Traversing Boundaries: Understanding the Experiences of Ageing Saudis

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ABSTRACT

This is a methods paper that draws from our fieldwork experiences of conducting qualitative research in Saudi Arabia where we used interviews and probes to understand ageing people's experiences. The aim of this paper is to present insights gained about conducting qualitative research in Saudi. We present a range of the cultural considerations that shaped the design of the fieldwork and highlight opportunities, challenges, and issues that we faced when conducting interviews and deploying research probes. Influences of social-cultural practices and religion presented interesting challenges for recruitment, conducting cross-gender communications, and how participants reported their experiences. This paper offers methodological considerations that include the influences of local culture, gender, religion, etc. We also discuss how we shaped our fieldwork tools based upon considerations of local cultural and religious contexts. In particular, we highlight the usefulness of probes in traversing cultural boundaries when conducting fieldwork in Saudi Arabia.

Author Keywords

Methods; interviews; probes; ageing; Saudi Arabia; HCI; cultural considerations; privacy; gender; social media.

ACM Classification Keywords

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

CROSS-CULTRUAL HCI RESEARCH

In recent years, HCI has extended its Western-centric focus through efforts such as Cross-Cultural Design, HCI for Development (HCI4D) and ICT4D [16, 24, 39]. Despite this, some researchers, for example [22], have highlighted the fact that current HCI research methods are still not culturally universal and stressed the need to adopt, tune and even develop new methods when conducting fieldwork in different cultural contexts. Ways to explore, interact and design technologies with people who live in non-Western contexts require a degree of translation that must consider local culture, gender, religion, education, politics and environment. For example, van Rijn, et al. [36] noted that when researching East Asian participants, researchers should work hard on establishing a level of trust with these participants as this   will encourage participants to more freely express their views and feelings. In Kenya, Oyugi, et al. [31] discussed, among other factors, how pointing out problems or failure to execute tasks in usability studies may cause 'face-loss' to the evaluator and/or participants. Here, they introduced 'Harambee', a usability evaluation method that reduces evaluators' presence by pairing participants. However, we found very little guidance as to how to conduct HCI research in settings such as Saudi Arabia, where its religion and particular cultural values so heavily influences social norms and people's everyday lives and practices [25].

RESEARCHING THE EXPERIENCES OF AGING SAUDIS

This methods paper draws from our fieldwork experiences of conducting qualitative research in Saudi Arabia to understand the experiences of ageing people. This paper focuses on insights gained when using qualitative methods to understand the experiences of ageing Saudis. The aim is to highlight some of the opportunities, challenges, issues, and cultural considerations that influenced our approach, the design of the research tools (interview and probes) and how they were deployed. In particular, we highlight the power and effectiveness of probes to elicit values, views and desires, especially of older female Saudis.

We begin this paper by exploring HCI research and the types of research methods that are commonly used when conducting research in Saudi Arabia. Then, we describe this fieldwork – recruitment, designing research tools for the fieldwork and their deployment. We reflect on our approach and the use of tools during the fieldwork and offer a range of insights into the usefulness of social media as a probe activity. We end the paper by discussing some of the opportunities, challenges and considerations for researchers wishing to conduct fieldwork in Saudi Arabia.

HCI RELATED WORK IN SAUDI ARABIA

Our search through various databases did not reveal a lot of HCI research conducted in Saudi and in the Middle East. From what we found, most of the work are related to efforts to design culturally-centred web and applications in e-government [2, 3], e-banking, [10] e-learning systems, [9, 26] and other academic and commerce sites [4, 32]. Despite their interests on cultural-centred issues, they did not provide insights with regards to cultural considerations when conducting research in Saudi. However, Abokhodair and Vieweg [1] did discuss difficulties when conducting fieldwork in the Arab Gulf, citing issues such as the participants' heightened concerns for privacy and a reluctance to talk to strangers. Similarly Alsulami and Atkins [12] hinted at older Saudi's privacy concerns when discussing barriers to their adoption of Ambient Assistive Living technologies. With the exception of Abokhodair and Vieweg [1], we did not find much guidance as to how HCI fieldwork could be conducted in Saudi.

On the other hand, disciplines such as the social sciences and gerontology do offer some insights and guidance into how we may conduct fieldwork in Saudi as well as approach and work with older participants in Saudi.

RESEARCH METHODS USED IN SAUDI ARABIA

Social scientists and gerontologists were found to commonly use largely distributed self-administrated data collection methods, i.e. surveys and questionnaires. The main reason is because of the challenges associated with privacy and cross-gender communication in Saudi [37].

Privacy to Saudis extends beyond personal boundaries to one's community as a whole. This means that one is protective not only of one's personal privacy but of others within the community. This includes preventing or limiting discussions of personal life and views with 'strangers' [1, 37]. This maintenance of privacy is further heightened when communication is conducted with a non-familial individual of a different gender [1]. A number of papers (e.g., [7, 34]), used by 'foreign' health professionals as a cultural guide when working in Saudi Arabia, have noted that cross-gender communications - male-to-female conversations (and vice versa) - are often mediated through a proxy, i.e. a chaperon/guardian. Traditionally, this chaperon/guardian is a male relative who is tasked with the role of maintaining this privacy.

These two challenges make qualitative research in Saudi highly problematic [1, 21]. Although researchers have reported these challenges`, surprisingly little have been discussed as to how to mitigate these challenges.

Heightened privacy concerns impact significantly on the recruitment of participants for interviews. Some researchers, e.g. [1, 30] have tried to mitigate this by using snowballing sampling method. This method relies on recruited participants to recommend others for the study, acting act as gatekeepers who provide contact points to other potential participants. On the other hand, Al-Saggaf and his colleagues turned to online technologies to provide a sense of anonymity to their participants in a number of qualitative studies, e.g. [5, 6]. They used online forums and instant message software such as MSN for interviews. While they found that female-male segregation is enforced in physical spaces, online cross-gender communication may be acceptable. Interestingly, Al-Saggaf and Williamson [6] noted that the anonymity of online communication was key to allowing participants to open-up, speak-out and express themselves in their own words. However, this 'freedom', does not necessarily extend to online technologies such as social networking sites (e.g. Facebook) where users are expected to identify themselves[1].

In short, there is a lack of reports about culturally sensitive methods and tools that can be used when conducting qualitative research in Saudi Arabia. Research involving older people, for instance, did not elaborate on how illiterate volunteers participated in the quantitative studies or how cross-gender communication was mediated beyond being conducted in hospital or institutional settings in qualitative research. Thus, when designing our fieldwork, we drew what we could from these limited sources. More importantly, we relied upon the first author's understanding of the local culture.

