Interfaces with the Ineffable: Meeting Aesthetic Experience on its Own Terms

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A variety of approaches have emerged in HCI that grapple with the ineffable, ill-defined, and idiosyncratic nature of aesthetic experience. The most straightforward approach is to transform the ineffable aspects of these experiences into precise representations, producing systems that are well-defined and testable but may miss the fullness of the experienced phenomenon. But without formal models and codified methods, how can we design and evaluate for a phenomenon we aren't sure can be adequately captured? In this paper, we present a case study of a system for reflection and awareness of emotional presence. Through system design, use, and evaluation we recount how the system evolved into something that enhanced rather than impoverished the sympathetic awareness of another. In discussing the strategies and results of the case study, we examine what it means for the HCI community to not only design for aesthetic experiences but also bring aesthetics into the practice of HCI.

1. INTRODUCTION

Aesthetic experience is bound by the ineffable: indescribable and irreducible aspects of being. Although various philosophical schools of thought have attempted to define aesthetic experience nature or outlined its components [e.g. Dewey, 1934; Hume, 1740; Kant, 1952], most maintain that it cannot be fully understood through rational explanation but must be lived. Common characteristics across these incomplete definitions suggest that aesthetic experiences are tied to the particular, invoke the senses, command an immersion of the whole self, and result in a heightened form of engagement.

It is not surprising then that as the technology agenda moves from a primary focus on designing for instrumental tasks to designing for a fuller range and richness of lived experiences, the HCI community is beginning to draw on aesthetic principles [e.g. Gaver, Beaver, and Benford, 2003; McCarthy and Wright, 2004; Pold, 2005]. For example, McCarthy and Wright [2004] draw on the aesthetic
philosophies of John Dewey and Mikhail Bakhtin to call for technology
designs that acknowledge the “irreducible totality of people acting,
sensing, thinking, feeling, and making meaning in a setting.” (p.54)

Similarly, in a recent book outlining the emergent field of ‘Aesthetic Computing,’ various authors argue for not only designing
technology for aesthetic experiences but also drawing from aesthetics in
technology practice. Fishwick [2006] suggests that artists, versed in
understanding the aesthetic experience, have often assimilated and
adopted technology into their practices, for instances using new media
to present innovative forms of interaction or to create art in new ways.
Yet, he argues that the reverse direction of technologists drawing on the
arts is less prominent, though certainly on the rise [e.g. Gaver, 2001;
Mitchell, Inouye, and Blumenthal, 2001; Sengers and
Csikszentmihályi, 2003; Wilson, 2002].

Indeed, the possibility of turning to aesthetics to deepen our
engagement with lived experience is an exciting opportunity, but a
truly successful integration into HCI demands a degree of critical
reflection on the fundamental differences between an aesthetic orientation
and the rationalistic orientation which often underlies HCI work. The
most obvious initial approach to aesthetic experience would be to apply
familiar, legitimized HCI methods to this new, aesthetic domain, and
use them to create the kind of knowledge commonly valued in HCI:
general principles, formal models, relatively context-independent
methodologies, and taxonomies of experiences and technologies.

One suggestion of the limitations of such a formal, rational
approach to understanding lived aesthetic experience draws on the
legacy from Computer-Supported Cooperative Work (CSCW), which
suggests that formal, general models often leave something critical
unaccounted for. Suchman [1993], for example, has highlighted how
formalizing activity into the kinds of pre-defined plans or scripts that
easily lend themselves to programming misconstrues the flexible and
situated nature of how we participate in and make sense of the world
using plans. Similarly Winograd and Flores [1986] critique computing
design that follows impoverished models of knowledge represented
formally as "the acquisition and manipulation of facts, and
communication as the transferring of information" [p.78]. The overall
message of such work is that despite the appearance of stable and readily identifiable practices, the actual experience of work and knowledge production is more nuanced and situated than codification allows for. Current research interest in aesthetic experiences outside the workplace – often characterized as messy, particular, and idiosyncratic - further calls into question the limits of the codification approach [e.g. McCarthy and Wright, 2004; Sengers, Boehner, Mateas, and Gay, 2006].

