The **Whisper Pillow. A Study of Technology-Mediated Emotional Expression in Close Relationships**

**Wei-Chi Chien**  
Folkwang University of Arts  
Universitätsstrasse 12  
45141 Essen, Germany  
wei-chi.chien@folkwang-uni.de

**Sarah Diefenbach**  
Folkwang University of Arts  
Universitätsstrasse 12  
45141 Essen, Germany  
sarah.diefenbach@folkwang-uni.de

**Marc Hassenzahl**  
Folkwang University of Arts  
Universitätsstrasse 12  
45141 Essen, Germany  
marc.hassenzahl@folkwang-uni.de

**ABSTRACT**  
Emotional expression is crucial to feeling close to each other. However, current lifestyles and working situations often reduce the opportunities for "relatedness experiences". The present paper presents the Whisper Pillow, an interactive artifact for mediating emotional expression among couples with different daily routines (e.g., due to shift work). We provide a detailed reflection about how form of and interaction with the pillow create and shape the desired experience. In addition, we present an empirical exploration of the practices and experiences which emerge when using the pillow in daily life. The study showed that experiences can be successfully inscribed into the material. At the same time, it reminds us of the fact that users still need to embark on the experience and always find alternative practices and experiences through appropriation.

**Author Keywords**  
Experience design; emotional expression; close relationships; relatedness; grounded theory.

**General Terms**  
Human Factors; Design.

**INTRODUCTION**  
The expression of affection for our loved ones – the occasional "I love you" or "I think of you" – is crucial to peoples' wellbeing [6]. It fulfills a need for relatedness, one of the basic human psychological needs (e.g., [18, 25]). However, current lifestyles and working situations pose barriers to the frequent experience of relatedness (i.e., love, intimacy, closeness, belonging, togetherness). An increasing number of couples are in long distance relationships and need to find ways for emotional expression over a distance [5]. Besides living apart, differences in daily routines (e.g., due to shift work) reduce possibilities for emotional expression. Thus, even couples living together may miss opportunities to express their feelings.

Researchers in Human-Computer Interaction (HCI) and Interaction Design are well-aware of the need to mediate relatedness over a distance or asynchronously through well-designed technology. In particular, there is a growing emphasis on the adequate mediation of experiences rather than the efficient transfer of factual information (e.g., [13, 15]). Recently, Hassenzahl and colleagues [10] reviewed 143 published artifacts supporting technology-mediated relatedness. This revealed six different strategies used by designers to create feelings of closeness, belonging, and togetherness. A frequent strategy is to create awareness of the partner, by, for example, the transmission of current activities or mood. Other strategies focus on physicality, joint action, tracking past activities to create shared memories, or gift giving. Expressivity (i.e., emotional expression) is second most common strategy. Designers attempt to create adequate tools for expression by, for example, suggesting the expression of personal emotions through private agreed codes (e.g., [17]), by focusing on the non-verbal expression and representation of emotion (e.g., [28]), by augmenting phone calls through means of non-verbal expressions (e.g., [12]) or through automatic recognition of facial expression (e.g., [4]). For example, the Haptic Instant Messenger [24] enriches text messages by so-called "hapticons", vibration patterns with a predefined emotional meaning (e.g., big smile, kiss, embarrassed). Other concepts make use of voice or video messages (e.g., [3, 16]), which are more suitable to transfer subtle and emotional information than written messages. The Love Egg [15] allows couples to transmit intimate audio messages via the Internet. Audio messages are recorded by picking-up the egg and speaking into its small end. Returning it to its holder transmits the message to the partner's egg, which then begins to roll around. The partner can then listen to the message by holding the egg close to the ear.