The first author, Soud, was born and raised in Saudi Arabia. He spent the first 18 years of his life in Saudi before moving to Australia to pursue further studies. Soud is bilingual and he is accustomed to the traditions of everyday life in Saudi. He is currently a PhD candidate where he is exploring ways to design digital technologies to support older Saudis to age-well. Living away from Saudi for 8 years, except for occasional short visits, has given Soud some 'distance' and sense of being a 'familiar outsider' when he returned to Saudi to conduct this fieldwork.

THE FIELDWORK

This fieldwork is the first phase of an ongoing larger research project that aims to explore ways to design technologies that can support older citizens in Saudi Arabia to age-well. The focus of this fieldwork is to develop deep and rich understandings of aging Saudis, their experiences, aspirations, values and particular circumstances as well as situations. To do this, we chose to use open-ended interviews and some research probes. This paper only reports on the methods and tools used in the fieldwork as well as the methodological challenges and issues when conducting fieldwork with older Saudis.

Participants

We recruited 14 Saudi individuals to participate in the study: 6 females and 8 males, aged from 55 to 71, eight of whom were couples. Participants came from different socioeconomic backgrounds and various tribes. In Saudi, there are variations in the traditions and spoken dialects from one tribe to another. We conducted the study mainly in Jeddah with the exception of P01 who lives in Makkah

aka Mecca and P13-14 who are in Riyadh. As we will explain later, we chose to conduct the fieldwork in the western region of Saudi as segregation laws are more relaxed. Table 1 presents a summary of the participants, including demographic details. Participants' names have been anonymised.

We were particularly interested in participants who were 55 years of age and older, physically and mentally active, literate, and live at home. The rationale behind this age brackets is because Saudis can apply for an early retirement at the age of 55 [19]. Other researchers researching ageing Saudis have recruited participants as early as 50 years old, citing that this is a *'life stage where persons would begin to reflect about the ageing process and start to prepare for retirement* [23]. We recruited literate participants, because the probes used in this fieldwork involve some reading and writing. We recruited individuals living at home because generally, older Saudis live with their families in the same household and prefer informal home care [8, 29].

Snowballing sampling method was used to recruit participants, starting from our own social circle of friends. As Mytton, et al. [30] note, *"In Saudi Arabia [...] snowball sampling has to be used in a lot of quantitative research because in Saudi culture, it is either difficult or impossible for a stranger to gain access to any household".* Even Saudi researchers, e.g. [1], reported similar challenges in gaining access to participants whom they do not know personally. This form of personal referral helps generate a sense of trust in participants because this referral somehow provides a personal vouch for the researcher. Furthermore, this form of chain referrals also grants the investigator "insider or group member" access [13].

Soud prepared invitation letters, information sheets and consent forms, written in formal Arabic. Even though he is fluent in Arabic, these documents were proof read by various native speakers to ensure clarity, consistency and the correct use of words and grammar. Then, Soud contacted his friends to see if he could recruit their parents in the study. Friends were given envelopes that contained invitation letters to participate in the research and information about the research. The information included the research aims, general descriptions of the research process and how people could participate. During this initial recruitment phase, we recruited three couples and one male participant. These initial participants and their kin then helped referred other potential participants to us.

During recruitment, we did not initiate any direct contact with potential female participants. Instead, we relied on their kin to mediate negotiations. This is because Saudi males are socially responsible to provide for and 'protect' their female family members [11]. As noted earlier, protection can include mediating non-familial cross-gender negotiations.

No	Sex	Age	Education	Industry	Marital Status
P01	F	60	Primary	Housewife	Married
P02	M	58	Postgraduate	Electrical Engineering	Married
P03	M	62	Secondary	Customer Service	Married
P04	M	71	Undergraduate	Education	Married
P05	M	60	Undergraduate	Accounting	Married to P06
P06	F	60	Undergraduate	Education	Married to P05
P07	F	67	Undergraduate	Education	Widow
P08	M	71	Primary	Commerce	Married to P09
P09	F	63	Undergraduate	Education	Married to P08
P10	M	55	Primary	Project Management	Married to P11
P11	F	55	Postgraduate	Education	Married to P10
P12	M	65	Undergraduate	Banking	Married
P13	M	62	Undergraduate	Economy	Married to P14
P14	F	55	Postgraduate	Education	Married to P13

Table 1. Demographics of the participants

However, this does not mean that older female participants lack autonomy. In fact, being older in Saudi, regardless of gender, comes with greater authority, autonomy and respect. An older person's needs and demands are often prioritized over others [34]. At the conclusion of the initial interview, we exchanged contact information with the participant so that they could communicate directly with us directly throughout the 10-day research period.

Research Design

Next, we introduce the research timeline and describe the interviews and our design and use of research probes.

Overall timeline

For each participant, the research spanned over 10 days. The aims of day 1 were to introduce the research to the participants, conduct the first interview, and present as well as explain how to use the probes. This included getting to know the participants, answering any questions they might have, and signing consent forms prior to the interview.

We also presented, introduced and explored the probe pack with the participants. We took card to explain the contents of the instruction sheet that accompanied the probe pack which details how they can use the various artefacts in the pack as well as answering questions they might have. On day 2, the researcher made contact with the participants using WhatsApp (a popular instant messaging application on smartphones) to check if they have any questions, especially with regards to their use of the probes. For female participants, this marked the first direct communication between them and the researcher without the presence/mediation of their chaperons. A week later (day 8) we picked up the probe pack from the participants. The analysis of each returned probes inspired a set of questions which we used as a guide to explore and clarified participants' experiences further in a final short interview which took place on day 10.

Interviews

Semi-structured interviews have been used widely in ageing research to explore lay perceptions of older adults ageing experiences, e.g. [14, 15, 28, 33, 35]. While these publications provide ideas and guidelines on how to conduct research with older people, these were conducted in the West. For example, Brandt, et al. [15] noted that

older adults (at least in Scandinavia) do not view themselves as 'elderly' or 'senior citizens' and thus such terms should be avoided when recruiting participants prior to the interviews. Given the lack of guidance, we approached our interviews by being very mindful of local practices, social conventions, and above all to be respectful at all times.