With respect to aesthetic experience, however, there is a deeper danger to codification and generalization: it may do away with precisely the phenomenon that was originally of interest. In generalizing, codifying, and abstracting from specific, embodied contexts, many of the ineffable aspects of the aesthetic experience, i.e. those escaping formal articulation, may be either overlooked or designed away. Furthermore, rather than drawing aesthetic practices, such as working from the singular or valuing uncertainty, into computing design as Fishwick suggests, the influence would be in the opposite direction, with traditional computing values of predictability and accuracy reshaping these aesthetic values. If we take aesthetic experience as an irreducible, lived event that cannot be fully understood at a rational, formal level, then it must be met on its own terms. If the aesthetic experience is by nature irreducible, then we should design, code, and evaluate systems in ways that do not primarily reduce complexity and reify abstract categories of practice.

In this paper, we build on these trends to explore how to systematically design and evaluate a system for aesthetic experiences without seeking to contain it through formalization. Although we recognize that codification plays an important role in knowledge production and that we never escape it completely, we seek ways to balance codification with a respect for what it leaves behind. How possible is it to design for an ineffable experience without defining and constraining it? Is it possible to evaluate for ineffability when we don't have a well-defined hypothesis for “what works” to test against?

The main body of this paper will explore these questions through a case study of designing for the ineffable experience of emotional connections between people. While our initial design and evaluation
approach was focused on moving beyond the codification of emotion to
deeply explore personally meaningful emotional experience, we
frequently found ourselves in practice pulled by existing HCI
conceptualizations of communication back into a mode of codification,
and finding the system experience impoverished as a result. We
describe the aesthetic orientation we eventually came to – a shift from
communicating emotion to supporting an ephemeral sense of
‘sympathetic awareness’ - and how it shifted our goals for the system,
our methods and their interpretation, and even the details of the code.

[insert figure 1 here]
Figure 1. The Affector Display

2. APPROACH

Our target domain for this case study was the workplace, not
commonly seen as a target for aesthetic design. We wanted to
highlight that the workplace is a site not only for typical utilitarian
goals such as supporting productivity or enhancing collaboration, but
also for personal emotions and friendships. Over the last two years,
while author Boehner led system evaluation, authors Sengers and
Warner designed, built, and lived with Affector, an ambient video
window intended to communicate a sense of each other's respective
moods. Affector consists of a video display and camera mounted on
each side of an adjoining office wall (see Figure 1). The camera feed
from each side is systematically distorted (see Figure 2) and then
displayed on the other. Distortions were chosen both to preserve
privacy and to make the images more evocative in a manner similar to
the work of Dunne and Raby [1994] or Karahalios and Donath [2004].
In this section, we describe the theoretical grounding for Affector and
the strategies we initially used to move beyond codification in both
design and evaluation.

2.1 From Representation to Response

Affector's design, with its focus on the ineffability of personal
experience, was initially motivated by issues in affective computing,
i.e. technologies that sense, respond to, and express emotions [Picard,
1997]. As we have described elsewhere [Boehner, DePaulo, Dourish,
and Sengers, 2005; Boehner, DePaulo, Dourish, and Sengers, 2007; Sengers, Boehner, Mateas, and Gay, 2006], affective computing frequently works on a model of emotion-as-information, in which emotion is seen as well-defined informational bits to be extracted, processed, and transmitted by computers. Despite the undeniable usefulness of this model, its very preciseness often misses the enigmatic nature of emotional experience [Sengers et al., 2002]. Emoticons, for example, are useful shorthand, but as a (usually small) set of discrete states they cannot fully address the rich interpretations, understandings, and experiences of emotions expressed by users. Building a system for emotional communication that could support these richer kinds of interpretations required a more fundamental thinking-through of how computers relate to and can be designed for the human experiences that arise around them.