While many innovative ideas of how to mediate relatedness through technology over a distance exist most concepts focus on the functionality rather than the specific form of interaction. They describe what couples can do with the technology and the new opportunities it offers. The example of the Love Egg [15] is revealing. It establishes a particular way of sending voice messages over a distance. From a technological perspective this is nothing new,
because of the many already existing ways to transmit voice messages. An experiential perspective, however, assumes that the actual way of how a message is prepared, sent, received and consumed is important for the resulting experience. There is simply a difference between leaving a message on the partner's voicemail and speaking into little eggs. Whether the egg, however, is an appropriate representation can be questioned. Why an egg? Why is it rolling around – because the message wants out? Is the resulting feeling of urgency appropriate? Each of these aspects – materiality, form, and interaction – will have experiential consequences and are, thus, important. Surprisingly, many design cases lack (reported) reflections about how an interaction may feel and why form and interaction were believed to be adequate to support this particular way of mediating relatedness. Designers/researchers still lack concern for the aesthetic of interaction (e.g., [14, 23]), which seems especially important, when designing for "love", where people are quite aware of how deciding subtle differences in the tone of voice can be. There are many ways to say "I love you". Some of them can be terribly wrong.

In addition to a noticeable insensitivity to the aesthetics of interaction, many suggested systems remain on a conceptual level. Although these artifacts are about establishing fulfilling practices and resulting experiences, their effect on the lifeworld of people is rather rare. For example, only 25% of the 143 concepts reviewed in [10] were studied in the field. While inquiries of emerging practices around technologies, such as video chat (e.g., [2, 21]), are quite common, comparable inquiries into the practices created and shaped by novel artifacts, such as the Love Eggs are rather rare.

In this paper, we extend previous work on technology-mediated relatedness by (1) a more conscious reflection about how form of and interaction with an artifact creates and shapes desired experiences and (2) a deep exploration of the practices and experiences emerging in couples' daily life through usage. The artifact is the Whisper Pillow. It addresses emotional expression among couples living together, but missing opportunities for direct exchanges, due to differences in daily routines. Couples with "healthy" practices leave post-its or other written messages. However, these media do not actually "shape" the exchange between couples. One can doodle a sweet heart or leave a shopping list. In contrast, the Whisper Pillow more explicitly suggests the exchange of loving messages as a healthy, relationship maintenance-oriented practice and attempts to shape emerging experiences through the pillow's material form and interaction.

In the remainder of this paper, we present the pillow and discuss its design rationale with regards to the desired emerging experience. We then present findings from a study with six couples, using the concept in their daily lives over a 14-day-period. Our qualitative analysis was based on the method of grounded theory [27]. We report on the couples' emotional experiences and appropriations. We conclude with general implications for designing for relatedness in general and emotional expression specifically.

**THE WHISPER PILLOW**

The Whisper Pillow allows couples to leave messages for each other. It is designed for couples living together or at least close by, but not seeing each other due to mismatches in daily routines (e.g., because of shift work). The pillow is, thus, more about asynchronous messaging than messaging over a distance. The pillow features a message pocket (see Figure 1). If the pocket is empty and opened by a user, a voice recording starts. It records a messages whispered into the pocket. Simultaneously, the end of the pillow inflates and creates an impression of being "filled" with the message. The recording ends with closing the pocket. If a full pocket is opened, the message is played back, deleted, and the pillow deflates. To ensure that user do not play back their own messages, the pillow features a color-coded pocket on each side of the pillow (although both pockets activate the same mechanism). Thus, after leaving a message, the user is asked to turn the pillow to the partner's side to signify that a new message is waiting.

Following an experience-oriented design approach [9], all choices regarding form, function and interaction were aligned with the intended experience.

Other than an egg, a pillow already emphasizes intimacy and feelings of closeness. Pillows are typically placed on the bed or the sofa, rather intimate places, further underlining its intended use. Through this, the pillow offers emotional expression in situations (e.g., resting, contemplating, watching television), where missing the other one may become especially aware and emotional expression especially significant. Last but not least, the pillow is a common object. Only initiates know its delicate content. This secret, shared among the couple, but hidden in plain sight adds to the feeling of closeness.

The form of interaction for leaving and receiving a message affords intimacy and emotional expression. The design suggests an intimate body posture (embracing the pillow, resting the head on it when recording or listening in). Speaking into a pocket and the sensitive microphone suggests speaking in a tender, whispering voice. The need to hold the pillow close to the ear to listen to a message ensures attention and implies respect for the partner's message. In addition, the gentle and hidden interaction suggests delicate secrets. By inflating and deflating the pillow, a message becomes more tangible. It playfully refers to the partner's breath and practices, such as blowing a kiss, thereby adding a physical component to the exchange.
Note, that the *Whisper Pillow* only allows to record one message at a time. After playing it back, it is deleted. This emphasizes the uniqueness and ephemerality of emotional expression, just like whispering in one’s ear. In addition, the non-permanent storage of a message lowers the barrier for intimate words, because it reduces the chance of later embarrassment. It is understanding and forgiving of any “follies of the heart” and emphasizes privacy (the message cannot be played to other people). In addition, the volatility of the messages suggests repeating emotional expression. It is about the frequent expression of love to reassure and maintain the feeling of relatedness but not about, reminiscing about better times, by listening to old message (the equivalent of reading old love letters).