We conducted face-to-face semi-structured interviews using a set of open-ended questions. The interviews lasted between about 40 – 90 minutes. 12 interviews were conducted at participants' homes. Another one was conducted in the participant's office and one more in a mosque. Our questions sought to elicit a range of information, including the participants' background, their everyday activities, their state of health and if they receive any care, their social participation, their sense of self and identity, and their use of technology. The interviews were conducted in vernacular (informal) Arabic, despite the fact that the invitation letter, consent form and information sheet were all written in formal Arabic (also known as Modern Standard Arabic). Formal Arabic is not used as an everyday spoken language but mainly used in written documents and public speeches. Communicating in vernacular Arabic allowed our participants to answer questions and express their views and feelings more freely.

However, informal spoken Arabic can vary according to the person's tribal backgrounds and spoken dialects. Thus, we were careful to use commonly understood words when interacting with participants. At the same time, we were mindful in how we frame and ask questions, so as not to inadvertently offend the participants. For example, asking questions about the role of domestic maids in participants' homes might offend them because they might misinterpret this to allude to the fact that they are lazy. So, prior to the interview, we carefully checked the interview questions with many native speakers of different dialects and from various tribes to ensure that the questions and the language used are not only understood by the participants but also were not inappropriate.

At the same time, we were aware of a number of factors that may impact face-to-face communications. Firstly, conducting interviews with non-familial female participants is a challenge. Religious practices and cultural expectations heavily guide the norms around social and day-to-day interactions. Non-familial cross-gender communication, is considered culturally inappropriate and thus male-to-female conversations are often mediated through a chaperon who is an immediate male relative [11]. Consequently, participants may behave differently or offer answers that are not necessarily of their own volition [7]. Secondly, Hawamdeh and Raigangar [21] note the 'common distinction' between the public and private self to Middle Eastern people. They found that participants, regardless of their gender, might respond to interview questions according to what is "socially-desirable" rather than their actual beliefs. This

means that it can difficult to ascertain if participants are really telling you the truth. Furthermore, investigating the daily experiences of older people includes understanding their domestic spaces and their interaction with others such as live-in 'foreign' maids. Accessing such information in some cases can be considered by participants as an invasion of their privacy. As we will discuss next, we decided to use probes to help elicit and capture the particularities of people's contexts while mitigating some of these challenges. To an extent, the probe data were also used to provide some triangulation to the interview data.

Probes

Just like Graham, et al. [20], we used probes as a form of capturing device to generate accounts that represent participants' lives and to bring invisible items, such as actions and emotions, forward. Mattelmäki [27] defined probes as *'a collection of assignments through which or inspired by which the users can record their experiences as well as express their thoughts and idea'*. Probes allow a desirable minimal external influence on participants' action compared to different research methods [18, 20]. We chose probes to supplement our interviews because we are aware of the potential cultural sensitivities and challenges surrounding the use of interviews. While probes have been previously used to elicit older people's views and perception (e.g. [17, 38]), we have not found any reports of its deployment in Saudi Arabia.

Our probe pack consisted of a diary, a map, and a set of postcards (see Figure 1). We have designed the probes so that participants have a number of tasks to complete over the span of seven days. The diary contains "how to use" instructions on the front cover and the contact details of the researcher at the back cover. At the beginning of each diary entry, participants were provided with a printed 'mood scale'. Participants were instructed to first rate their mood before completing the diary entry. If they wished, they could also provide further details about how they were feeling. Each entry is also preceded by printed instructions of 'tell us about your day'. Participants were told that they

Figure 1. The probe pack including the diary, a few examples of postcards and a folded map.

could report their activities in any way they felt comfortable. Besides writing, they could also draw, record messages on their phones, or even create photo collages.

Postcards contained printed instructions for participants to complete different tasks for seven days. They included activities whereby participants had to take photos, for example, a place where they spend much of their time and something they value the most; use stickers to map places of interests, such as places that they like, avoid and socialise, as well as drawing their family tree and naming any technologies they have used during the day. Being culturally aware of Saudi people's heightened concerns about the sanctity of privacy, especially of their own homes [1], we decided not to include a disposable camera in the probe pack. This is because participants may feel that they have limited control over what they capture or inadvertently capture since they cannot review, edit or delete the content. For example, it may not be appropriate to share photographs of adult females who are not fully or partially covered. Furthermore, the use of disposable cameras meant that the researcher (instead of the participant) would have possession of the photos. As an alternative, we asked them to take photos using their own phones, sharing what they deem to be appropriate.

Besides the diary, postcards and maps, we also encouraged participants to share their daily activities with us through various online social media apps using their smartphones. We know from local experience that many older people use smartphones. In particular, many have adopted social media apps such as WhatsApp, Twitter, Facebook and Snapchat because they often record voice messages and share photos and videos with friends and loved ones. These are amongst the most popular apps in Saudi. We have included the researcher's WhatsApp number in all printed materials. Participants were told that if they wish, they could take photos and record audio/videos to share with us. The use of these chat apps allows participants flexibility in self-reporting and have full control over the content they share.

Finally, the design of probes was based on our understanding of the local culture and contexts. The design of the probes was simple, attractive and consistent. The instructions were written in simple formal Arabic in a right-to-left format. We used various icons in the cover page of the diary as triggers to the different activities participants can talk about, such as going to the mosque, eating habits as well as physical activities. We also included icons that represented people such as family, friends and others to capture social interactions. We ensured that chosen icons are not revealing in any way and do not show the female body. Overall, we were mindful of our participants when designing the probes. The choice of words, the type and number of tasks, the freedom to choose alternative forms to complete these activities, etc. were explicitly designed to ensure that participants were accorded respect and a sense of authority as much as possible.

REFLECTIONS ABOUT THE FIELDWORK
In this section, we reflect and discuss the complexities of conducting fieldwork in Saudi Arabia. This includes reflections about the recruitment and interview processes, participants' use of probes and how they used social media to document and share their daily activities.

Recruitment
The use of snowballing sampling method was generally effective. Being recommended conferred us, the researchers, a degree of trust to potential participants. This method provided access to a number of participants. However, as we explain next, this recruitment method was not always smooth sailing.

Referrals of potential participants
We found out that a number of potential participants only agreed to participate in the research as a favor to the person who vouched for us. However, when we turned up to their homes, we found that these potential participants did not really know what the research was about even though they had been given the invitation and associated documents about the research from the referrer. As a result, we had to spend time introducing and explaining the nature of the research and its merits, hoping that they would want to actually participate in our research. In fact, one potential participant dropped out after this initial meeting.