One solution we have found useful for breaking out of the closed world of codification is to shift primary focus from the system's internal representations to users' interpretations and experiences around the system. Our goal for design then shifts from systems that accurately acquire, represent, and reason about human activity to ones that respond evocatively to human activity, providing new opportunities for users to have, interpret, and reflect on their own experiences. Yes, systems codify, but their representations become 'un-codified' through the complex, situated interpretational apparatus users are able to bring to their output. Our goal in evaluating these systems shifts from measuring how accurately systems can track and communicate human activity to how design choices support certain kinds of interpretations and experiences in real-world contexts.

As Johann van der Schijf suggested in remarks at DIS 2006, such systems can be thought of as inducing a ‘negative space’ of activities around them. In art and design, positive space refers to what is created, while negative space surrounds the designed object. In these disciplines, this space is considered to warrant as much - and sometimes more - design attention as the object itself. Similarly, design work on systems in the style we suggest here focuses primarily on the activities, experiences, and interactions that arise around the system, rather than on what the system can do by itself, divorced from
its context. This is not an abdication of computational design, but a reframing of the design problem; rather than representing users, such systems respond to user activity, setting up an open-ended conversation through which experiences are co-constructed with input from users and machine.

In the next two sections, we describe the strategies we initially selected to move beyond codification in the Affector design and evaluation based on this theoretical understanding. Subsequently, we will unpack how those strategies became re-codified in practice, then moved us through use towards an aesthetic orientation.

2.2 Beyond Codification: Design Strategies

On the surface, Affector looks like an ambient display [e.g. Dey and de Guzman, 2006; Pederson and Sokoler, 1997] for emotional communication [e.g. Angesleva, Reynolds, and O'Modhrain, 2004; Chang et al., 2001], and indeed such work inspired us. But, following from our reflections on the limits of codification, the central goal for Affector was not to support the identification and transmission of emotional information through the system, but to support situated human emotional meaning-making around it. This led to several new, central design strategies.

1. Emotions without representation. As a step to avoid the lure of codification, Affector maintains no internal emotional model intended to be fully representational of emotional experience. In this move, we were inspired by Brooks’s notion of ‘intelligence without representation’ [Brooks, 1991], or the idea that systems can appear to engage in complex behavior around a topic without having any direct representation of that topic, instead using fairly simple stimulus-response rules. In Affector’s case, rules map sensed conditions in the video feed such as light level, motion, or skin color to distortions applied to the video feed. The rule set is maintained and modified by users themselves, tuend by them to gradually approximate their sense of what the system can usefully tell them about each other.

2. Situated emotion. Affector was intended as an additional channel that would allow for extra meaning-making, not a channel carrying the entire burden of emotional communication. This
perspective allowed us to under-design Affector, as its shared physical context afforded many opportunities for interaction beyond the system. Through the ambient situatedness of Affector, users would over time come to correlate changes in the system's output with external experiences that would suggest how the system should be read.

3. Intermediate abstractions. By employing a range of dynamically produced video distortions, Affector moved away from simple one-to-one mappings of emotional information to symbolic codes such as set avatar expressions or color changes on an ambient display. Video distortions can convey symbolic meaning - different distortions suggest that different situations are at hand in the others' office - but they also allow richer potential for meaning-making to 'leak through.' A dark shadow in the background could be recognized as visitors arriving, for example, while posture, movement, or facial expression could provide additional nuances of meaning.

4. Autobiographical design. The ineffable eludes definition; yet we know it when we experience it. For this reason, we chose to follow the footsteps of the early media space work at PARC [e.g. Dourish and Bly, 1992] and reflectively design for ourselves, and so explore nuances of experience without needing formalized measures to recognize them. Designing for oneself is a problematic methodology in HCI, for good reasons; surely, one of the goals of HCI is to get us away from the idea that if the designer likes it, everyone else will too. Our goal with this system was less to design something we would like - though that should, of course, be a minimum criterion for a plausible system - than to critically reflect on our experiences with the system, to plumb their nature and how they relate to design choices, and use them to continually push the system design in new, perhaps unexpected directions. This connected design of the system, inevitably and continually, with evaluation.