Comparing the *Whisper Pillow* to existing concepts for emotional expression reveals a number of parallels and differences. Similarly to the *Whisper Pillow*, many concepts aim at supporting emotional expression through "tangibility". Examples are vests (e.g., [20]), dolls or teddy bears (e.g., [29]), belts (e.g., [8]), finger rings (e.g., [31], or wrist bands (e.g., [22]) to transfer the partner's pulse [31], gestures, such as a hug (e.g., [13, 19, 29]). *Hugvie*, for example, is a human shaped pillow, to be hugged while talking to the partner via cell phone (the cell phone is embedded in Hugvie's head). Compared to this explicit reference to physical intimacy, the *Whisper Pillow* takes an indirect way of addressing physicality. Other concepts combining messages with a special object rely on text messages, which stay on the object permanently and evidently (e.g., *post-my-pillow* [33], *message mug* [32]). In our concept messages are recorded and stored in a less evident way to establish elements of secrecy and discovery. Using voice instead of text as a medium for leaving a message is intended to evoke a more direct and emotional impression. Interestingly, existing devices providing voice messages (e.g., answering machines, cell phone mail boxes) only suggest this as a work-around, when synchronous communication is not possible, but not as a purposeful "gift" for the partner. Also, other concepts addressing intimate gift giving intentionally support storing, reviewing and reusing the partners' gifts (e.g. [13]). In contrast, the *Whisper Pillow* emphasizes the uniqueness and ephemerality of intimate messages. Hence, while a number of existing concepts may superficially appear quite similar, they differ in important details. The *Whisper Pillow* may not be groundbreaking novel at first sight. However, its design offers an apparent sensitivity towards the desired emerging experiences, which – to our mind – many concepts are lacking.

To explore whether experiential notions embedded into the *Whisper Pillow* would actually emerge in couples' lifeworld, we ran a two-week study with a functional prototype.

**THE WHISPER PILLOW IN THE WILD**

**Participants**

Six heterosexual couples (C1 to C6, f = female, m = male) participated in the study. Couples differed in their degrees of correspondence of daily routines and general situation, i.e., three living together, and three living in separate flats, but often staying together in one of their flats. Typical means of technology-mediated communication were phone calls and SMS (see Table 1 for further details).
Table 1: Participants.