While referrals were useful in helping us gain participants, referrers are not always mindful of the fact that the referred person may not meet the research selection criteria. In one instance, we were referred to a person who did not fully meet the selection criteria. However, we did not turn the person down. This is because, in Saudi culture, turning the person down will be seen as a sign of great disrespect to both to the referrer and the referred person. On this occasion, we proceeded with the interview this particular person and gave him the probe pack we brought along. However we did not include the data collected.

This importance of this reciprocity between the referrer and referred was highlighted by P03 who insisted many times over the course of the research that we tell his referrer that he is participating in our research.

Mediators for participation: Chaperons/Kin
Given that we refrained from direct communications with potential female participants, we had to explain the aims and processes of the research to appropriate chaperons/kin prior to the start of the research. However, at the first meeting with the female participants, we realised that although they were happy to participate, most female participants only had vague ideas about the research. Again, we had to spend time introducing and explaining the research and its merits, and answering their questions. In many cases, a number of female participants felt overwhelmed and complained about the amount information that was presented. Perhaps, future researchers may consider spending more time with the chaperons/kin, ensuring that these 'mediators' understand the research so

that they can pass on the relevant information to potential female participants. In addition, handouts containing summaries of the research could be prepared to be passed on to the potential female participants.

Interviews

When conducting interviews in our participants' homes, we also found unexpected complexities and unforeseen challenges.

Conducting interviews in busy domestic spaces

While we interviewed one participant at their office and another in a mosque where he works as a prayer caller *'Moazen'*, most of our interviews were conducted in our participants' homes. This is because we wanted to develop richer understandings of their domestic settings and home life. Our experiences of interviewing in Saudi homes differed from the interviews we are familiar with in the West because Saudi homes are often very busy and filled with many family members, often present at the same time.

Traditionally, older Saudis live with their family, which often includes children and grandchildren and other extended family member (as well as foreign maids). Most of our participants preferred interviews to take place during late afternoons, in the evenings, or weekends because they are often busy during the day. However, we discovered that this was also a busy family time, with children and many members of the extended family present. Saudis also often receive visitors over weekends. As a result, our interviews often took place in noisy settings with constant interruptions by various family members or carers. For example, our initial interview with P01 was conducted in three different guest rooms in an effort to find a quiet spot. As such, our interviews were often interrupted by various people. While this might be disconcerting and sometimes frustrating, we also found the situation to offer great insights into various social interactions and domestic activities in a Saudi home.

We found that chaperons or kin were often present, seated with the participants during the interview. Culturally, these chaperons/kin saw their role not only as to 'protect' female elders but also to help both male and female elders, such as by helping to serve the 'the researcher' (the guest) coffee and dates or offering to move a table closer to the researcher etc. The elderly has an authoritative role in the household and frequently exercises that role in the presence of guests. This authoritative role is conferred through age differences. Following the teachings of Islam, Saudis strongly encourage the younger to respect the elders, by attending to their needs and speaking to them politely.

We realised, after the initial interview, that this first contact is also as much as an occasion to build trust with the participants, as it is to gather research information.

Initial interview as an occasion to build trust

Day One of the research turned out to be longer than we expected. This is because the researcher was considered a guest and hence, provided hospitality. For example we were served coffee/tea, sweets and on one occasion even dined in with the participant and their family. This first meeting is also, as [21] noted, a part of developing a participant-researcher relationship, where participants asked about the researchers' origin, studies, work and other personal matters. The researcher did his best to answer the questions freely and openly in order to develop trust and rapport.

Privacy and asking questions

Chaperons, mainly kin, were always present in the interviews we conducted regardless of the participants' gender. As such, our interviews in Saudi homes were hardly ever conducted in private with the participants alone. Conducting interviews in busy Saudi homes meant that besides the presence of chaperons, anyone else could sit and listen to the unfolding interview. In many cases, more than two chaperons were present during the interview.

Al-Shahri [7] reported that chaperons can affect participants' responses during interviews. However, in many of our interviews, the chaperons were relatively younger than the participants. Given that older people in Saudi have more authority over those who are younger, we believe that external influences to these participants were minimal. In fact, one participant (P14) when delivering her answer to an interview question, actually turned and looked directly at her younger chaperon, hinting that *'this is what I do and this is how you should do it'*.

As stated earlier, our questions were checked prior to the interview to ensure that they were appropriate. This is because Saudis in general have a heightened sense of privacy. However, we were still very careful during interviews to test the waters as to what might be considered appropriate during each interview. For example, we did not know if asking participants about their informal carers might be problematic as this might be perceived as a private domestic matter or may lead to misunderstanding as noted earlier. However, in all interviews, participants felt at ease answering questions regarding their maids and offered information as to how they interacted with their maids and negotiated the day-to-day care duties with them.

When conducting research in the Middle East, Hawamdeh and Raigangar [21] noted that their respondents had more difficulties articulating and talking more about their feelings during interview. They attributed this to the more conservative aspect of Arab culture. During our interviews, we also encountered this with two participants (P01, P11) who were both female participants. For them, direct questions that inquired into their daily activities or hobbies, for example, were answered easily, but questions like *"What would consider most important to you as you grow older?"* or *"How do you feel about …..?"* were found to be more difficult. For P11, this may be due to the fact that her husband (P10) was present, and thus, she was more hesitant in being more forthcoming. Another reason may be due to the fact that the interviewer is a male. Finally, it may be due

to the fact that the interview is the first time she met the researcher and she has yet to forge trust with the researcher.

Probes

Our use of probes has led us to explore alternative and maybe more productive means of data collection. We also found that the use of probes allowed us to mitigate some of the challenges we encountered when conducting interviews.

Diaries

At the beginning of each diary entry, we printed a 'mood scale' that allowed participants to first rate their mood before completing the diary entry. We found that this mood scale and icons were useful for some of the participants who had difficulties in expressing their feelings during the interview (such as P01 and P11 whom we discussed earlier). In the diary activity, both P01 and P11 were able to use this 'mood scale' to rate, write, and express how they feel quite freely and easily.

Half of the participants only completed the first few diary entries. When we asked them about why they did not complete the other diary entries during the final interview, they told us that the first few entries pretty much summed up the rest of their week. They said that they felt like they were simply repeating themselves by writing further entries. For example, P02 wrote about his activities and social interactions in the first diary entry (as shown in figure 2) and told us that there was nothing much different, save a few minor variations, for the rest of that week. When we examined diary entries of those who completed all seven entries, we found that they similarly echo the ordinariness and routine nature of these older peoples' busy everyday lives.

