Technology-Mediated Parent-Child Intimacy: Designing for Ecuadorian Families Separated by Migration

Marisol Wong-Villacres

Indiana University

School of Informatics

901 E. 10th Street

Bloomington, IN 47408, USA

lvillacr@indiana.edu

Shaowen Bardzell

Indiana University

School of Informatics

901 E. 10th Street

Bloomington, IN 47408, USA

selu@indiana.edu

Abstract

This study explores the role technology plays in supporting long-distance relationships of migrant parents and left-behind children in developing countries such as Ecuador, in order to inform the design of technology that better suits their affective needs and their context's constraints. We derived three design principles based on our fieldwork in Ecuador: shared experience, the empowerment of children to self-express and children's need to safely build a private communication channel with their parents. We report our research findings and propose a set of design concepts for future work.

Keywords

Shared experience, intimate interactions, computer mediated communication, HCI4D, migration

ACM Classification Keywords

H5.m. Information interfaces and presentation: Miscellaneous.

General Terms

Design

Introduction

Migration is a complex worldwide phenomenon that often causes parents to leave their children behind [8]. In Ecuador, economic changes in the late 1990s unleashed international migration that led 60% of Ecuadorian migrants to leave approximately 150,000 children behind [4]. Parents and children separated by distance require mediated intimacy more often than other groups. Davis et al. (2007) [3] define mediated intimacy as "the phenomenon where individuals use technologies to express, share and communicate intimate feelings". Although CMC initiatives, such as Hermes@Home [7] and the Astra Project [5], are examples of HCI interest in supporting distributed families, technology mediation of long-term long-distance parent-child intimacy still requires further exploration [1,11]. Adding to that, existing efforts to support remote parent-child communication take for granted that parents and children experience a similar cultural, social and infrastructural context [2,3,12]. They tend not to consider the context of migrant transnational families of the developing world, where the time without seeing each other can easily go over 10 years [4], and aspects such as home Internet access should not be taken for granted [9]. In this study, we use HCI user research and design approaches to explore the affective needs of Ecuadorian left-behind children of migration and their practices when trying to overcome distance. In what follows, we present our user research, summarize our findings and describe a set of design concepts to mediate intimate interactions between migrant parents and left-behind children, in the context of developing countries such as Ecuador.

User Research

In order to further scope down the problem space, we decided to focus on Ecuadorian children between 12 and 15 years. Due to migration, these children have been at least one year apart from one or both parents, and communicate at least once a month with them. We chose this group because they have developed communication practices, and their age range allows them to enjoy more freedom to explore new technologies. We also decided to focus on children with a similar socioeconomic profile to most Ecuadorian migrants': people whose household income is enough to cover their basic needs, but does not allow for them to improve their socioeconomic condition [4]. With the help of an Ecuadorian public high school we recruited 9 children and their mothers, 1 child and her father, and 2 children and their caretakers. Only 2 recruited mothers reported still being a couple with the migrant father and communicating with him on a regular basis. The 2 recruited caretakers were children's close relatives and also reported having a good relationship with the migrant parent. Although most participants live in neighborhoods lacking basic services such as a sewer system, at least half of them reported having access to technologies such as PCs, smartphones, etc. While two of them do have home Internet access, most access at cybercafés close to their homes. All reported their migrant parents having Internet access at home.

With the purpose of enabling children to interpret and explain to us their context, their affective needs, and communication practices with their parents, we adopted a set of methods and techniques based on previous works on investigating personal relationships [1, 10] and technology use in developing countries [6]. Given our need to situate ourselves better in our participants'

context, we began our research conducting one-hour semi-structured interviews with each child and his/her parent/caretaker (hereby referred to as "guardian"). The interviews allowed us to explore issues such as the children's perception on how migration changed their parent-child relationship, their communication practices, and their impression on the media they use.

The interviews revealed that most children were curious to learn how to make a more effective use of the Internet. We realized that, by providing them with context-based activities they would consider useful, we could generate discussion around their interests and expectations towards technologies they had not used before. Therefore, we decided to carry on a 22-hour Internet workshop that showed children how to use web applications to create and share images, audio and video content, which they could access at cybercafés.

We realized that to further experience our participants' lifestyle and explore their perception of it, we needed to use different approaches. Therefore, we decided to divide our participants in two groups: while we would observe one group of 6 children and their guardians, 6 other children would self-report on their everyday life without being distracted by our presence. Participants we observed walked us through their homes and answered questions about their everyday life. In order to witness their communication practices, we also asked 3 children to allow us to be present when they talked to their parents. Children who self-reported were part of a one-week photo journal activity. Each kid was given a set of questions about their lives and a disposable camera to answer the questions using pictures. The goal was to use photos as a tool for dialogue between children and us [6].