[insert Figure 2 about here]

Figure 2: Samples of Affector Output

2.3 Beyond Codification: Evaluation Strategies

Just as our design strategies reflected a concern with maintaining contact with the complex, elusive aspects of emotional experience, so
too were our evaluation strategies designed to move away from codifying experience and towards exploring its felt dimensions. This required modifications to both what was measured and how measurements were interpreted.

A codification approach to evaluating Affector might include walking into Sengers' office and asking, based on the Affector display, how Warner is feeling, then verifying this assessment with Warner. In addition, we could establish a baseline measurement, such as a survey determining each one’s overall perception of the other’s moods or logs tracking face-to-face interactions prior to installing Affector, and then comparing these baseline measures to those taken with Affector installed. We might also use a comparative condition, for instance, testing an undistorted video window between their offices against the use of Affector. In a codification approach, and in a typical HCI evaluation of system design, all of these strategies could then be used to make summative statements about the Affector system.

In fact, variations of these methods were employed, but with different focus and interpretation, since evaluation did not start from assessing binary success or failure from a priori metrics, instead drawing out from Sengers’s and Warner’s experience what Affector was when it was working. Our methods were driven by two primary considerations:

1. **Providing stimuli for ongoing reflection.** Each of our evaluation methods, including usage information, tracking face-to-face interactions, interviews, observations, and focus groups were designed as prompts for Sengers and Warner to reflect on and articulate goals and experiences with the system over time. One such set of reflection stimuli was ‘dynamic feedback:’ usage information, available not just for the evaluator to assess for significant differences, but available as prompts to Sengers and Warner for identifying what patterns are meaningful and what usage information should be collected in the first place.

2. **Supporting multiple narratives.** Sengers and Warner used the reflection stimuli independently and collaboratively to narrate Affector use and development, in a sense supporting autobiographical evaluation. However, the same cautions with regards to
autobiographical design apply – namely the danger that reflections will be limited to confirming original conceptions and goals. Therefore, these same reflective prompts and the sense that Sengers and Warner made of them were available for outsiders, including Boehner and her team, but also to visitors who provided informal assessments of how Affector did or did not work. In this way, the evaluation process elicited multiple interpretations of the Affector experience.

2.4 System design

Each Affector window is a stand-alone unit, housed in a bespoke wooden frame containing a 7” display, running a Java process that continually checks for rule set updates, runs each rule in the rule set until it finds a match with the current situation, then processes and renders the associated distortion. Both windows run the same ruleset, but they may show different distortions depending on what is happening in each office. Each rule set consists of if-then rules that test for conditions in the sensed image, such as skin color, movement, or light level, and specify distortions to be used when those conditions match. A set of basic distortions is supplied by Affector, such as pixelization, inverting colors, or making the image black and white; these distortions can be recombined by users into new distortions. The displays are controlled by users over a web interface where they edit rulesets and record their thoughts and experiences into a diary accessible to the system evaluators.

3. REFLECTIONS IN USE

The Affector system has been running for 2 years. Most of the time, Affector runs ambiently as a background resource in daily activities: its users often consult it on coming into the office to see if their companion is there or keep a look out for his or her arrival. Much of its use is through ephemeral glances. Changes to the rule set are made fairly infrequently, generally once a day, sometimes once a month. The distortions chosen are typically abstract, giving little detail of behaviors or of facial expressions, but enough to get a sense that someone else is there (see Figure 3).
We have published [Sengers, Boehner, Mateas, and Gay, 2006] initial results from an earlier version of the system, Affector v1.0. Based on these experiences, we then substantially redesigned, rebuilt Affector v2.0, then lived and tinkered with it for two months of intensive, interleaved use, redesign, and evaluation; we report results from this new stage here. This close coupling of use, design and evaluation makes reporting on Affector results difficult as it does not fit the traditional linear report of goals, methods, results, and discussion typical for scientific reporting.