The use of social media

We encouraged participants to share aspects of their everyday lives with us using social media technologies such as WhatsApp. It turned out that participants were very active in sharing their lives with us through this platform, revealing the potentials for using social media technologies when conducting fieldwork in Saudi.
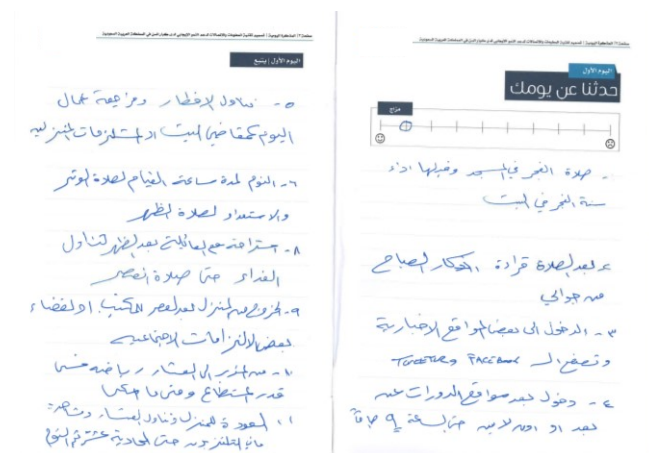
As noted earlier, the researcher initiated a WhatsApp conversation with each participant on day two. While participants were informed of the flexibility of self-reporting including, taking photos and recording audio/videos, we found that our participants were more active in reporting daily experiences through using WhatsApp than the diaries given to them. When we asked participants, they told us that writing on the diary was difficult at times because they have to dedicate time to the activity. However, they could easily use WhatsApp on-the-go, snapping and texting, recording and reporting their daily lives. Although fragmented, the shared data we received via WhatsApp did offer rich glimpses into people's everyday activities and their changing contexts and environments.

The use of social media in this fieldwork allowed us greater access to domestic spaces beyond the guest room, where interviews were often conducted. This technology offer almost 'live' insights into participants' lives because messages or media are created and captured just before they are sent. The use of WhatsApp, in our research gave us a kind of vicarious snapshots into participants' daily lives as it unfolded often close to real time. WhatsApp also allowed us to engage the participants in bursts of ongoing conversations, giving us opportunities inquire further about their current contexts and particular situations.

Introducing flexibility of reporting, including drawing and use of social media, have given us deep insights into our participants' lives. For example, we learned more about P01's hobbies and her passion to gift handcrafted items to family friends. We discovered that P01 spends her free non-social time, crafting pretty door handles among other things. P01's WhatsApp posts as shown in figure 3, led us to seek out further clarifications about her hobbies and what they meant to her during the final interview.

The ability to use emoticons afforded certain participants the ability to express emotion. As seen in figure 4-left, P01 was sad because her son is travelling overseas to pursue further studies. She shared a photo of her son's luggage and wrote about her son's departure with a 'crying face'

Figure 2. An example of a diary entry by P02

Figure 3. P01's crafted family tree (left) and door handle.

Figure 4. Left–P01 expressing sadness for her son's departure, Right–P01 saying how overwhelming housework is.

emoticon. She also shared a picture of the laundry (right) and annotated how overwhelmed she was with the housework. Just like the use of the mood scale, social media afforded some of our participants opportunities to express emotions and feeling that might have been difficult to surface during interviews.

With our participants, we found that once trust has been established, cross-gender communication and privacy concerns did not become a problem during online conversations. This contrasts strongly with physical face-to-face interviews where there is still a strong barrier during cross-gender communications. The male researcher could contact the female participants directly using WhatsApp without the need for a chaperon to mediate the conversation. In our research, the use of social media was also useful in fostering the ongoing development of researcher-participant rapport.

In our research, we noticed that our male and female participants used WhatsApp differently. For example, male participants preferred making and sending audio recordings, while females preferred taking photos and 'adjusting' the photos before sending them to us. For example, female participants add texts, apply filters and even add emoticons as show in figure 5. While we did not explore the reasons behind the differences in the ways they share media type, this difference may be related to religious debates around the sanctity of the female voice. However, this might be just a pattern we see with our participants. It certainly points to potential future research to better understand how Saudis use social media technologies to share media with others. Such understandings can inform how researchers can harness these technologies productively when conducting fieldwork in Saudi.

Chaperon/Kin as 'co-researcher'
The presence of a chaperon/kin does not necessarily have a negative impact upon our research. During interviews, chaperons were listening to our conversations and

sometimes helped us by reminding participants of stories or things that they might have forgotten to mention. On other occasions, chaperons helped participants with completing their probe activities. For example, P05's kin recorded an audio interview with the participant to document their daily activities and shared it with us, while P01 shared her mapping activities with her daughter who helped her label the map according to her answers.

Completing probe activities
In one instance, however, a participant gave the entire probe pack to his kin to complete on his behalf. The authoritative role of older people meant that their wishes must be met without the need to provide reasons. We were not able clarify with this participant because we only found this out indirectly through his kin. Nonetheless, the participant's kin, to the best of knowledge, completed the probes according to his knowledge of the participant's usual activities. This reminds researcher who are working in Saudi, and especially when working with older people, to be mindful not to rely on probes as their sole or main source of data. Instead, they should always use different tools to negotiate various ways to acquire data, and from our experience, include the use of social media.

In one instance, our deployment of probes did lead to unexpected confusion.

The expectation of gifts
Following the initial interviews, we introduced the probe pack, housed inside a box to participants. The boxes were made of cardboard that obscured the contents completely from view. We were hoping to see the transition in emotions that Gaver, et al. [17] noted, from worry to excitement, as we explained how the probes work. Instead, we realized that this particular participant – P02 was slightly disappointed. He actually thought the box was a present for him. When we brought out the probe pack, P02 jumped the gun and started thanking us for a few minutes while we were trying, embarrassingly, to tell him that the box is actually a part of the research. We realized immediately that we had forgotten the norm of social courtesy in Saudi, which is to bring gifts when visiting

Figure 5. Participant's use of emoticons, texts and filters

others, for example, a box of dates or sweets. Of course, although such courtesies are always appreciated, they are not expected, particularly when guests visit homes for the first time. In light of this incident, we ensured that we brought participants chocolates in our final follow-up interviews. This reminds future researchers to consider bringing a small present (often edible) to interviews for participants, especially if this is conducted in their homes. This act may also help with the trust building aspect of the initial meeting.

