Intimate Objects

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ABSTRACT

We present a preliminary and ongoing study into intimate objects: technological devices for maintaining intimacy at a distance. We use the notion of critical technical practice to provide a theoretical framework on which to base our designs, building devices that differ from mass communication devices in three ways: they are for couples in a relationship to communicate with each other, not with everybody else, they are for a specific couple to use, not a generic couple, and they are for the transmission of specific intimate communication, not all-purpose communication.

We present an overview of the study, give some examples of intimate object sketches produced by our subjects, and discuss questions posed by the study, particularly those concerning the generalizability of the results.

Categories and Subject Descriptors

H.5.2 User Interfaces: Prototyping.

Keywords

Intimacy; reflective design; intimate objects; participatory design; couples.

1. INTRODUCTION

"My girlfriend and I have a problem not uncommon in academic couples: we live on different coasts. We attempt to maintain our feelings of intimacy through regular and frequent phone calls, several emails a day, and occasionally combining phone calls with using our webcams.

As such, my phone has become the most important mediator between me and my girlfriend: I spend approximately an hour a day talking to my cellphone, which then relays the message to my girlfriend. But this is the same cellphone I use to talk to my bank manager and my mother. It would be nice to have a shared communication object that allows for the communication we need."

In this work, we use Philip Agre's notion of critical technical practice to provide a construct to understand this problem, and discuss a project aimed at finding a better way of communicating intimacy with a loved one. [1]

2. CRITICAL TECHNICAL PRACTICE

Critical technical practice describes an approach to developing solutions to technical problems that includes taking a core premise on which a field is founded and reversing it. It then proposes building a technology based on that reversed premise, which can contribute to the field in a novel and interesting way.[1] Agre's key example is the notion of disembodiment that underlies classical artificial intelligence. By contrast, he proposes building fundamentally embodied agents; this notion is at the heart of much of Rodney Brooks's work at MIT's AI Lab. [3]

Critical technical practice also includes a level of reflective awareness of the discipline one is engaged in, including the field's sociological and cultural context, the philosophies it espouses at an unconscious level, and the field's key metaphors or analogies.

Several designers of interactive systems have used critical technical practice as a tool to generate innovative and critically relevant systems. [11] For example, Simon Penny's notion of 'reflexive engineering' integrates robotics with an artist's sense of design and play. His robot *Petit Mal* is chaotic, whimsical and clumsy: un-robot-like conduct that encourages the audience to generate theories as to the origin of this unusual behavior, encouraging the public to become aware of and consider their own notions of agency. [9] Similarly, Gaver, Beaver & Benford's 2003 paper *Ambiguity as a Resource for Design* [5] proposes inverting HCI's traditional goals of "usefulness and usability" and explores the possibility of designing for rich experiences, with potential to be intriguing, mysterious, and delightful.

Critical technical practice does not advocate the replacement of a field with one founded upon its inverse; rather, it proposes that such conceptual changes can bring insight, awareness, and novel contributions to a discipline.

3. INVERTING

Through intimate objects, we are inverting a number of assumptions around the design of communication devices. We are not building mass communication devices for transmitting all kinds of messages to all kinds of people. Instead, we are building *specific* communication devices. We mean this specificity in three ways. First, we are building communication devices that are designed for couples to communicate with each other, not for a user to communicate with everyone else. Second, we are building communication devices that are designed for a specific couple to use, not a generic couple. And third, we are building communication devices for communicating specific kinds of messages within that relationship, not all kinds of messages.

The first aspect is illustrated by a comparison to purchasing a new cellphone. If you found out that it would only allow you to talk to others with the same model of cellphone, you would feel cheated. Intimate objects are designed with that limited functionality in mind.

Designing for a specific couple has certain implications. For example, we suggest that if a couple were to develop an intimate object for their relationship, it would feel wrong for either member of that couple to use the intimate object to communicate with new significant other in the event of that relationship failing.

Our third specificity regards the kind of messages transmitted. Intimate objects are designed for transmitting intimate messages. They do not preclude the need for couples to discuss mortgages and damp basements and behavior of mothers-in-law, but allow for that communication to continue through existing means while providing an alternate channel reserved for intimacy.

In this paper, we discuss designs with no more and no less than two users, while recognizing that similar yet different systems could be designed for other purposes with similar limitations -- designs for communication within families, in the manner of [6], for example.

4. METHODS

We were initially inspired by expanding the *Honey I'm Home* project [7], a single-bit smell output device which a distant lover activates to indicate they are thinking of you -- low-key method of maintaining intimacy to similar to Strong & Gaver's *Scent*. [13] Since starting the project, we have also been impressed by the breadth and depth of designs presented at the *Intimate Computing* workshop at Ubicomp 2003 [2], and have also been influenced by work by Peter Wright, John McCarthey, and others on enchantment. [8]

We developed a methodology that respects the deep knowledge that couples have about their own relationship, influenced by participatory design practices. [10] We recruited four couples[1] in stable long distance relationships: one member of each couple was at Cornell, in Ithaca NY. Each couple had been together prior to the separation. Of the remote members, two lived in California, one in New York City (approximately four hours drive away), and one lived in London. The couple with one member living in New York City saw each other most weekends; the other couples saw each other approximately every month, although generally for several days at a time.

Each member was interviewed separately by Goulding (or, in one instance, by the Cornell-based member) to understand the techniques and technologies that the couples currently used to maintain intimacy at a distance. Interviews aimed to characterize the frequency, regularity, and variety of technology, although were primarily qualitative to place the communication in context.