The following results are from the perspective of the evaluation team, drawing on data collected: direct quotes (shown in italics), summaries, artifacts from interviews (such as sketches of use – see Figure 4), diaries, focus group sessions, and observations. This presentation stands as a counter to the danger of autobiographical design simply confirming that the system worked as expected. As we draw out below, while the designers did experience some aspects along expected lines, in other cases they found unexpected experiences of Affector more compelling than the ones they originally imagined. Indeed, these unexpected experiences led directly to an understanding of the centrality of aesthetics, both as part of system design and as a way to understand what Affector does. We begin by presenting several readings and mis-readings of Affector, then discuss how these led to a refined concept of Affector as a system for sympathetic awareness.

3.1 Reading and Mis-Reading Affector

Comments from outsiders to the study who visited Sengers or Warner and witnessed the Affector system prompted reflection not just about how Affector works but also for whom. One visitor to Warner’s office, for example, thought Affector was great, but suggested adding an audio channel that would allow Warner to initiate collaboration with Sengers without having to leave his desk. This suggestion would push Affector toward some of the original media space design [e.g. Dourish and Bly, 1992], making it a new channel for informal conversations and priming for remote collaboration.
However, in several discussions, Sengers and Warner underscored that they are not trying to communicate 'through' Affector. They may occasionally wave to one another or even signal approval of new distortions with a thumbs-up, but they do not see Affector primarily as a channel for direct communication but for background awareness. Secondly, they stressed from the beginning that the system is not intended to enhance productivity or efficiency. Finally, they argued Affector was not a ‘buddy icon’ communicating clearly whether or not they were available for further conversation. Although they originally imagined the system might increase their face-to-face social interactions, the impact of Affector on their face-to-face interactions quickly felt like an unimportant metric. As Sengers stated during a focus group session:

*I don't think the point of the system is the increased interaction. I do think that if I want to interact with Simeon, I can tell handily if it's a good time or not. It's also handy for those days when I want to talk to Simeon and I can see when he comes in. So that seems to work but it's less important. What has become more interesting isn't if there is an opportunity for an offline interaction but just this sense of having another person around.*

Another visitor looked at the display of Warner, and commented: *Well not knowing how to read the system, I'd say he looks grumpy.* Sengers did not confirm or deny the visitor’s assessment but instead shifted focus by replying: *I like this distortion because it induces daydreaming.* For Sengers, it was not important if Warner could be read as grumpy or not. In interviews, Sengers and Warner indicated striving for vague, inexact views of what is happening. Warner articulated this as *mixing aesthetics and information to build up a kind of intrigue.*

The comment also highlighted the critical aspect of familiarity with the other, the context, and the system. The visitor acknowledged that he didn't know how to read the system – and this admission points to a critical aspect of Affector’s functionality. Part of how Affector works for Sengers and Warner is through living with it for over two years, and their development of practices of reading Affector in context.

Attempting to decode discrete affect from the window is perhaps the most immediate interpretation outsiders bring to Affector; the question
most often asked is “where is the affect?”. At times, this has caused Sengers and Warner to wonder whether they had simply created a low-resolution video window. As reported previously [Sengers, Boehner, Mateas, and Gay, 2006], this led them to conclude that highlighting nuances of movement, e.g. showing trails of activity, would take them a long way toward depicting emotion. As the movement distortions improved, Sengers commented on how individually characteristic movement is, and that Affector felt different when visitors sitting at Warner’s desk produced a qualitatively different feeling in the Affector window. The uniqueness of movement patterns led to very personal displays.