CONSIDERATIONS FOR FUTURE RESEARCH IN SAUDI

Traversing boundaries through Social Media

The capacity to collect regular data through using social media in our research have yielded surprising benefits. This platform allowed us direct access to communicate with participants, without the presence of chaperons/kin. Using social media allowed us to have ongoing conversations, which provided opportunities to follow up with questions, receive visual/audio media, clarify media that were shared with us, and so on. Once trust has been established, participants, especially females, were able to use social media to communicate directly with us without having to use the chaperon/kin to mediate conversations and to pass on information. Based on our research, we see great possibilities to explore how social media can be used more productively when conducting fieldwork in general in Saudi. We also see the potential in exploring social media's potentials for conducting fieldwork in the Middle East region.

Most importantly, we found that social media was able to traverse strong boundaries that are particular to cross-gender communications. Through the use of social media, female participants in our research were certainly more forthcoming in sharing their thoughts, emotions and experiences with the male researcher.

It is, however, important to note that the opportunities afforded by such technologies for research is likely to be dependent on the initial meeting and interviews. Initiating trust through face-to-face communication, whereby participants get to know more about the research, and the researcher, and vice-versa is crucial to establishing more direct communication with female participants through social media. The task of conducting interviews could be lengthy and filled with interruptions. Furthermore, the task of building trust when researching in Saudi often requires the researcher to be willing to discuss his/her life with participants.

The researcher's gender and conducting fieldwork in Saudi

Being a male researcher in Saudi can present particular challenges, when conducting fieldwork that involves face-to-face interactions. This is particularly the case in cross-gender communications where there is a need for a chaperon/guardian to mediate negotiations with potential participants and to be present during face-to-face cross-

gender communications. As male researchers, we delayed direct communications with potential female participants until we have developed a degree of mutual-trust with them, which began through the first meeting.

However, face-to-face cross-gender communications may be even more problematic for female researchers. Female researchers themselves are expected to be accompanied by chaperons when conducting interviews with males. For us, we will consider recruiting a female co-researcher in our future research in Saudi when it is appropriate. However, communications and social interactions between the two researchers who are not related to each other and are of the opposite gender will also be problematic. This is because segregation laws prohibit non-familial cross-gender social interactions, especially in public spaces. This will mean that the researchers will have to meet and work only in private spaces.

Limitations and further cultural considerations

This study is limited in its scope in terms of the range of ageing people we recruited in our research. For example, all our participants are literate and are from the middle-class. Furthermore, this study was conducted mostly in the western region of Saudi Arabia where segregation laws are slightly more relaxed. We can imagine that conducting fieldwork beyond this region, where cultural norms and social practices are more strictly observed will pose greater challenges in all aspect of the research, including the recruitment of potential participants, particularly females; types of topics and questions that could be asked, and cross-gender communications. However, this does also depend on the type of research being conducted and the tools that are used.

On the other hand, if the researcher is a male member of a local tribe within this region, he may have less difficulties in gaining access and in building trust with the participants. Face-to-face cross-gender communications in some of these regions can be very strict. For example, female respondents may be required to not only be fully covered but be hidden from the view of the male researchers, such as behind a wall. Given that we found our female participants had the freedom use social media to communicate and share with the researcher, it would be very interesting to see if this technology can also help mitigate or even traverse some of the cultural boundaries encountered in these more conservative regions.

CHECKLIST FOR FUTURE RESEACHERS

While we have written a great deal about the complexities of conducting fieldwork in Saudi and have offered advice for future researchers, we provide a summary 'checklist' that may be useful to future researchers considering conducting fieldwork in Saudi Arabia.

Recruitment

Researchers should use snowballing sampling methods as this helps to establish trust and allow researchers to gain

access to potential participants. Researchers should be aware that referred participants may not be aware of the actual research and be prepared to spend time explaining the research and their participation. Researchers should be careful not turn any referred participants away even though they might not meet the research selection criteria as this may offend the referred as well as the referrer. Finally, researchers are encouraged to rely on chaperons to mediate communication with female participants prior to the initial interview.

Interviews

Researchers should be aware of when to use formal and informal Arabic when conducting fieldwork in Saudi Arabia. They are encouraged to use commonly understood used words and be aware of other variations in meaning due to variations in people's dialect and the tribe the hail from. While privacy is perhaps the most important factor to be mindful of when working in Saudi, there are some variations in the extent of what is considered appropriate from one household to another. Here, researcher should gently test the waters during the initial meeting, to determine the extent of what is appropriate and acceptable by the individual participant.

Interviews are not only used as a method to gather information but also as an occasion to establish trust and rapport with participants. This is a bi-directional process which means that the researcher should be willing to answer personal questions in order to support trust building with participants. Finally, when conducting interviews in domestic settings, researchers should be aware of the potential challenges associated with interruptions, noise and the lack of privacy. On the other hand, researchers can use this as an opportunity to observe and capture various social interactions and domestic activities in a Saudi home.

Probes

When designing probe packs, researchers should always consider the participants and their local contexts. We encourage researchers to use mediums that give participants control of the context whereby data are being captured and shared. Thus, when designing probe packs to be used in Saudi, we highly discourage the use of disposable cameras. Our fieldwork shows the opportunities afforded by smartphones and social media. Online chat apps are useful mediums for researchers to initiate ongoing participants-researcher communications during the research period. This can also provide 'live' insights into participants' lives. Finally, researchers are should always consider bringing a small present (often edible) for the participants when meeting them for the first time.

CONCLUSION

This paper presents one of the first reports and discussions of the experiences of conducting qualitative HCI research in Saudi Arabia. In doing so, it contributes to efforts that describe, discuss and reflect upon how we might adopt, tune and even develop new methods or tools when conducting fieldwork in different cultural contexts. More importantly, it presents guidance such as, research preparations, logistical matters, participant recruitment and a number of considerations of what to expect when conducting fieldwork in Saudi households. This paper also highlights the various challenges that researchers may expect to face when conducting interviews in Saudi, exacerbated particularly by people's heightened sense of privacy as well as the complexity of negotiating cross-gender communications.