Findings

Our findings are consistent with Suarez-Orozco et al. (2002)'s findings [8] on parenting and migration: a **continual open communication** and a **good parent-guardian relationship** are extremely important factors in migrant parent-child relationships. While children who communicated once a day described their parents as part of their everyday decisions, children who communicated once a month considered them as occasional actors in their lives. On the other hand, children whose guardians and migrant parents have a friendly relationship seemed to be more comfortable communicating with their migrant parents. Also, interviews and home visits showed us that children have a strong desire to build a **private channel of communication** with their parents: when using the phone, they usually search for more private spaces; and when using the Internet, they reported being annoyed by friends' interruptions. When asked, they explained there were things they would rather only talk about with their migrant parents, such as falling in love. This level of secrecy seems to be an important characteristic for parent-child intimacy in the context of the migrant family. Nonetheless, a private communication does not ensure engaging conversations. In order to make up for the **lack of common experiences**, parents and children tend to fall into a repetitive conversation pattern: parents ask children how they are and what they have done; children reply and ask similar questions. At least 2 children reported this leading to boring conversations.

Memory and gift exchange was found to help families develop a sense of **presence awareness and shared experience**. Three participants reported using mail to exchange letters, pictures, videos, gifts and
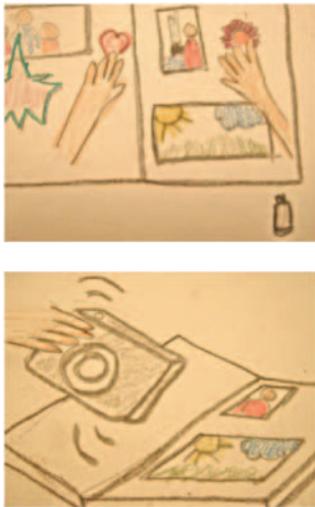
Figure 1. Uploading pictures to the *Tangible Digital Album* and **performing editing tasks on it**

clothes with their migrant parents. Home visits and photo journals showed us that the migrant parent-guardian relationship does not affect the kids' desire to treasure what their migrant parents send them: Participant 6, whose parents are divorced, keeps a picture of his dad in her favorite drawer and does not let anybody take it, and Participant 5, whose guardian is her grandmother, loves to wear a soccer team t-shirt his mom gave him. Children's guardians also reported on migrant parents feeling closer to their children when receiving gifts. For example, Participant 2's mom reported her husband always commenting: "It is really nice to receive news about my kids' achievements".

In terms of the children's level of access to technology, their parents' remittances allowed at least half of them to **more easily acquire devices such as PCs, laptops, smartphones, IPods, etc.** Nonetheless, our home visits and interviews showed us that these artifacts **are almost always out of the children's infrastructural and public safety context.** They reported on not being able to take full advantage of a laptop without Internet access, and being afraid of taking an expensive mobile device out due to the risk of being robbed.

On the other hand, online communication is still a rare activity and it is mostly achieved through the help of cybercafés. Therefore, most participants reported using only the phone to communicate with their parents. Nonetheless, interviews showed us that the use of the phone often allows for **guardians** with a good relationship with the migrant parent **to adopt the role of mediators,** using part of the communication time to report to the migrant parents about the children. Another problem is that, since it is economically more

convenient for migrant parents than for children to pay for phone calls, this medium accommodates for **parents** to **take control over the way communication happens**: they decide when to call and how long the conversation lasts. Children and their guardians reported only phone calling the migrant parent for extremely important situations. Children using cybercafés to chat with their parents also reported having to wait for their parents to log in.

Design Implications

Although user research showed that regular and private opportunities to communicate could significantly improve long-distance parent-child relationships, the nature of their interaction is also important. Children treasure memories of activities they did together with their parents, such as going to other children's parties, taking trips together, etc. By revealing that the lack of common experiences often drives interactions to become information-exchange oriented and shortens the possibility for intimate moments, our findings build upon other relevant research on the field [1,11]. One design goal will be to create opportunities for parents and children to plan and share experiences together.

Home visits showed us that children this age are in a constant search for privacy and self-expression. For example, Participant 3 proudly showed us her "private spot" in the room she shares with her mom and sister: a hairdresser she does not allow anyone else to come nearby. Furthermore, all children look to build a private channel of communication with their parents, independent of the parent-guardian type of relationship. The need for self-expression was also observed during the Internet workshops, where participants performed better in tasks that allowed for

Figure 2. Using *Our World* to plan a trip, and a digital travel map to reminiscence the trips done together

Figure 3. Transferring the memories collected with a cap to a memory block

creative freedom. Technology should enable children to establish a private channel of communication with their migrant parents, and to creatively express themselves.