<table>
<thead>
<tr>
<th>Participant #</th>
<th>Age</th>
<th>Professional background</th>
<th>Working Hrs.</th>
<th>Daily routine correspondence</th>
<th>Duration of Relationship</th>
<th>Living Situation</th>
<th>Communication means</th>
</tr>
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<tbody>
<tr>
<td>C1.f</td>
<td>36</td>
<td>child minder student (Biological Engineering)</td>
<td>6am-3pm, 9am-7pm</td>
<td>low</td>
<td>5 yrs. (married since 2 yrs.)</td>
<td>together in one flat</td>
<td>phone calls, SMS</td>
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<tr>
<td>C1.m</td>
<td>25</td>
<td>student (Biological Engineering)</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>C2.f</td>
<td>23</td>
<td>student (Music)</td>
<td>schedule</td>
<td>high</td>
<td>2 yrs.</td>
<td>separate flats, different cities</td>
<td>phone calls, SMS</td>
</tr>
<tr>
<td>C2.m</td>
<td>23</td>
<td>student (Music)</td>
<td>schedule</td>
<td>high</td>
<td>2 yrs.</td>
<td>separate flats, different cities</td>
<td>phone calls, SMS</td>
</tr>
<tr>
<td>C3.f</td>
<td>22</td>
<td>student (Graphic Design)</td>
<td>schedule</td>
<td>high</td>
<td>3 yrs.</td>
<td>separate flats, different cities</td>
<td>phone calls, SMS, Skype, email, post cards</td>
</tr>
<tr>
<td>C3.m</td>
<td>22</td>
<td>student (Industrial Design)</td>
<td>schedule</td>
<td>high</td>
<td>3 yrs.</td>
<td>separate flats, different cities</td>
<td>phone calls, SMS, Skype, email, post cards</td>
</tr>
<tr>
<td>C4.f</td>
<td>48</td>
<td>teacher</td>
<td>7:30am-12am + 5pm-9pm, 7am-5pm</td>
<td>low</td>
<td>32 yrs. (married since 30 yrs.)</td>
<td>together in one flat</td>
<td>phone calls</td>
</tr>
<tr>
<td>C4.m</td>
<td>49</td>
<td>teacher</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>C5.f</td>
<td>30</td>
<td>teacher</td>
<td>Class schedule</td>
<td>high</td>
<td>6 yrs.</td>
<td>together in one flat</td>
<td>phone calls, leaving notes for each other</td>
</tr>
<tr>
<td>C5.m</td>
<td>35</td>
<td>teacher</td>
<td>Class schedule</td>
<td>high</td>
<td>6 yrs.</td>
<td>together in one flat</td>
<td>phone calls, leaving notes for each other</td>
</tr>
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<td>C6.f</td>
<td>38</td>
<td>seller</td>
<td>no fixed shifts, ranging 9am-10pm</td>
<td>low</td>
<td>2 yrs.</td>
<td>separate flats, same city</td>
<td>phone calls, Skype, Facebook messages</td>
</tr>
<tr>
<td>C6.m</td>
<td>29</td>
<td>student (Industrial Design)</td>
<td>8am-6pm</td>
<td>low</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Procedure

Participants were given the *Whisper Pillow* for about two weeks (between 12 and 15 days). Couples were first invited to a 30-minute introduction. It started with an interview about the couple’s current living situation summarized in Table 1. The *Whisper Pillow* was then introduced through a short movie clip (see https://vimeo.com/67024416). Subsequently, participants familiarized themselves with the prototype (see Figure 2).

![Participant trying out the Whisper Pillow](image1)

**Figure 2: Participant trying out the Whisper Pillow.**

Participants were given the *Whisper Pillow* to take home, and were instructed to use it as often as they liked. Figure 3 shows the *Whisper Pillow* in a couple’s bedroom during the study period.

![Whisper Pillow in the bedroom of one couple during the test period](image2)

**Figure 3: Whisper Pillow in the bedroom of one couple during the test period**

After the two-week test period, we ran a second open interview, focusing on retrospective narratives of the couples’ experiences with the *Whisper Pillow*. The interviews revolved around experiences, typical usage situations, reasons for recording a message, or specific emotions, when listening to a message. Couple members were interviewed separately and each interview lasted about 30 – 45 minutes. Interviews were audio recorded and transcribed for later analysis.

Data Analysis

The qualitative analysis of the interviews was based on grounded theory [27] and Adams and colleagues [1]. It included open, axial and selective coding. The purpose of open coding is to identify entities, to group them into categories, and to describe relevant properties and dimensions pertaining to a category. The codes are extracted iteratively from the data in the process of analysis.
Axial coding then identifies relationships between categories as well as conditions, context variables, and resulting consequences. Finally, selective coding is about deliberately setting a focus for the analysis. Core-categories are selected. A descriptive narrative (i.e., a storyline) is developed, which integrates all knowledge extracted from open and axial coding. Note, that the different forms of coding do neither represent consecutive stages nor are they without interactions. Grounded theory actually suggests an iterative procedure, alternating between different coding strategies as interpretation proceeds. Note also that the here applied method of analysis does not represent a rigorous procedure implying only one clear interpretation. Depending on one's research interest, one may develop different perspectives and set different foci for an analysis (i.e., the selection of the core-category). Our main interest was to understand the experiences created and mediated through the Whisper Pillow relevant contextual conditions as well as potential differences in experience between the six participating couples.