To the best of our knowledge, this paper also presents the first report, discussion and reflections of the use of probes when conducting qualitative research in Saudi. In doing so, it contributes to and greatly extends how HCI researchers have thought about and used probes in their research. It reveals how researchers might be able to design probe packs (the choice materials, language and content) as well as activities that are appropriate to the particular socio-cultural and religious practices in Saudi. Our experiences with probes is very different from the conception, design and utility of the original cultural probes by Gaver, et al. [17]. It also differs from others who have used probes as a data collection method (e.g. [20]). While cultural probes have been enthusiastically adopted, adapted and through this, evolved greatly in terms of its design, utility, and remit over the years in innumerable HCI research, none has discussed how probes can be tailored specifically to suit and meet the local socio-cultural and religious contexts of Saudi Arabia.

Most interestingly, none of the reports of probe use in research has highlighted its potential to traverse the strong barriers of cross-gender communications when conducting qualitative research in an Islamic country such as Saudi. Our participants' use of their smartphone's camera and instant messaging apps (e.g. WhatsApp) as part of a probe activity surprised us because these technologies afforded opportunities for the male researcher and female participants to chat relatively freely, often in real time and without the presence (and potential influences) of a chaperon or guardian. Such interactions were shown to provide valuable and complementary data that enriches what our interview data. At the same time, this fieldwork reveals the potentials of other digital technologies such social media to provide similarly effective and productive means to capture aspects of the everyday experiences of Saudis and perhaps for those in neighbouring countries.

As HCI broadens its interests and efforts beyond its traditional focus in Western countries and Western contexts, HCI researchers need understandings of how they might be able to work more effectively, productively and respectfully in non-Western countries. We hope that this report of our fieldwork in Saudi Arabia can provide an initial foundation to HCI researchers wishing to conduct fieldwork in Saudi and even to neighbouring countries that share similar cultural and religious values.

REFERENCES

1. Norah Abokhodair and Sarah Vieweg. 2016. Privacy & Social Media in the Context of the Arab Gulf *Proceedings of the 2016 ACM Conference on Designing Interactive Systems*, ACM, Brisbane, QLD, Australia, 672-683.

2. Auhood Al-Faries, Hend S. Al-Khalifa, Muna S. Al-Razgan and Mashael Al-Duwais. 2013. Evaluating the accessibility and usability of top Saudi e-government services *Proceedings of the 7th International Conference on Theory and Practice of Electronic Governance*, ACM, Seoul, Republic of Korea, 60-63.

3. Hend S. Al-Khalifa. 2010. Exploring the accessibility of Saudi Arabia e-government websites: a preliminary results *Proceedings of the 4th International Conference on Theory and Practice of Electronic Governance*, ACM, Beijing, China, 274-278.

4. Hend S. Al-Khalifa and Regina A. Garcia. 2014. Website Design Based on Cultures: An Investigation of Saudis, Filipinos, and Indians Government Websites' Attributes. in Marcus, A. ed. *Design, User Experience, and Usability. User Experience Design for Diverse Interaction Platforms and Environments: Third International Conference, DUXU 2014, Held as Part of HCI International 2014, Heraklion, Crete, Greece, June 22-27, 2014, Proceedings, Part II*, Springer International Publishing, Cham, 15-27.

5. Yeslam Al-Saggaf. 2011. Saudi Females on Facebook: An Ethnographic Study. *International Journal of Emerging Technologies & Society*, 9 (1). 1-19.

6. Yeslam Al-Saggaf and Kirsty Williamson. 2004. Online Communities in Saudi Arabia: Evaluating the Impact on Culture Through Online Semi-Structured Interviews. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research; Vol 5, No 3 (2004): Special Issue: FQS Interviews I*.

7. Mohammad Zafir Al-Shahri. 2002. Culturally Sensitive Caring for Saudi Patients. *Journal of Transcultural Nursing*, 13 (2). 133-138. http://dx.doi.org/10.1177/104365960201300206

8. Sulaiman Al-Shammari, Jamal S. Jarallah and Ferial Felimban. 1997. Long-term care experience in Saudi Arabia. *Social Science & Medicine*, 44 (5). 693-697. http://dx.doi.org/10.1016/S0277-9536(96)00196-7

9. Asmaa Alayed, Mike Wald and E. A. Draffan. 2016. Developing a Framework for Localised Web Accessibility Guidelines for University Websites in Saudi Arabia. in Miesenberger, K., Bühler, C. and Penaz, P. eds. *Computers Helping People with Special Needs: 15th International Conference, ICCHP 2016, Linz, Austria, July 13-15, 2016, Proceedings, Part I*, Springer International Publishing, Cham, 243-250.

10. Sarah Alhumoud, Lamia Alabdulkarim, Nouf Almobarak and Areej Al-Wabil. 2015. Socio-Cultural Aspects in the Design of Multilingual Banking Interfaces in the Arab Region. in Kurosu, M. ed. *Human-Computer Interaction: Users and Contexts: 17th International Conference, HCI International 2015, Los Angeles, CA, USA, August 2-7, 2015, Proceedings, Part III*, Springer International Publishing, Cham, 269-280.

11. Tamara Alsheikh, Jennifer A. Rode, Si, #226 and n E. Lindley. 2011. (Whose) value-sensitive design: a study of long- distance relationships in an Arabic cultural context *Proceedings of the ACM 2011 conference on Computer supported cooperative work*, ACM, Hangzhou, China, 75-84.

12. Majid H. Alsulami and Anthony S. Atkins. 2016. Factors Influencing Ageing Population for Adopting Ambient Assisted Living Technologies in the Kingdom of Saudi Arabia. *Ageing International*, 41 (3). 227-239. http://dx.doi.org/10.1007/s12126-016-9246-6

13. R Atkinson and J Flint. 2001. Accessing Hidden and Hard-to-reach Populations: Snowball Research Strategies. *Social Research Update*, 33.

14. H. Russell Bernard. 2011. *Research Methods in Anthropology (5th Edition)*. AltaMira, Blue Ridge Summit, PA, USA.

15. Eva Brandt, Thomas Binder, Lone Malmborg and Tomas Sokoler. 2010. Communities of everyday practice and situated elderliness as an approach to co-design for senior interaction *Proceedings of the 22nd Conference of the Computer-Human Interaction Special Interest Group of Australia on Computer-Human Interaction*, ACM, Brisbane, Australia, 400-403.