Finally, user research also revealed that the design of new communication technologies for migrants' left-behind children living in developing countries such as Ecuador, needs to address the infrastructural and public safety issues of the context: two guardians reported neither taking their cell phones out of the house out of fear of being robbed again, nor allowing their children to go out to cybercafés by themselves. On the other hand, due to the parents' remittances, economic constraints do not seem to be the most important issue to address. For example, participants reported on being able to pay for Internet access at home, but not having it only due to their neighborhood's lack of technological infrastructure. New designs for Ecuadorian left-behind children should avoid raising public safety concerns, while also accounting for children's visits to cybercafés.

Our user research demonstrates three characteristics crucial in supporting Ecuadorian migrant parent-child intimate interactions: **shared experience**, the **empowerment of children** to self-express and children's need to **safely build a private** channel of communication with their parents. These three design principles are especially important in light of constraints of countries such as Ecuador.

Design Concepts
Our initial design concepts are grounded in the user research we conducted in Ecuador and build on existing HCI efforts to design for parent-child intimacy and shared experience [2,3,12]. Nonetheless, our concepts

emphasize using the design principles we identified to address the context of countries such as Ecuador.

Tangible Digital Album
This concept focuses on allowing parents and children to share pictures of past experiences in an intuitive and safe way. Therefore, this concept attempts to provide parents and children with a tangible device they can use at home to easily upload photos, and arrange them adding audio messages or graphic decorations (Figure 1). They could also upload the latest changes to a flash drive, take it to a cybercafé, and share it with their parents.

Our World
Motivated by the interest expressed by the children during the Internet Workshops to use Google Maps to see where they parents were, this concept is a web application that allows for parents and children to asynchronously plan and take a virtual trip together, helping each other overcome trip challenges. Children could access it using cybercafés. The concept also includes the idea of a physical map that could be updated via flash drive, where each can upload their latest achievements. The map's goal is to remind them of the places they have visited together (Figure 2).

The Memory Jar
This concept is based on the human practice of collecting, treasuring and sharing memories to tell a story. Considering the public safety issues Ecuadorian children face, this concept allows for children to collect everyday memories (images, text or audio) with low-cost accessories such as caps or earrings that would not be considered hi-tech devices for robbers to notice or be interested in. Later on, children can use these

memories to create a story they can share with their parents. Memories can then be transferred to "memory blocks" (Figure 3). By playing with the memory blocks, children can craft a biographical story, and when ready, mail it to their parents, or upload it to the Internet. They can also keep it in their own private memory jar (Figure 4). Parents could also have a memory jar they can share with their children.

Conclusions and Future Work

To further this research, we have since made headway on the Memory Jar concept. Through participatory design activities, our users responded to the Memory Jar concept the most; therefore, we have decided to move forward with this concept. We are currently conducting fieldwork to observe children's interaction with a low-fidelity prototype to iterate our design.

Throughout our research, we have explored the role technology plays in supporting the long-distance relationship of Ecuadorian migrant parents and their left-behind children. Our work contributes to research in this area by identifying three main design principles: creating shared experiences, empowering children to self-express and enabling them to safely build a private channel of communication with their parents.

Acknowledgements

Figure 4. Playing with memory blocks to build a story and keep it in the Memory Jar

References

[1] Dalsgaard et al. Mediated Intimacy in Families: Understanding the Relation between Children and Parents. In *Proc. IDC 2006*, ACM Press (2006) 145-152.

[2] Dalsgaard et al. eKiss: Sharing experiences in families through a picture blog. In *Proc. BCS-HCI '07*, British Computer Society (2007), 67-75

[3] Davis et al. Virtual Box: supporting mediated family intimacy through virtual and physical play. In *Proc. OZCHI 2007*, ACM Press (2007), 151-159

[4] Herrera et al. La migración internacional en cifras. FLACSO – UNFPA (2008)

[5] Markopoulos et al. Keeping in touch with the family: home and away with the ASTRA awareness system. In *Proc. CHI '04*, ACM Press (2004), 1351-1354.

[6] Pecknold K. Dialogue Through Design: Visual Communication Across the Cultural Divide. In *Proc. C&C'09*, ACM Press (2009), 239-244.

[7] Saslis-Lagoudakis et al. Hermes@Home: supporting awareness and intimacy between distant family members. In *Proc. OZCHI '06*, ACM Press (2006), 23-30.

[8] Suârez-Orozco et al. Making up for lost time: the experience of separation and reunification among immigrant families. *Family process 41*, 4 (2002), 625-643.

[9] Tecnologías de la Información y Comunicaciones en el Ecuador
http://www.inec.gob.ec/web/guest/tec_inf_com

[10] Vetere et al. Mediating Intimacy: Designing Technologies to Support Strong-Tie Relationships. In *Proc. CHI'05*, ACM Press (2005), 471-480.

[11] Yarosh, S. Supporting long-distance parent-child interaction in divorced families. In *Proc. CHI '08*, ACM Press (2008), 3795-3800.

[12] Yarosh et al. Developing a media space for remote synchronous parent-child interaction. In *Proc. IDC '09*, ACM Press (2009), 97-105.