RESULTS AND DISCUSSION

The analysis of participants' reports suggested three broad emerging practices. Couples used the Whisper Pillow for (1) emotional expression, (2) joint action or (3) as an alternative communication channel (see table 2 for a summary). In the following, we discuss each practice in the light of basic underlying motivations and emerging emotional experiences, and relevant condition. Finally, we discuss differences in using the Whisper Pillow between the six couples.

Practice 1 – Emotional Expression

The Whisper Pillow aims at establishing and facilitating practices of emotional expression to create a relatedness experience. C1 easily incorporated the pillow into their daily routines. They were married and lived together, but suffered from a low correspondence of their daily routines, due to differences in working hours. As the husband exemplifies:

"I had to go to work [early] and of course it was a nice way of saying goodbye [....] to make a wish for a nice day." (C1.m)

The Whisper Pillow quickly established an accepted routine for expressing feelings in spite of the others physical absence. In contrast, C3 and C6, who do not live together and, thus, had fewer opportunities for leaving messages, struggled slightly with the pillow's suggestion. They recorded a message for the partner and handed it over with the pillow, when finally meeting in person. However, they listened to the message only when being alone again. The message just became more like a gift, wrapped in the pillow. Note, however, that this is not a consequence of the pillow, but of the living situation, not exactly corresponding to the situation we had in mind when designing the pillow.

The emerging temporal pattern of usage thus differed depending on living together (i.e., rather routinized, frequent) or apart (i.e., more deliberate, "one-round", less frequent). However, aspects of the emerging emotional experience remained similar.

A central aspect was anticipation, aroused by seeing that the pillow contains a message.

"The good thing was that I always felt excited before listening to his message. I was very curious" (C3.f)

At the same time, this creates expectations, which – if not met – may lead to disappointment. Of course, not getting a message becomes a source of disappointment:

"It's good to get one [a message], but if not, I felt a little disappointed. This pillow clearly creates expectations" (C1.f)

Feelings of anticipation and disappointment already hint a certain emotional depth of the practice established by the pillow. The message becomes a valuable emotional expression, subject to exited anticipation as well as disappointment, if the partner did not engage in messaging as expected.

In many cases, the messages were emotional, creating a feeling of romance:

"The messages were very emotional. I was really touched" (C1.f)

"It was quite romantic. His messages made me happy" (C6.f)

Besides this rather light expression of affection, messages also became a consolation when feeling lonely:

"It was a hard day and it was very heartwarming to hear his voice even though he was not with me" (C6.f)

Obviously, if messages conveyed through the pillow, can be so emotional expressive, they can also be disappointing, if they do not match the partner's expectations:

"When I was listening to her messages alone at home, I had quite great expectations. But sometimes her messages were very short and I felt somehow disappointed because I wanted to hear more" (C6.m)

All in all, C1, C3, and C6 engaged in the practice of exchanging romantic whispers as suggested by the pillow.

Given that C6 and C3 are not living together, their messages were usually "given" to the other – like a gift. From an emotional perspective, this made the messages even more meaningful for them. For example, C3.f and C3.m spent considerable time, preparing a "good" message for the partner:
"I've actually tried it out first. I just tried to speak some stuff in it to get a feeling for the volume, and how it sounds when one listens to it." (C3.m)

"If you do this in a hurry, you may say something weird or so. You don't want your partner to get such a message... That's why I tried it several times." (C3.f)

Messages were thoughtfully composed, the right tone was tried out, and care was given to the emotional expression, all of which reflects upon the value of the partner.

For C6.f her partner's messages became so treasured that she contemplated about keeping them:

"If I close the pocket, the message is gone. It was always a great pity for me. I want to have them longer." (C6.f)

While the couples living in different flats still established a meaningful practice, the fact that the Whisper Pillow was not designed for this particular situation was noticed and impacted the experiences: For example, C3 explained:

" [...] because of our living situation. [...] One cannot really leave a meaningful message then. Bringing it there and taking it back later was also inconvenient." (C3.f)

"I found it a little difficult. [...] Usually, your message should relate to what has happened during the day. I've thought about just telling a joke or singing a song or so, but that would be ... I don't know. It lacks a context somehow." (C3.m)

This highlights an important aspect of emotional expression. As long as it is per definition rather subtle and implicit, a shared context helps with setting the appropriate tone and allows for playful and romantic allusions. Without this context, a message becomes more like a gift. This, however, does not fit the form and interaction featured by the pillow and, thus, feels awkward.