16. Margot Brereton, Paul Roe, Thomas Amagula, Serena Bara, Judy Lalara and Anita Lee Hong. 2013. Growing Existing Aboriginal Designs to Guide a Cross-Cultural Design Project. in Kotzé, P., Marsden, G., Lindgaard, G., Wesson, J. and Winckler, M. eds. *Human-Computer Interaction – INTERACT 2013: 14th IFIP TC 13 International Conference, Cape Town, South Africa, September 2-6, 2013, Proceedings, Part I*, Springer Berlin Heidelberg, Berlin, Heidelberg, 323-330.

17. Bill Gaver, Tony Dunne and Elena Pacenti. 1999. Design: Cultural probes. *interactions*, 6 (1). 21-29. http://dx.doi.org/10.1145/291224.291235

18. William W. Gaver, Andrew Boucher, Sarah Pennington and Brendan Walker. 2004. Cultural probes and the value of uncertainty. *interactions*, 11 (5). 53-56. http://dx.doi.org/10.1145/1015530.1015555

19. GoSI. 2015. General Organisation for Social Insurance.

20. Connor Graham, Mark Rouncefield, Martin Gibbs, Frank Vetere and Keith Cheverst. 2007. How probes work *Proceedings of the 19th Australasian conference on Computer-Human Interaction: Entertaining User Interfaces*, ACM, Adelaide, Australia, 29-37.

21. Sana Hawamdeh and Veena Raigangar. 2014. Qualitative interviewing: methodological challenges in Arab settings. *Nurse Researcher*, 21 (3). 27-31. http://dx.doi.org/10.7748/nr2014.01.21.3.27.e357

22. Lilly Irani. 2010. HCI on the move: methods, culture, values *CHI '10 Extended Abstracts on Human Factors in Computing Systems*, ACM, Atlanta, Georgia, USA, 2939-2942.

23. Nancy J. Karlin, Joyce Weil and Wejdan Felmban. 2016. Aging in Saudi Arabia: An Exploratory Study of Contemporary Older Persons' Views About Daily Life, Health, and the Experience of Aging. *Gerontology and Geriatric Medicine*, 2. http://dx.doi.org/10.1177/2333721415623911

24. Neha Kumar, Susan Dray, Andy Dearden, Nicola Dell, Melissa Densmore, Rebecca E. Grinter, Zhengjie Liu, Mario A. Moreno Rocha, Anicia Peters, Eunice Sari, William Thies, Indrani Medhi-Thies, William D. Tucker, Elba Valderrama Bahamondez and Susan Wyche. 2016. Development Consortium: HCI Across Borders *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems*, ACM, Santa Clara, California, USA, 3620-3627.

25. David E. Long. 2005. *Culture and Customs of Saudi Arabia*. Greenwood Press, Westport, Connecticut - London.

26. Aaron Marcus, Emilie Gould and Laurie Wigham. 2011. Culture-Centered Design: Culture Audit of Screen Designs for Educational Software in Saudi Arabia. in Rau, P.L.P. ed. *Internationalization, Design and Global Development: 4th International Conference, IDGD 2011, Held as part of HCI International 2011, Orlando, FL, USA, July 9-14, 2011. Proceedings*, Springer Berlin Heidelberg, Berlin, Heidelberg, 85-93.

27. Tuuli Mattelmäki. 2006. *Design Probes*. University of Art and Design Helsinki, Vaajakoski, Finland.

28. Patricia McCann Mortimer, Lynn Ward and Helen Winefield. 2008. Successful ageing by whose definition? Views of older, spiritually affiliated women. *Australasian Journal On Ageing*, 27 (4). 200-204. http://dx.doi.org/10.1111/j.1741-6612.2008.00305.x

29. M. H. Mufti. 2002. A case for community and hospital-based long-term care facilities in Saudi Arabia. *Annals of Saudi Medicine*, 22 (5-6). 336-338.

30. Graham Mytton, Peter Diem and Piet Hein van Dam. 2016. *Media Audience Research: A Guide to Professionals*. Sage Publishing.

31. Cecilia Oyugi, José Abdelnour-Nocera and Torkil Clemmensen. 2014. Harambee: a novel usability evaluation method for low-end users in Kenya *Proceedings of the 8th Nordic Conference on Human-Computer Interaction: Fun, Fast, Foundational*, ACM, Helsinki, Finland, 179-188.

32. K. Rambo, K. Liu and K. Nakata. 2009. The Socio-cultural Factors Influencing Online Female Consumers in Saudi Arabia. in *Computational Science and Engineering, 2009. CSE '09. International Conference on*, 633-638. http://dx.doi.org/10.1109/CSE.2009.443

33. Toni Robertson, Jeannette Durick, Margot Brereton, Frank Vetere, Steve Howard and Bjorn Nansen. 2012. Knowing our users: scoping interviews in design research with ageing participants. in *OzCHI 2012*, Melbourne, Australia, ACM, 517-520. http://dx.doi.org/10.1145/2414536.2414616

34. Abbas Saleh Al Mutair, Virginia Plummer, Anthony Paul O'Brien and Rosemary Clerehan. 2014. Providing culturally congruent care for Saudi patients and their families. *Contemporary Nurse*, 46 (2). 254-258. http://dx.doi.org/10.5172/conu.2014.46.2.254

35. Merja Sallinen, Outi Hentonen and Anne Kärki. 2015. Technology and active agency of older adults living in service house environment. *Disability And Rehabilitation. Assistive Technology*, 10 (1). 27-31. http://dx.doi.org/10.3109/17483107.2013.836685

36. Helma van Rijn, Yoonnyong Bahk, Pieter Jan Stappers and Kun-Pyo Lee. 2006. Three factors for contextmapping in East Asia: Trust, control and nunchi. *CoDesign*, 2 (3). 157-177. http://dx.doi.org/10.1080/15710880600900561

37. Bronislaw J. Verhage, Ugur Yavas and Robert T. Green. 1990. Perceived risk: A cross-cultural phenomenon? *International Journal of Research in Marketing*, 7 (4). 297-303. http://dx.doi.org/10.1016/0167-8116(90)90007-A

38. Joseph Wherton, Paul Sugarhood, Rob Procter, Mark Rouncefield, Guy Dewsbury, Sue Hinder and Trisha Greenhalgh. 2012. Designing assisted living technologies 'in the wild': preliminary experiences with cultural probe methodology. *BMC Medical Research Methodology*, 12. 188-188. http://dx.doi.org/10.1186/1471-2288-12-188

39. Susan P. Wyche. 2011. Designing for everyday interactions in HCI4D. *interactions*, 18 (2). 52-56. http://dx.doi.org/10.1145/1925820.1925832