But this focus on movement as a proxy for emotion presented challenges in terms of codification. Once movement was identified as a meaningful index of emotion, it was tempting to try to decode movement as a symbol of emotion. This would make movement a representation of emotion in similar ways to systems that represent identified emotional states through proxies such as heart rate or word choice. This, indeed, became for a while a major motivation of the design process, with Sengers and Warner seeking out signs that particularly indicated a particular emotion and which the system could highlight. Yet Sengers and Warner discovered that when they did this, the use of Affector became a cognitive exercise that quickly lost their interest. In other words, when they caught themselves watching the display, wondering what movement triggered a particular effect, then wondering what that movement signified emotionally, this was less enjoyable than when the window provided a sub-symbolic or visceral sense of the other.

In clarifying why highlighting movement and its relation to affect was important to him, Warner stated:

You may become aware that someone is having a busy in and out day or having a work day or a restful day - there seem to be various things you might become aware of in the system but you're not going to know what it means and that's fine. That's good. It just gives you a hint of connectedness.

A final example of an outsider’s misreading arises from Boehner's own interpretations of the system. During the evaluation sessions,
Boehner often played devil's advocate to provoke rethinking of Affector. For instance, she suggested including a 'recall' button so that if something noteworthy happened in the display they wouldn't miss it, even though this violated the goal of designing an ambient system. Sengers and Warner vigorously attacked the recall button idea, suggesting that the potential to miss things was a value in the system, in part because it raised the emotional reward of noticing something happening, and that an emotional sense builds up through serendipitous moments in time, not through constant surveillance.

On another point, however, Boehner presented a contrasting interpretation of Affector not to play devil's advocate but because she was certain that it would happen. She believed Sengers and Warner would develop their own emotional language and start to express emotion through their selection of distortions. She imagined a scenario where Sengers might think "I'm feeling kind of peppy. I'll choose a peppy look for Affector" and then Warner could learn to read her mood through the distortions she chose to illustrate it. In this way, Boehner saw Affector working like eMoto [Sundström, Ståhl, and Höök, 2005], a system where users gesture to add emotional shades in multimedia SMS’s. Yet this did not happen. For example, although they took daily turns editing the distortions, rather than making individual choices to express personal mood, they tried to figure out and build on what effect their partner had been working on the previous day. In focus group sessions, they explained that they wanted to converge on interesting effects that Affector could eventually trigger autonomously, depending on environmental and presence factors.

A second difference from eMoto and its fixed palette of effects is that Sengers and Warner wanted more flexible expressiveness. During one focus group session, they concluded that distortions allowing for combined effects or layering would allow them to move away from the effects originally coded into the system to novel ones that were meaningful to them in practice.

Finally, and most importantly, Sengers and Warner believed Affector had become less about directly expressing emotion and more about inducing emotion, developing a sense of connectedness through fleeting, emotionally evocative hints. As Warner put it: We're trying to
create feelings in the viewer, which may be different than the feelings of the viewee.

3.2 Re-Reading Affector

Based on the previous experiences, readings and mis-readings of Affector, Sengers and Warner evolved their understanding of how Affector worked and should work. In one focus group session, Sengers and Warner collaboratively sketched a model of Affector compared to a more typical affective communication system (see Figure 4). In doing so, they highlighted several points of difference described below: some revealed additional nuances of the original design principles, while others uncovered new expectations and directives.

![Figure 4: Sketch of Salient Affector Characteristics](image)

3.2.1 Beyond the Window

In describing their model, they reiterated as a critical difference from affective computing the centrality of context for how Affector works. They did not communicate primarily through Affector; instead, Affector became part of their daily interactions. In reflecting on their attempts to read discrete emotion into Affector and their preferences for reading ‘hints,’ they rethought the nature of emotion more generally. In various interviews, they described a sense of emotional presence as subtle and fleeting, building over time: something, therefore, that you do not assess simply by staring at another person and trying to read them. In day-to-day interactions, people do not often think “now I’m communicating emotion” or “now I’m trying to interpret the emotional content of your message.” Emotion is not so easily boxed off. Affector became absorbed into, instead of directly communicating a sense of, the emotional climate.

