

PORTABILITY OF DESIGN RESEARCH METHODS:
CULTURAL DIFFERENCES IN THE CREATION OF TECHNOLOGICAL KNOWLEDGE
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When we talk about ICT4D, we are typically concerned with issues such as technology policy, connectivity to the internet, low-cost devices, power, and designing services to help the economically disadvantaged rise out of poverty or improve their standard of living (Brewer 2005). Especially in technology service design, there has been a trend towards working with local people to create contextually relevant interventions (Chetty 2004, Pal 2005). Another approach has been to disseminate technology development tools and methods, such as courses and tools for mobile phone application development, to enable grassroots innovations designed by local community members (Dray 2003, Eagle 2007).

The call for innovation from within comes not only from the development community, but also from government. Countries such as India and Singapore are investing in the development of their economies by creating national design policies to spur the development of innovation and design industries (Bahn 2005). India's "National Policy on Design," for example, calls for partnerships between industry, professional organizations, and educational institutions to adopt state-of-the-art design methods and "know-how" (2007). The policy calls for alliances with foreign institutions to import this knowledge. Nowhere, however, does the India's policy call for the development new design methods within India. Despite Frantz Fanon's postcolonial call for the formerly colonized to "resolve the problems to which Europe could not find the answers" (Gandhi 1998), India's design policies seek answers abroad (National 2007).

Many of HCI's methods, such as participatory design, usability evaluation, action research, and contextual design, have come out of European and American traditions and epistemologies. What are the ways in which design methods must be adapted or reinvented as those in "developing" contexts take them up? How will design methods that emerged in Western infrastructures, social dynamics, and culturally-bound epistemologies fit in radically different contexts? This is the central question we are beginning to explore in our research.

Prior Work

Our work is not the first to note that there may be misfits between today's HCI design methods and the new contexts in which we attempt to put them to use. Chetty (2004) described difficulties in eliciting feedback in participatory design exercises when PD's interactional norms were revealed to be unfamiliar in South Africa. Vatrappu (2006) investigates the effect of Hofstede's power distance between interviewer and subject in usability evaluation. Winschiers (2007) highlights cross-cultural differences in the interpretations of software development methodologies.

Drawing from the Postcolonial Science and Technology Studies

Our work seeks to understand the ways cultural differences in knowledge production and representation – epistemology – may necessitate new methods. These methods may be distinctly local, or they may emerge as hybrids of methods drawn from Western HCI traditions.

We draw from work at the intersection of Science and Technology Studies with Postcolonial Studies to examine scientific and indigenous knowledge practices. The study of the knowledge systems around which different cultural practices are based is a topic almost as old as anthropology itself; perhaps one of the most famous examples is Evans-Prichard's examination of the internal self-consistency and logic of Zande

beliefs about witchcraft, through which he sought to dispel contemporary assumptions about the differences between “modern” and “primitive” thought (Evans-Pritchard, 1937). More recently, studies of “science as culture” (e.g. Pickering, 1992) have examined the ways in which Western scientific practice is embedded within specific cultural settings and imbued with cultural understandings. They argue that the elements upon which Western science is based – such as the independence of the world and the observer, proof by witnessing, and the empirical availability of scientific phenomena – draw on the same sorts of cultural understandings (of individuality, of personhood, of rationality) that are foundational to other areas of cultural life such as liberal democracy or economic management.

What this suggests, then, is that the encounters between western science and other cultures is not simply an encounter between different technologies and different capabilities, but between different culturally-bound ways of knowing (Watson-Verran and Turnbull, 2001). A series of useful examples is provided by the case of encounters between western settlers and indigenous Australians. Amongst the best known are debates around land ownership. These would be difficult problems if they were founded purely on competing claims to own or have access to this or that plot of land. However, the rifts in mutual understanding go beyond geographical questions into fundamental epistemological differences between the cultures. While western conceptions of land are geometric and cartographic, defined in terms of abstract and objective boundaries, the indigenous encounter with the landscape is personal, cultural, mythic, and deeply relational. The land does not have a shape independently of one’s being in it, and the shape that it takes on depends on who one is, where one has come from, and how one is connected to the land through a series of ritual responsibilities and patterns of history and kinship (Turnbull, 2000). Debates over land ownership, then, founder even on questions of how the land can be described and known as these two systems of knowledge and representation are brought together.

The question is therefore one of what it is to know something, and what it is to be able to tell it; and, clearly, this affects any efforts in “knowledge management” – including design knowledge management – by which indigenous understandings are to be harnessed to western techno-social practice (Verran, 2002). In more recent work, Verran and colleagues have attempted to understand these questions specifically in the context of online practice and digital information, with the goal of developing an indigenous approach to information management (Verran and Christine, 2006).

As many Western HCI research methodologies are drawn from human sciences, Science and Technology Studies perspectives help us see how transplanted design methods may misfit. In scientific disciplines, methods, after all, are means for generating knowledge; they are approaches by which an uncertain world is coaxed into providing certainty to those who will use the knowledge. In the case of information technology and interactive digital systems, our design methods are means by which the understandings and needs of a user community can be articulated and formulated so that they become amenable to the kinds of design tools that we have at our disposal. If ICT4D relies on the portability of methods across national or cultural contexts, then a postcolonial perspective will cause us to inquire into the nature of knowledge assumed by these methods and the forms of knowing at work in these encounters.

Future Work

Building on this perspective on cultural difference in knowledge production, we are beginning research that seeks to see these dynamics unfolding in the work of designers in developing countries. We suspect that local designers using Western design methods in non-Western countries are translating, reappropriating, or even discarding those methods. They may be inventing new methods to suit local contingencies. One need

not leave the West to some of this ad-hoc localization at work. As a designer at Google in the U.S., I constantly reinterpreted and modified the methods I learned in design education programs to suit local conditions such as heavy reliance on textual communication and measurable “scientific” ways of knowing. If Western design methods require translation even in the heart of Silicon Valley, one expects that such processes are at work with very different results across the world as well.

We seek to study sites in Asia where Western design methods, such as iterative prototyping and participatory design, are being deployed. Sites may include multinational product companies or educational institutions. How do creators organize themselves socially and temporally in these other locales and how is that linked to local culture, infrastructure, and history? What kinds of boundary objects do creators in adopting contexts produce? What kinds of rhetoric are produced to mobilize action? By observing reinterpreted or even newly invented design methods in Asia, we seek to defamiliarize Western methods and provide a comparative understanding of the ways design knowledge production reflects local knowledge practices.

Conclusion

Writing about the postcolonial condition in Africa, Francis Nyamnjoh describes efforts to emulate Western knowledge practice and institutions in Africa. He argues that such efforts engender “an exogenously induced and internalised sense of inadequacy...endowed with the mission of devaluation or annihilation of African creativity, agency, and value systems” (2004). Though Africa cannot represent all developing regions, many developing regions share colonial encounters past, the aftereffects of which can still be seen. As developing countries such as India resolve to adopt Western design and innovation methods, it is worth recognizing not only the frictions and misfits of imported methods, but also the potential for those designing in developing contexts to localize or invent new methods suited to their needs. These methods might not be radical breaks – globalization, after all, is a real force through which imaginations and ideas travel from region to region. Thus, Western designs are relevant to ICT4D, but we hypothesize that these methods cannot be adopted whole. Philosopher of Science Helen Verran has called for “postcolonial moments” in science studies that attempt to create shared, hybrid understandings drawing from different knowledge traditions (Verran 2002). We seek to create postcolonial moments in design, where the Western models of experience design can be critically understood and hybridized with other locally rooted ways of knowing to create new toolkits for ICT4D.

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