After the interview, each couple was also asked to, individually or together, generate writing, sketches or ideas for designed objects that would communicate some aspect of intimacy. To encourage creativity, it was emphasized that such writing and sketches should not necessarily be limited to 'possible' or 'feasible' objects, and that the sketches should be based on the couple's experience of their own relationship.

A subset of the sketches were selected by the authors, and in some cases slightly modified to make them more buildable. The resulting short list of eight ideas was presented to the couples, and they were asked for their reactions and which objects, if any, they would be interested in trying out. Their reactions determined which objects are currently in the process of being built: the aim is to supply three couples with personalized devices for four weeks to understand how the objects are used and how they change communication patterns within existing long distance relationships.

5. RESULTS, REACTIONS & SKETCHES

We were extremely impressed by the novelty and variety of ideas created by the couples. A selection is shown here, with a description and brief discussion.
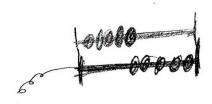

Figure 1. How do I love thee? Let me count the ways.

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[1] One couple later had to drop out of the study and is not included here.

How do I love thee is a shared abacus: each member has one on their desk, and the devices remain in the same state, synchronized over the internet. We feel the great advantage of *How do I love thee?* is the ambiguity it allows[5]: different couples are free to interpret it and use it for their own uses. This device seemed to resonate with some of the themes of private intimacy from couples' interviews: secret pet names, code phrases, and other techniques to convey a sense of intimacy while maintaining privacy. Couples liked the design, but worried that the abstraction would make it seem cold and uninviting.

Figure 2: Hand Holding

Figure 2 shows two attempts to provide for the sensation of handholding at a distance. Both, like *How do I love thee?*, are symmetric, and on both subjects' desks or tables. The object on the left is translucent, and made of soft silicone. To use it, one member of a couple puts their hand into their (customized) handprint. Their significant other's handprint lights up and starts to pulse in rhythm with the first user's heartbeat. When both have their hands in the handprints, the a small heater warms the device, in an attempt to simulate the body heat of the other.

The object on the right is an attempt to convey the physical pressure of handholding. Again, each member of a couple has one on their desk. Each places their hand into the device, wrapping around the central post. The outer sleeve on one device contracts in correspondence to the pressure on the inner post of the other device. (This is difficult to explain in words; in short, the tighter the other person squeezes, the tighter your hand is squeezed by the device.)

While one couple in particular (one member of which generated these designs) said they missed the sensation of touch in their relationship, the other member questioned whether either of these designs would provide an adequate substitute.
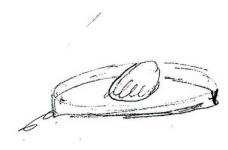

Figure 3: Love Egg

The *Love Egg* is one of several designs that focused around the idea of low-overhead messaging systems. Couples reported frustration with conventional voicemail systems:

they either wanted to talk to their loved one, or they wanted to leave a message for later pickup, and one was not an acceptable substitute for the other. The *Love Egg* enables leaving of intimate messages: one member of a couple can pick it up and speak into the small end of the egg, before returning it to the dish. Doing so transmits the message to the dish, which in turn transmits it over the internet to the other egg. This egg then begins to roll around in the concave dish: when the egg is held to the lover's ear, the message plays from the large end of the egg. It's reminiscent of Durrell Bishop's Marble Answering Machine[4], but the comparison to Bishop shows insights into features that might be inherent in an intimate messaging system: the synchronicity, the single message, the mode of interation.

6. CURRENT WORK

We are planning to build *Love Egg*s and/or *How do I love thee?* for the subject couples, with the intention of delivering them in June, giving a month for use and then evaluation prior to the DIS'04 poster session. We then hope to reiterate our designs, based on feedback from both the users and from DIS attendees, and expand our subject pool to provide a wider variety of couples in a wider variety of relationships, all of which require the maintenance of intimacy while separated.

7. DISCUSSION: GENERALIZABILITY

By deliberately stepping outside of the boundaries of mass communication, we question several assumptions, of which generalizability is one. What impact can a few devices designed for a handful of near-randomly chosen couples have on the discipline of interactive design? One answer concerns recognizing the importance of the subject matter, and a move from 'efficient' computing to 'enchanting' computing.

Another concerns the question of customized technology. We are not uncomfortable with the idea of customized design in other domains, such as interior decorating, in which a trained specialist uses a set of tools and objects to transform a physical space for a given need. However, the notion of customized technology still seems alien: there seem to be many examples of those willing to spend many thousands of dollars or euros doing up a kitchen they cook in for, at most, an hour a day, but these same individuals interact with the same mass-produced computers running the same mass-produced software for several hours a day. They may change a default font or background image, but it's unheard of to hire a designer for one's own, custom, individual computing environment, and corporate helpdesks are not unsurprisingly unwilling to invest their time in such efforts for any but their most senior clients. Perhaps this is a job function we will see emerge as opportunities for customization increase in the domain, and, more

importantly, an awareness emerges that such configuration may be relevant.

Finally, we feel that this process asks some interesting questions about the user as a focus of design. Much of usability testing focuses on the end user experience: the user functions as part of a larger community, corporation, or other entity, but at a fundamental level the design is about an individual user. In this poster, we propose designing for 'the relationship', for 'the couple'. This is significant in two ways. One is the two-person unit; the other is the specificity.

This paper is concerned primarily with the design for 'the couple'. What can get lost in this is the focus on the particular couple, not just "a couple". Why should the device used by one couple to communicate across a four-hour drive until they see each other the next weekend be influenced by the features needed by a couple trying to solve their problems of communication across five time zones? We feel that this switch from notions of "mass communication" to "personal communication" has a great deal of potential for providing provocative and above all functional designs for intimacy and beyond.

8. ACKNOWLEDGMENTS

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