HCI researchers to consider the values, politics, and social relations tacitly promoted by

different methods, suggesting new avenues for engagement in the increasingly diverse circumstances in which they do research. Thus, my primary contribution is a defamiliarizing analysis of design practices in cultural context. This analysis will provide methodological insights that can spark new HCI methods, projects, and approaches.

By showing how design methods are tied to local culture, social relations, and infrastructure, this work contributes to software engineering literature on requirements engineering and system evaluation, particularly in collaborative and globalized settings. This research suggests ways to adapt or generate new methods appropriate to different cultural settings. It will also contribute to understanding value sensitive design in broader global contexts. This is relevant not only in the "developing" settings, but also for any sort of collaborative design work that brings different cultures into contact.

Related Work
There is ample evidence that design conventions and heuristics do not move easily across cultural contexts. HCI visual conventions have proven not to be universal – systems effective in the US may fail utterly in Japan or South Africa. For example, design aesthetics vary wildly from place to place [8] and taken-for-granted symbolic literacies, such as recognizing an image representing a GUI button, are strange in less computer-saturated cultures.

The processes of designing and deploying HCI4D have proven challenging across cultures as well as analytical units, interpersonal norms, and cultural meanings implicit in HCI methods have come into question. Some researchers have called users into question as the primary unit of design research analysis and engagement, instead suggesting "communitization" or

community-centric design (e.g. [9]). Community engagement has become important in requirements elicitation and co-design (e.g. [3,9,14]), as well as making deployments sustainable [2]. Other researchers have noted that interpersonal engagements of HCI design methods such as fast rapport or one-on-one engagements are not always culturally appropriate, failing to successfully engage potential users as a result [3]. Others have found that cultural differences between usability evaluators and participants affect evaluation outcomes [10,17]. Less attended to in this methods research are conflicts between different culturally-bound forms of knowledge about the world. An exception is [15], who noted that Western usability methods failed because Nigerians considered software successful by criteria other than usability criteria of learnability, speed, and memorability.

Theoretical Approach

My work addresses several weaknesses of related work in this area, including: nation-state models of culture, a lack of attention to epistemology in design methods, and Western assumptions in value-sensitive design.

First, related work in HCI typically uses a nation-state model of culture. This model assumes, for simplicity, that people of the same nation-state share a common culture and this culture is learned and carried within the individual as "software of the mind" [5]. Such models have been shown to be analytically weak, both in studies of cross-cultural collaboration (e.g. [4]) and in anthropology literature broadly. Instead, I approach culture as everyday, situated practice taking place within common histories, media, and economic conditions. Anthropology of globalization and postcolonial studies (e.g. [1]) serve as a resource. In studying a specific site of design in India, I will look at how different aspects of Indian culture specifically affect design methods in a particular place. Because

HCI has found situated accounts of action so productive, this situated model of culture should be particularly productive for HCI.

Second, related work in HCI methods has recognized conventions of language and interpersonal interaction as a problem but has not investigated how design methods come from and manifest particular ways of knowing and encountering the world. Cultural differences in knowledge production and representation, as well as distinct forms of politics, representation, may necessitate radically different methods or even aims for design. What is true or is causal can be very different from place to place. I ask how design methods – ways in which HCI practitioners examine and intervene in the world – are culturally particular? I draw on Science and Technology Studies, which asks very similar questions of science (e.g. [17]).

Third, design methods, like technologies, can have values. Friedman et al. argue that technology can be designed to express values such as freedom from bias or privacy, just as participatory design expresses "democratic values" [18] in many contexts. Values emphasized in Value Sensitive Deisgn [18], however, are not universal but based on Western ideas of self and sociality. I wish to extend VSD's attention to values and politics of design practice, but expand HCI's understanding of the range of values and commitments that come into play in non-Western cultures.

Method

My research method is detailed ethnographic study HCI practitioners in India. My initial field site is D-Design, a 12-person design firm in Delhi, India. I have lived and worked with them for 7-weeks in Spring 2009. I will continue my fieldwork in Fall 2010 and spend six months observing their technology design projects and six months in analysis and writing. D-Design is an ideal

site to study design methods from a cross-cultural perspective. Their clients are culturally and institutionally diverse. Their work includes ICT4D projects such as the design of software systems and e-learning classroom experiences. This makes it ideal to study how design methods are adapted, modified, and reinvented through intercultural team interactions.

Results to Date

I have developed a theoretical foundation for my work, published as [7] and also forthcoming at CHI 2010. In these works, I argue that power dynamics, histories of colonialism, and generative models of culture are important to understanding intercultural collaboration. From the 7-week field visit, I have identified several key areas of design activity to study closely: engagements with users and potential users; the use and representation of information such as requirements documents, films, personas, and meeting notes; and cases studies that demonstrate unexpected entanglements of design with political, environmental, and cultural circumstances.

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