**Practice 2 – Joint Action**

While emotional expression is at the heart of the Whisper Pillow, other practices emerged through appropriation. One can be roughly categorize as joint action, i.e., "playing" with the pillow, when actually being together.

"Somehow it's like a game, we play together. It's not bad to have a bit of a game in daily life" (C4.f)

C4 and C2 engaged in playful interaction:

"We took it and said something funny even though the other one was there. The other one answered it directly after." (C2.f)

The core of the emotional experience in this practice is stimulation and surprise rather than romance:

"I think he said something strange and funny in the pillow [...] once he sang a song... This was just priceless" (C2.f)

**Practice 3 – Alternative Communication Channel**

C1 revealed a third, unintended usage practice in addition to emotional expression. They used the Whisper Pillow as an alternative channel for communication to bridge communication gaps. C1.f explained:

"We had a quarrel on the 9th and then I left a message for him. [...] It was about the difficulties in our relationship. Saying such things directly into the others face would be hurting. But when you are listening to a pillow, you are not in a confrontational situation, and you don't show such strong and personal reactions. You have time to think about what the other said and reflect on whether it's true. [...] For me, the pillow is very good. I am pretty stubborn. When he says something critical, I do the same. Using the pillow instead works better for me" (C1.f)

The pillow becomes a mediator of thoughts the couple is unable to convey directly:

"Those words, if you said them into the other's face, may be hurting. [...] so I used this pillow for these words and said them indirectly." (C1.f)

This highlights that technology-mediated experiences are not per se inferior to unmediated. It is a matter of situation. For example, the asynchronous exchange provides time for reflection, which is helpful in case of a quarrel.
"The pillow was very useful for our communication. We took our time to think about the other's messages. This wouldn't have worked, when talking face to face" (C1.f)

The pillow created a second, almost "hidden" communication channel, useful for all the words that are difficult to spell out face-to-face.

"We actually never talked about the messages we left in the pillow. That's very special. [...] But we just felt that we had understood each other" (C1.f)

While only C1 reported using the pillow as an alternative communication channel to resolve difficult situations, they did this on top of using the pillow in a more lightweight, romantic way. Other than C2 and C4, who rather "misused" the pillow, C1 appropriated it in line with the pillow's general function as a communication tool.

**Failure to provide a meaningful experience**

C5 developed no usage practice and no meaningful experiences emerged. The man reported a fast decline in emotionality:

"The first message was very interesting. But over the time, it didn't affect me anymore" (C5.m)

This was not shared by the woman. While C5.f liked using the Whisper Pillow for expressing her emotions, C5.m outright refused to engage in the suggested practice, since it did not feel "right" to express emotions through an object.

" [...] for me, the problem is about the object. I was thinking about whether I really want to use this medium for expressing my feelings. The pillow is one way, but for me, expressing emotions without words can be even more emotional. [...] Also we are rarely separated. Leaving a message for her, though she was sitting next door felt a bit too artificial" (C5.m)

His wife felt quite different about this:

"My emotional problem was [...] his disappointing reaction to my emotional messages. He actually asked me why my messages were all the same. [...] I just feel that some words need to be repeated" (C5.f)

While C5.f's messages were actually an act of self-disclosure and intended to be acknowledged as such, C5.m searched for factual information, and, thus, was complaining about a lack of "new" information: "I love you" – "I already know that" subsumes this. This is a mismatch described by Schulz von Thun [26] in his theory of communication. He argues that each communication consists of factual information (what is said), self-disclosure (what we say about ourselves), appeals (what we expect from the other), as well as information about the relation between sender and receiver. If the receiver focuses on another aspect than the sender, as it was the case for C5, communication is experienced as unsatisfactory. C5.m was looking for the facts or the novelty in C5.f's pillow talk. The resulting experience was neither satisfactory for her nor for him.

