Using Cultural Probes In New Contexts: Exploring the Benefits of Probes in HCI4D/ICTD

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ABSTRACT

Cultural probes have long been used in HCI and CSCW to provide researchers with glimpses into the local cultures for which they are designing. Researchers in HCI4D/ICTD are increasingly interested in more deeply understanding local cultures in the developing regions where they work. However, few use cultural probes in their research. I present a case study describing my experience using this subjective, design-led method in Bungoma County, Kenya. Returns from my comment cards and digital camera activities draw attention to the diversity, idiosyncrasies, and complexity of everyday life in Bungoma. I conclude that cultural probes can benefit HCI4D/ICTD research.

INTRODUCTION

Nearly 20 years ago, Bill Gaver *et al.* introduced cultural probes to the HCI community. Since then, HCI and CSCW have seen widespread use of these designed objects that are meant to provide designers with glimpses into local cultures to inspire design [6]. To date, cultural probes have been underutilized in HCI4D/ICTD—an established research area that examines how technology “can be designed to (...) address the distinctive needs of users in developing regions” [9]. The methods used in this research are primarily qualitative, with the majority of studies using “ethnographic inquiry” to inform the design of technological interventions which have traditionally addressed distinctive

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CSCW'19 Companion, November 9–13, 2019, Austin, Texas

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ACM ISBN 978-1-4503-5971-9/19/05.

<https://doi.org/10.1145/3311957.3359454>

KEYWORDS

Cultural Probes; Design; HCI4D; Kenya; ICTD

Figure 1: Comment Cards Box and Digital Camera

needs associated with socioeconomic development (e.g., health, education, and livelihoods)[3]. However, researchers in these fields are working to broaden their concerns beyond these traditional ones. This shift creates opportunities for broadening the methodological approaches used in HCI4D/ICTD. More broadly, this approach can promote discussions within these research communities about the epistemological constraints implicit in traditional HCI methods.

In this interactive poster, I describe my experience using cultural probes during the early stages of a five-year project investigating domestic technology use in rural Kenyan households. To date, I have visited participants' homes twice (June 2016 and May 2017). I offer my interpretations of a few of the hundreds of probe returns collected. I make this contribution to HCI and CSCW: a case study which documents my experience using cultural probes in Bungoma County, Kenya. I also contribute my initial thoughts about how greater use of cultural probes in HCI4D/ICTD can benefit these research communities.

Background and Related Work

Cultural probes are designed objects—frequently packages—that contain open-ended, evocative and ambiguous activities given to people to pursue, and return over a period of time. These activities support the collection of “inspirational data”, that stimulates a designer’s imagination, rather than “informational data,” which is typically used to identify problems associated with users’ needs in HCI, CSCW, and HCI4D/ICTD [6,8]. Probes are also meant to elicit responses, that rather than be the basis for formal analysis, are meant to provide designers/researchers with “glimpses of communities” targeted for design [6]. Since their introduction, this subjective, design-led method has flourished in HCI and CSCW. Cultural probes have been used to explore how to design technologies that support breastfeeding [11], sustainable food practices [1], and older adults’ activities [12]. There are just a few instances of using this method in HCI4D/ICTD. Dell *et al.* describe using a “design probe”—in the form of an online survey design tool—in their investigation of “paper-digital workflows within global development organizations” [4], and Densmore calls observing how employees in a Ugandan NGO interact with “Claim Mobile” a cultural probe [5]. However, both of these examples lack key probe elements (e.g., no package, collection of evocative activities/tasks). Prior efforts that are more aligned with Gaver *et al.*’s description include Chavan and Munshi’s use of “emotion tickets” to explore “emotions associated with technology” in U.S. and in India [2]. Lastly, Soro *et al.* used probes in a “remote Aboriginal community”, and found that they were useful for “foster[ing] engagement” and for providing “unanticipated insights.” They concluded that the technique has value in cross-cultural design projects [10]. I agree with their conclusion and build upon their research by using probes as Gaver *et al.* originally intended (detailed in *The Presence Project* [8]) in rural Kenya. I incorporated essential elements of the approach into this project (e.g., open-ended activities for participants, and subjective interpretations of returns).

Figure 2: “I kept quiet for sometime, it was at night and I heard frogs croaking everywhere loudly. I heard then some foot step of a dog called mulika mwiza barking. It was amazing.”

Figure 3: “Those are just clouds, I took this because they are nice.”

Figure 4: Mobile Phone

MY APPROACH

Reflecting on the ethical and practical constraints underlying my project, and on my assumptions about which activities participants might engage with, I developed these probe activities: responding to comment cards and taking digital photographs. My research protocol received approval from Michigan State University’s Institutional Review Board (IRB) and Kenya’s National Commission for Science, Technology and Innovation (NACOSTI).

Responding to Comment Cards and Taking Digital Photographs. I gave respondents a cardboard ballot box with a side pocket. In each pocket were 16, 5x4 cards with open-ended questions on them (Figure 1). The questions were open-ended, slightly provocative, and intended to encourage surprising responses. Questions included: “What is something Americans should know about Kenyans?”, “Be quiet and listen. What do you hear?”, and “Imagine that you could travel anywhere today. Where would you go and why?” The second activity was taking photographs with a compact digital camera. I attached a laminated card to each camera’s lanyard. It had open-ended and ambiguous prompts; these included: “work,” “fun,” “light,” “faith,” and “anything you like” (Figure 1). Cameras were placed in a resealable plastic bag to make them seem like a package—more practically—the bags were meant to protect the devices from the elements (e.g., rain).

