Supporting Parent-Child Interaction In Divorced Families

Svetlana Yarosh
Georgia Institute of Technology
85 5th St. NW
Atlanta, GA 30332 USA
lana@cc.gatech.edu

Abstract
Divorce affects a significant number of children and parents. In this work, I discuss the challenges that these families may face and present two systems that may help address some of these challenges. Finally, I highlight the expected contributions of this work.

Keywords
Children, parents, divorce, distributed families.

ACM Classification Keywords
H5.2. User Interfaces: Prototyping

Introduction
In the US, 32% of children live apart from one of their parents because of divorce or separation [1]. Children in divorced families score significantly lower on measures of academic achievement, conduct, psychological adjustment, and self-concept than children in intact families [2]. Having both parents participate in the upbringing of the child is related to positive outcomes such as academic success and emotional adjustment [3]. However, typically, the non-residential parent’s involvement tends to be limited. Current visitation practices (i.e., short or infrequent visits supplemented by phone contact) make it difficult for the non-residential parent to contribute equally to
raising a child [4]. A variable that has not been studied is the degree to which the different communication technologies are supportive of the communication between parents and children in divorced families.

I begin with a brief discussion of the related literature. Then, I give an overview of the results of my interviews with divorced families. Grounded in these interviews, I present two potential interventions to support parent-child interaction in divorced families. The ShareTable supports the parent and child in collaborating on activities synchronously. The eMutts system supports the parent’s awareness of the child’s state and activities. For each of these interventions, I provide a brief overview of implementation, describe the work completed, and discuss future efforts. Finally, I discuss the expected results and contributions of my studies.

**Related Work**

There has been a significant amount of interest in HCI in supporting distributed families. ASTRA [5] and Hermes@Home [6] were two projects that used asynchronous messaging to support distributed interaction between family members at home and a family member who is away. While both of these focus on temporary separation, to support divorced families one would have to design technology for family members that permanently live apart. The InterLiving Project [7] explored communication between two households in a family, but was more effective for interaction between adult members. These projects confirm that technology can effectively connect two households, but make the assumption that members of both households are motivated to maintain contact, which may not be the case in divorced families.

Dalsgaard et al. [8] explored parent-child interaction through a set of interviews and cultural probes. They discovered that parents and children establish intimacy through two types of interaction: care and play. Care interaction is directional, from parent to child, and includes activities such as setting rules, providing resources for learning, and assisting with everyday tasks and activities. Play activities are equally important to parent-child intimacy and include collaborative everyday tasks, activities with shared artifacts, and physical play behaviors. Later, I show that these dynamics may be different for divorced or separated families.

Divorce has received a considerable amount of attention in psychology and sociology. Amato [2] conducted a meta-analysis of research on divorce in 1990’s to find that while divorce usually has negative consequences, these can be moderated by the distributed parent staying instrumentally involved in the child’s life. Furstenberg and Nord [9] studied patterns of parenting after separation to show that the distributed parent was likely to be involved socially in the child’s life, but rarely set rules or assisted with care activities such as helping with homework. Sviggum [10] provided a phenomenological perspective on how children perceive their parents’ divorce. She showed that children worry about losing contact with the distributed parent and view themselves as a bridge between the two sides of a divorced family. My work is informed by these studies, but distinct from them in that its explicit objective is to inform the design of technologies to support parent-child communication in divorced families.
Interviews with Families
I conducted 30-minute semi-structured interviews with 5 parents and 5 children (ages 7 – 14) from divorced families. These interviews were analyzed using a data-driven thematic approach. I found that divorced families had different dynamics from intact ones: each parent functioned autonomously with little input from the other parent; also, the distributed parent was less likely to be involved in care activities and rule setting. While away from the child, parents faced challenges in staying aware of the child’s state or activities, in seeding conversation, and in connecting without interrupting the flow of the other household. Children reported difficulties in sharing thoughts spontaneously, in managing the competition between parents over their time and affection, and in finding a private space for conversation. Both parents and children found that audio-only conversation was difficult, but were challenged by asymmetric access to infrastructure in initiating other modes of communication. Furthermore, both parents and children expressed the importance and yet difficulty of maintaining shared routines. Some dealt with this difficulty by establishing “proxies,” such as saying good night to a teddy bear or a photograph when other contact was unavailable. The telephone is still the primary technology parents and children use to communicate while they are apart, even though both expressed frustration with this medium. A few of the families used videoconferencing, but only for periods of longer separation, citing difficulties in setting it up, managing the environment in which it is used, and concerns over the child’s online security. In the next two sections, I explore two technologies that seek to address some of the challenges that the interviews uncovered.

ShareTable: Supporting Collaboration
The ShareTable provides parents and children with a natural way to communicate and collaborate on activities like homework, reading, or playing a game. In each home, the system consists of a projector, a camera, and a videoconferencing system (figure 1). The videoconferencing is used for face-to-face communication, while the camera-projector system allows both users to view items placed and manipulated on each other’s table. Since the surface of the table is dry-erasable, the parent and child can add notes and drawings with markers. I invited 7 parent-child pairs to use the ShareTable to play a board game (figure 2a), do a worksheet (figure 2b), and other activities of their own choice. This pilot evaluation suggested that the ShareTable is a compelling way for parents and children to collaborate on common activities. I am currently refining the ShareTable prototype to prepare it for a month-long deployment in the home of a divorce family. I will be tracking its use in the home through logging (who initiates contact, how long it lasts, and how much activity is there over the table surface) and a diary study (what kind of activities is it used for). I will be comparing these variables to a baseline gathered through a diary study of the same family prior to deployment.

eMutts: Supporting Awareness
To address issues of awareness and spontaneous sharing, I have designed the eMutts system. eMutts consists of a series of toys and sensors that children can carry these as key-chains (figure 3). Some are passive sensors that record data: pedometer, ambient noise sensor, GPS, etc. Other eMutts require explicit interactions from the child: stress ball which records pressure throughout the day, voice recorder, digital
camera, etc. The child selects one, two, or three of these toys to carry on any day. When the child docks the toys at the end of the day, they upload the data they have collected to a computer and send it to the parent. The parent can use an internet browser to view the data gathered from the sensors. Combining the information from multiple sensors can provide the parent with a window into the child’s life. The eMutts system is in the early development stages—as with the ShareTable, I plan to perform a long-term deployment of this system with real families once the implementation and pilot testing are completed.

**Expected Contributions**

The expected contributions of this research are twofold. First, I explore a new domain of designing technology specifically for children in divorced families—a marginalized but common segment of the population. Second, I introduce two emerging technologies for children and explore their impact through long-term evaluations. The ShareTable will help illuminate how children can remotely collaborate with adults. This has implications not only for divorced families, but also for communication with extended family and distance education. The eMutts system will highlight how children manage their own privacy and how parents consider multiple sources of information in understanding their child’s activities. This can help inform the design of future technology that supports parent-child interaction for other types of separation, such as military deployment, frequent business travel, and boarding school.

**References**