All in all, three couples (C1, C3, C6) established practices of emotional expression (in the sense of self-disclosure) suggested by the pillow. C1 even found an additional way to use the pillow in the difficult situation of a quarrel. For the remaining three couples (C2, C4, C5), the pillow did not unfold its meaning. C2 and C4 used it as a "toy". While they still found it an amusing means to engage in their relationship, they focused on stimulation and creativity, and only occasionally referred to romantic feelings. C5 failed to establish a practice through the pillow, thereby demonstrating the limits of experiential objects. While they at best have well-designed, seductive powers to involve people in worthwhile practices and experiences, they haven't been involved in before, they cannot coerce them. C5.m saw no value in the pillow's experience, and the pillow never came around to fully clarify its proposition.

<table>
<thead>
<tr>
<th>Usage Practice</th>
<th>Emotional Expression</th>
<th>Joint Action</th>
<th>Alternative Communication Channel</th>
<th>No practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Couple</td>
<td></td>
<td>C1</td>
<td>C2</td>
<td>C5</td>
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<tr>
<td>Daily Routine</td>
<td>low</td>
<td>high</td>
<td>high</td>
<td>low</td>
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<td>Correspondence</td>
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<td>Low</td>
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<td>high</td>
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Table 2: Three Practices of experiences in the use of Whisper Pillow
CONCLUSION
Existing communication technologies predominantly focus on more and more information (e.g., videos, pictures, current status etc.), but fail to acknowledge differences between particular types of messages and the actual way they are composed and consumed. Research on technology-mediated relatedness, however, emphasizes the importance of the resulting experience [11]. Nowadays, the challenge is not the technology, but a better understanding and anticipation of the impact of subtle differences in functionality, form, and interaction on resulting experiences. Some recent celebrated innovations, such as Snapchat, an instant messaging system which deletes messages after the sender viewed them, can only be understood from an experiential perspective. Even though little challenging from a technological perspective, the simple feature of has a huge impact on emerging experiences. As the marketing department of Snapchat puts it: "The image might be a little grainy, and you may not look your best, but that's the point. It's about the moment, a connection between friends, and not just a pretty picture."

The case of the Whisper Pillow is another example of how a simple technology for exchanging short audio messages creates and mediates complex emotional experiences. Its experience-oriented design did not focus on novelty or a "fascinating" technology, but on the desired experience to emerge. Functionality (i.e., voice messages, number of messages held, sensitive microphone), form (i.e., pillow, inflation/deflation) and interaction (i.e., speaking into a pocket) were all deliberately chosen to shape a certain "feeling", to create the experience of closeness, relatedness, togetherness through the practice of frequent emotional expression. This sensitivity to details with respect to their potential impact on experiences is an important aspect of Experience Design [10].

While our study cannot unequivocally answer the question of whether the attention to detail is as crucial as claimed, it at least demonstrates that experiences deliberately "inscribed" into artifacts can unfold through interaction. Three of the six couples engaged in the practices suggested by the pillow and found them meaningful and pleasurable. At the same time, the study hints at potential limits of designing experience. Two of the couples (C2, C4) "misused" the pillow. Instead of leaving messages for each other when being separated, they used the pillow as a prop in a game-like interaction, focusing on stimulation and surprise. Another emerging practice was to use the pillow as an alternative when face-to-face communication felt difficult and prone to even amplify negative emotions. Both practices appear meaningful, albeit no having been "inscribed" into the pillow. They emerged from user's appropriation.

Finally, one couple completely ceased using the Whisper Pillow. While the majority of participants felt that it offered an appropriate way of emotional expression, for C5.m, the pillow did not "feel right". Consequently, it was impossible for C5 to establish a meaningful practice, satisfying for both partners. Obviously, the pillow can only suggest a "healthy" practice, but cannot coerce people into submitting themselves to it and the resulting experiences.

The additional practices observed in the study (and the single failure) go beyond what we anticipated as designers. Even if design strives for inscribing particular experiences, practices, and meaning into an object, users will always appropriate. As Verbeek [30] argues "designers cannot simply inscribe a desired form of morality into an artifact. The mediating role of technologies is not only the result of the activities of the designers, who inscribe scripts or delegate responsibilities, but also depends on the users, who interpret and appropriate technologies, and on the technologies themselves, which can evoke emergent forms of mediation." Thus, we not only need to define intended experiences and inscribe them into the material, but also need to get aware of further appropriations and resulting experiences through empirical studies. The very fact that people may use a design other than intended, does not relieve us from assuming responsibility at least for the experiences, we intended.

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REFERENCES