They also noted in their sketch that it was tempting to focus on the Affector window as defining the system, but that they experienced Affector equally through diarizing and altering the rulesets in the web interface. Whereas the Affector window was not held in common, the Affector editor supported building a shared view of each other’s actions.
In fact, as we will explore later, the evolution of the Affector editor proved to be critical to how they engaged with the system.

3.2.2 Experiencing versus Acquiring Information

The second major difference highlighted in Sengers and Warner's sketch refers to the previous discussion about Affector inducing as opposed to expressing emotion. They described this as the difference between the sender expressing and the receiver decoding affect versus both parties focused on the experience of affect.

*Understanding and information transfer are not the same thing,* Sengers declared in one focus group session. As she wrote in the diary, *This is one of the things behind highlighting movement - it's one thing to highlight in the sense of gee, a movement must just have happened, it's another to highlight so that the movement itself becomes more noticeable or legible.* She later framed this as designing not for the acquisition of information but for the experience of information about the other, illustrating this difference through the recall button idea. The recall button would turn information about activity into information to be recalled at will, whereas when this information is experienced as it happens it draws additional meaning from the richness of the surrounding context.

3.2.3 Primacy of Aesthetic Factors

Finally, in describing their model of Affector, both Sengers and Warner highlighted the importance of aesthetic factors in shaping the experience of affect in both the display and the control interface. Referencing the recall button example, Sengers argued that replaying past activity would be boring but expressing past activity through ghosts or trails could be experienced as intriguing. Compared to their initial conceptions, both Sengers and Warner elevated aesthetic factors to an important driver in Affector’s success. For example, Sengers indicated that she wants the display to be evocative even when Warner is not in his office. She explained in a focus group session: *Having something that’s attractive that runs in the background, that doesn’t look like someone’s office but something you want to have around as part of the space, is actually an important part of what it does.* Although they had always wanted something that would look interesting, in practice, they realized that, while they did not create a
shared emotional language, they were creating a shared aesthetic language driven by how Affector made them feel.

3.3 From Reading Affect to Sympathetic Awareness

This sense that the aesthetics of the interface had moved from a nice-to-have aspect to a central element in how the system worked reflected a more fundamental shift in the designers’ orientation to the system. This was not limited to the look-and-feel of the system, but to their very conception of what the system should do. The original framing of Affector reacted to affective computing’s common benchmark of success: i.e., when the affect expressed by the sender is the affect decoded by the receiver, where sender/receiver are human or machine. The designers originally modified this goal from decoding affect to co-interpreting affect. However, this language still could suggest that the desired end result is a single, shared interpretation of one another’s affective states. What Sengers and Warner instead came to in their refined model of Affector is the goal of creating an aesthetic experience of affect through an evocative representation of general goings on which discloses ambiguous hints of affect [Gaver, 2001; Gaver, Beaver, and Benford, 2003]. This experience of affect in turn, they thought, would support the ultimate goal of developing a sense of camaraderie.

This change is illustrated in the following exchange while they explained their model (see Figure 4)

P: It’s not realistic to say that the viewer would have some understanding of the other’s affective state.
J: Nor is it desirable.
P: We might have hints of what is going on...
J: …And that’s what we want.

Even if they could accurately model each other’s emotional state, this was not seen as desirable. Instead, when describing what motivated their decisions in crafting rule sets, Sengers and Warner talked about the look and feel of the display for themselves, not what they wanted to express to the other. As Sengers stated: It’s a lot more about what you want to see than what you can express. Rather than thinking about what message or expressions they were sending out, they concentrated
instead on creating expressions of the other’s activities. It was a flip from 'me expressing myself to you' to 'me expressing you to myself'.

This subtle but crucial difference reflects recent theories in communication, which reframe communication from arriving at a common, agreed interpretation to experiencing the other. As Shepherd [2006] argues, we aim through communication not for “accurate interpretations” of the other, but for understanding as “sympathetic awareness” [p.24]. As Peters has argued, the importance of communication is the possibility of meaning, rather than set meaning: “There are no sure signs in communication, only hints and guesses” [p.268]. Having 'hints and guesses' of the other characterizes the kind of experience Sengers and Warner came to find central.