Giving Households the Probes. Myself and a local research assistant relied on personal and professional contacts to identify 22 probe recipient households. Like Gaver’s approach [8], we did not attempt to control for demographics. In June 2016, we introduced ourselves to respondents, and explained our project. We also obtained informed consent for the study. Our consent process included asking for permission to use anonymized versions of their returns in manuscripts associated with this project (all participants consented). We then gave people the probes. We ended sessions by telling participants, that my research assistant would return in two weeks to collect the comment cards, to exchange memory cards (in the cameras) and that I would return in about a year to talk about their responses. As compensation for their participation, participants kept the digital camera with a 4GM memory (combined value of \$28). In May 2017, we returned to 22 households. All invited us back into their homes. Prior to talking to participants about their responses, we explained the project’s progress and—again—obtained informed consent from them. I then showed them 15-30 of their photographs, and 10-12 comment cards. Participants spoke freely and openly about them.

Interpreting Probe Responses/Returns

Rather than provide a comprehensive analysis of participants’ 282 comment cards and 686 digital photographs, I present a few responses. My interpretations are influenced by my conversations with participants, research interests, personal experiences, and idiosyncratic curiosities. Cards and images are shown with participants’ permission.

Fig. 5: Stackable Plastic Chairs

Imagine that you can travel anywhere today. Where would you go and why?
(write your answer in Swahili or English)

Date: 11/6/2016

I would travel to America in such a nice job which includes good payment and in time America has good summer hence I would go to experience the summer climate.

Figure 6: “I would travel to America in such of a nice job which includes good payment and it time. America has good summer hence I would go to experience the summer climate.

Describe a good thing that happened today.
(write your answer in Swahili or English)

Date: 22/6/2016

As I woked up early I found my money which was lost for a week. I was so happy for the money and I rushed to the restaurant to have a cup of tea which was hot and burnt my tongue— but from that day I would never forget.

Figure 7: “As I woked up early I found my money wich was lost for a week. I was so happy for the money and I rushed to the restaurant to have a cup of tea which was hot and burnt my tongue—but from that day I would never forget.”

Sensations in Bungoma. Responses drew attention to sensations that make up everyday life in Bungoma, including the auditory ones: the rumbling of the 18- wheeler trucks on the Trans-African Highway just outside of town, the sputtering of the piki-piki motorcycle taxis, the radios broadcasting news about Kenya’s then- upcoming elections, and the song of the African golden weavers (*Ploceus xanthops*). These and the other sounds (e.g., “frogs croaking”) are “amazing” (Figure 2). As are the visual sensations around Bungoma—including the awe that comes when encountering the gigantic boulders that dot the landscape and the clouds in the area’s vast and expansive sky; indeed, they are “nice” (Figure 3).

Things People Use. Mobile phones are ubiquitous in Bungoma and were present in many photographs (Figure 4). They were used to support respondents’ ludic activities, such as reading the Bible, or— more frequently—just “chatting with friends.” Others described using the devices to play “SportPesa”, a mobile sports betting platform: using the money stored on their handsets, they placed bets on their favorite football teams. Stackable plastic chairs were also ubiquitous (Figure 5). They are inexpensive, lightweight, durable, and significantly more comfortable than the wooden chairs also present in people’s homes.

Surprises. Probe responses should be surprising, and many of mine were. Some responses made me laugh, and prompted more questions than answers (for instance, the response to “Imagine that you can travel anywhere today. Where would you go and why?”). The response in Figure 6 mentioned travelling to America for its good climate, a comment I found surprising because I live in a part of the U.S. known for having brutally cold winters. The cards also captured the unexpected surprises in respondents’ everyday lives—see the story in Figure 7.

FUTURE WORK AND CONCLUSION

Gaver writes that design ideas emerge slowly over time [7], I also find this to be the case [13]. I am developing a collection of “design workbooks” to illustrate early design ideas inspired by participants’ responses [7]. I will return to Bungoma and share these workbooks with the 22 probe recipients (in summer 2019). This paper offers a case study that demonstrates how to use cultural probes, in a way which attempts to stay true to Gaver’s original intentions. My use of the method succeeded in providing the glimpses into everyday life in Bungoma County. The returns from households, as well as the conversations they initiated, draw attention to the diversity, idiosyncrasies, complexity, and—most significantly—the human dimension of everyday life in Bungoma. They capture residents’ multi-faceted lives, as well as to the sounds that are unique to where they live. In my experience, these insights, as well as non-generalizable one-off observations, can be difficult to uncover (and to report) using traditional HCI and CSCW research methods. My conclusion is that greater use of cultural probes, has much to offer HCI4D/ICT4D, especially for the ways they acknowledge the subjectivity, bias, complexity, and emotion that is inherent in research.

ACKNOWLEDGMENTS

This research was funded by the National Science Foundation (NSF) (Award number 1452479). Thanks to Nightingale Simiyu for her assistance.

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