
Bridging Gaps: Affective Communication in Long Distance Relationships

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Abstract

This study examines communication methods and needs of people in long distance romantic relationships to understand how intimate computing can help create or augment already existing artifacts to promote feeling of connectivity within non-located couples. We report our research in progress and provide a collection of initial design concepts based on the user research.

Keywords

Affect, intimate computing, evocative experience, presence in absence, computer-mediated communication

ACM Classification Keywords

H5.2. [Information interfaces and presentation]

Introduction

Rapidly changing global work and education environments has compelled people to face the challenges of maintaining long-distance relationships with their partners. [2,11]. Bell et al defines intimate computing as a “group of technologies that enhance or make possible forms of intimacy between remote people that would normally only be possible if they

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were proximate.” [1] Communication is used by non collocated couples to exchange factual information as well as to express their emotions to each other. Couples in long distance relationship often customize and/or create their own unique ways of communication to meet their needs. [3,4]. In this study we explore the subtleties in practice and modes of communication between couples in long distance relationships. In the following sections of the paper, we present our user research, summarize initial findings and present a collection of design concepts.

User Research

We conducted in-depth, semi-structured interviews of eight people to understand the nature of their communications in long distance relationships. Out of these eight people, two are married couple, two are international students, and all subjects are in a heterosexual relationship. Their relationship period vary from 1 to 9 years. There are two females and six males. Three of the participants are presently collocated though they had lived away from their partners in the past. The interviews presented us with recurrent themes.

The interviews were carried in two parts. The first part explored participants' lives in long distance relationships and the role of communication in them. Couples in long distance relationships often exhibit a strong need of creating and supporting presence in absence [5]. They often use verbal and non-verbal communication to create a sense of presence. The interviews centered on the following issues:

- Communication needs and tools used

- Fulfillment of need of expression of emotions
- Expectations from each other
- Importance of feedback from partner
- Types of artifacts or memories of special meanings due to partner's involvement
- Lacunae in the present mode of communication

In addition, we were also concerned about the reactions of participants towards existing design concepts and tools

Initial Findings

Our initial findings show that communication holds prime importance in long distance relationships. All the participants spent a good part of day communicating with their partners or allocate special time so as to stay in touch with them. In fact, when asked to give advice to people who would be new to long distance relationships, our subjects unanimously highlighted the importance of persistent communication between partners. We also discovered that all the participants preferred cell phone over any other modes of communication. However, one of the participants observed that talking on the phone makes him feel he is talking to a slightly different person; that is, he feels he is communicating with a certain personality of his partner and not her completely. Another participant remarked that the use of cell phone in long distance relationship is akin to talking to the electric waves as opposed to his girlfriend. Our subjects usually veered off other modes of communication such as Instant Messaging(IM) due to the fear of the potential for miscommunication as well as their lack of confidence in using this means to express themselves effectively. As such, our participants appropriate IM as a supporting

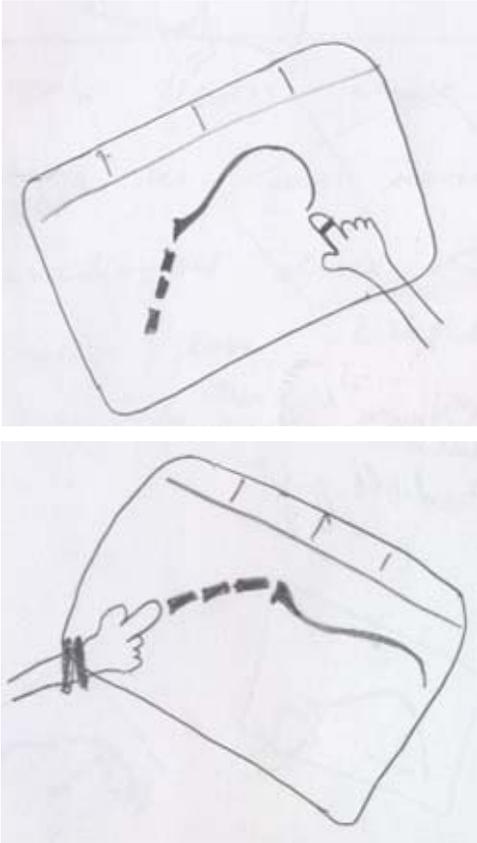


Figure 1. MatchUs Board. Both boards are synchronized hence giving an illusion of togetherness and creating a shared experience.

tool for other primary means of communications. For example, IM was largely used to coordinate time to talk with each other for our subjects.

Most of the participants engaged in “surprise messages” to let their partners know how they feel about them. Participant 1 mentioned that even though she and her partner are aware of each others’ feelings, receiving and sending love or secret messages makes her feel good. To know that her partner was thinking about her never failed to evoke a positive feeling in her. Such messages strengthen her relationship with him on a daily basis. These sentiments were echoed by other participants as well. From our interviews we also discovered that our subjects have become more aware of devices they use to connect with their partners. Participant 7 observed he has become more aware of his cell phone, for example. He takes precaution to ensure that his cell phone is always charged and always with him so that he can stay in touch with his partner. The artifact to him thus takes on a much more nuanced and emotional quality. Though participants do feel that their and their partners’ expectations mismatch in terms of quantity and quality of communication from time to time, they are generally able to meet each other’s expectations. When asked if an enhancement to an already existing communication device or the creation of a new tool might demand more expectations, they believed it would increase expectation only as much as a new device does. They would not generally shy away from using something that might help them express themselves and communicate with each other more effectively.

The interviews also shed light on the meaning of things to people in long distance relationships, and the fact

that objects often take on special meanings due to the involvement of their partners. All participants had artifacts or memories which were precious to them. These were the objects that acquired special meaning and meant beyond the objects themselves because of their partners’ involvement in them. Though these objects might have no practical usage (like movie ticket stubs) or are commonplace items (like toaster oven), participants often took very good care of them. For example, participants found letters written by their partners to be very special. They felt that the tangibility of the letters convey emotional importance beyond the written words. The very fact that they can touch them, feel them make them feel closer to their partners. One of the participants told us about a poem from his native country which narrates, “...feelings and minds in this world are subject to change, objects like moon are always to stay...”. Even though his partner was separated from him by more than 12 hours, gazing at moon made him feel closer to her.

Our participants on the whole seemed to accept existing modes of communication. The participants who were presently living with their partners mentioned that while they lived away from them, they had to decide how to prioritize what they wanted to convey. All of them unanimously observed that the presence of their partners is what they missed the most. Regular physical interaction such as consolation of a stressful situation through a timely embrace from their partners is what the participants crave the most.

Implications for Design

As stated above, the interviews demonstrate regular and persistent communication is vital in long distance relationships. However, communication can come about



Figure 2. Image from the GroupLab Diamond Touch toolkit. MatchUs Board is a concept where two boards are individually used and are synchronized over net to provide a feeling of drawing something together and hence creating a shared experience. Image from, <http://grouplab.cpsc.ucalgary.ca/software/DiamondTouchToolkit/index.html>



Figure 3. Together Aquarium. Letting partners co-jointly participate in an activity.

in various ways. For example, one of our participants told us his partner once wrote him a message on his bathroom mirror while vacationing at his place, which he has yet to erase. Though he does not read it carefully everyday, a quick glance at it is enough for him to feel the presence of his partner. In this example, the message on the mirror not only serves as a shared memory, it also becomes a means through which the individual draws emotional support. As with collocated couples, artifacts take on special meanings to our participants, sometimes much more so due to the geographical distance between them and their partners, making it challenging to create shared memories. One of the design goals will need to be enabling our subjects (and people like them) the opportunities to co-create shared experiences with their partners.

Interviews also show daily updates between partners are also desired, through which they can feel involved in each others' lives. In addition, these updates also lessen the anxieties from living apart. For example, one of the participants revealed "...he used to live 3 hours away from me. When he would go home after spending a weekend with me, I would eagerly await his call....his call denoted his safety...I would worry endlessly if he delayed in calling me..." Another participant shared the same sentiment, "...now I know her schedule, I feel more at peace knowing where she is, what she is doing and when is a good time to call her...this was missing earlier..." Failing to get in touch with each other at the appointed or expected time seemed to be one of the leading causes of communication breakdown between the couples we interviewed. Such breakdowns were more often than not followed by confrontations or strained relationships. Given that knowledge of location

of a person serves to inform his/her social and personal situation [9], situational awareness of partner goes a long way to solidify the bonds between non-collocated couples. Our interviews demonstrate that awareness of each other's routines and activities is vital in overcoming potential problems in relationships.

The user study helped us unravel the underlying characteristics of communication typical in long distance romantic relationships: **shared experience** and **situational awareness** are important in creating a sense of togetherness, despite of geographical distance.

The second part of interview elicited the response of participants towards Feather [6], SoftAir communication [7], and Affective Messaging Service [8]. All of them appreciated Feather for its subtlety, romantic notion, and fluid motion. Affective Messaging Service made participants feel a loss of control and inability to choose what to tell their partners. Participants felt SoftAir Communication would remind them the absence of their partner more than help alleviate it. This exercise helped us determine the general consensus about acceptance of devices helping mediating intimacy between non collocated couples. The design for non collocated couples should not present situations for miscommunication, as geographical distance only aggravates it and has to be able to create presence in absence in a more tangible manner.

Design Concepts

From our initial study we found out that need of communication is utmost and it generally serves the purpose of **sharing the experience** and promoting

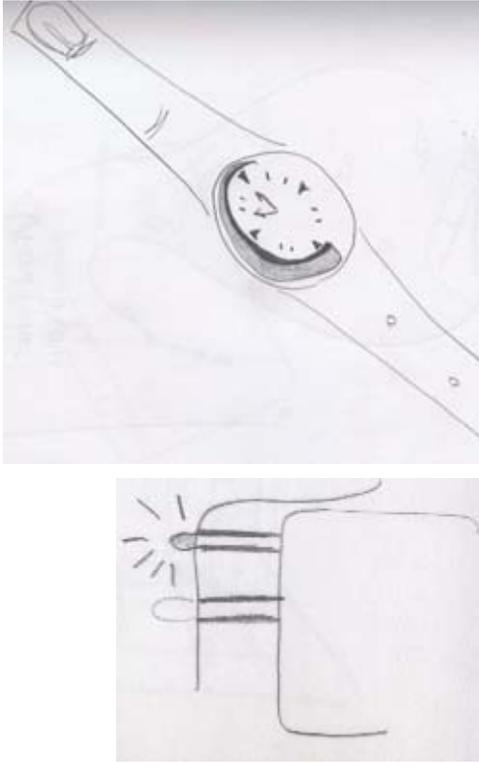


Figure 4. CanCanWatch and notification for conveying situational awareness.

situational awareness between couples who are not collocated. Our collection of design concepts builds on existing HCI and CMC research as well as user research to focus on enhancing the emotional communication between couples in long distance relationships with the hope to overcome what is missing from their relationships. Following are the design concepts revolving around the above mentioned themes.

1) MatchUs Board: This design focuses on bridging the gap by creating shared memories and experiences by the effect of co-creation. Both partners have a synchronized MatchUs Board (Figure 1) which uses multi-user touch input and display technologies such as DiamondTouch [10] (Figure 2). Using their fingers they could draw on their board. The drawings synchronously appear on both boards. Both partners can choose to extend each others' drawings to simulate the experience of drawing together. MatchUs can further provide the capability of saving work and continuing from it. This would provide both partners to save their memorable drawings. This concept can evolve as a game between partners and can be used to leave each other quick "handwritten" notes. The haptic affordance and tangibility makes MatchUs more evocative.

2) Together Aquarium: This is an online virtual aquarium which both partners jointly own. The partners have to coordinate to take care of fish. They can involve in various activities like feeding fish, changing water, checking temperature of water, etc. (Figure 3). This concept promotes the feeling of oneness and co-ownership. The collaborative virtual space provides an environment where the couple jointly has the responsibility of caring for the aquarium, and in the

process, co-creates shared experiences, thus reaffirming the relationship between them [4].

3) CanCan: Interviews of participants showed that situations occur that do not allow them to reach their partners all the time, leading to an increase in stress between them. The CanCan concept extends leet speech (a form of shorthand primarily used on the Internet to convey behaviors or accomplishments) to convey situational awareness between the two partners. We conceptualize CanCan as a button aesthetically added to common and ordinary objects such as a wrist watch. (Figure 4) The button corresponds to "can't be there for you right now." The depression of the button leads to notification light at the partner's end either on a computer terminal, a phone or a watch. Building on earlier research [12], such means of information exchange between the two partners has the capacity to amplify their social and emotional capital and subvert the possible temporal negativity in their relationships.

4) Audible Gifts: Interviews revealed that letters held a special significance for our participants. The tangibility, thoughtfulness and amount of effort required to create one make them one of the most valuable objects for our subjects. The interviews also showed that non-collocated couples gravitate towards forms of communication which somehow connects them to a more physical aspect of their partners. The *Audible Gifts* concept explores the ideas above-mentioned findings through tangible artifacts with the goal of creating shared experiences. Both partners have a combination of speaker and microphone controller that can be used to leave each other voice messages (Figure 5). In our conceptualization, these two "audibles" are

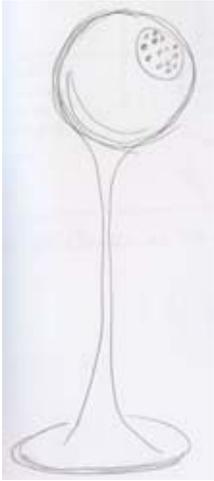


Figure 5. Audible Gifts. Speaker and mic are housed in the globule on the top. The handle and globule creates an affective experience when used.

not connected to each other and hence are not designed for couples to hold a regular conversation. Instead, *Audible Gifts* is designed with a daily limit of 5 minutes for the length of any given message. Couples are encouraged to leave each other one message a day that is up to 5 minutes. A sense of surprise and anticipation that brings about by the use of *Audible gifts* has the potential of opening up new channels of emotional expressions between partners.

Future Work

In this study we explore the communication needs of people in long distance romantic relationships and how artifacts shape and mediate the experiences. Our initial user research provided us insights to design around two themes: Creating shared experiences and promoting situational awareness.

The next phrase of our research involves extensive usability evaluation of our design concepts with our subjects to understand the roles and impact of the tools have upon the relationships.

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