This sort of communication moves beyond the information-conduit metaphor that underlies much of HCI [Day, 2000] towards a hermeneutic orientation. As Heidegger [1990] writes, “‘Communication’ in which one makes assertions – giving information, for instance – is a special case of that communication which is grasped in principle existentially. In this more general kind of communication, the Articulation of Being with one another understandingly is constituted. Through it a co-state-of-mind [Mitbefindlichkeit] gets ‘shared’, and so does the understanding of Being-with. Communication is never anything like a conveying of experiences, such as opinions or wishes, from the interior of one subject into the interior of another.” [p.135]

These theoretical and philosophical perspectives on communication do not deny that information is transmitted. In Sengers’s and Warner’s experience with Affecto, they did ‘transmit’ information through the window – for instance when they check to see if the other is around or when they recognize that the other has assumed a familiar posture that generally indicates ‘working’ or ‘relaxing.’ What the subtle shift in perspective suggests however is that the transmission of information is a secondary aspect of their communication. Rather than sympathetic awareness being the ‘nice to have’ by-product of accurate transmission of information, sympathetic awareness became the primary goal. Although supporting communication as information transfer tends to be the most common (and perhaps easier) to design for and codify, for
Sengers and Warner, it was more important to design for the more vague but meaningful notion of sympathetic awareness of the other.

The central role of aesthetics in Affector, then, was not simply to make the system nicer to have around. The evocative, enigmatic nature of the distortions supported a felt shift in the role of the viewer. Rather than encoding emotions which could easily be read, the images suggest that there is something intriguing going on, but that its interpretation is up to the viewer. It invites the viewer, not to know, but to look, to wonder, and to feel.

4. CHANGES IN VIEW, CHANGES IN CODE

In this section, we return from the evaluator’s perspective to describe how our changing understanding of Affector had direct impact at the code level, in supporting both use and evaluation. Here, we organize the changes in code around the three refined viewpoints discussed above and describe the co-articulation between code changes and reactions in use.

4.1 Beyond the Window

As discussed previously, we recognized that the experience of Affector could not usefully be thought of as boxed off into its window display. From the beginning, Affector's web interface included a diary, which participants used to record their experiences. Initially, both this diary and logs tracking editor use were only readable by the evaluators. We realized, however, this violated the dynamic feedback principle that collected data should be co-interpreted with users. With Affector v2.0, we made the diary and usage logs readable by all project members, and featured the diary on the system’s home page.

We anticipated these changes would be valuable for evaluation, and, indeed, the ability to re-read and reflect on one's own and others’ previously recorded comments led to a substantial increase in the quality and quantity of entries. We not only recorded and analyzed our own experiences; we read and responded to each others’ entries, made announcements to each other about what we were doing to the rule sets and why, and commented on what we thought of each other’s rule sets.
Indeed, given the lack of simple mappings from emotion to representation, a major challenge that Affector poses is to make sense of what it is doing, and the shared diary’s support of this sense-making became an important function of the web interface.

Another channel for communication was added half-way through the 2-month Affector v2.0 user test: the ability to take and annotate snapshots of the system output. We recognized that experiences of the system were essentially tied to its visual output, and that it would be useful to record images and their situated meaning at desirable moments. When we saw something we found interesting, we clicked on a camera icon that appeared on every page; this uploaded a thumbnail image from the window and displayed it to users with a form to add commentary.

The picture module led to a sharp increase in comments added to the system; whereas we had made an average of 2 diary entries per workday previously, after the picture feature was added, we made an average of 7 entries each day. With this shift came a shift in the type of comment made; previous diary entries tended to reflect what was generally happening during the day, while the picture comments often captured detailed, specific moments of reflection in response to what Affector was showing (see Figure 5). The lightweight and situated nature of taking and briefly commenting pictures felt like a better match to the ambient nature of Affector; one could notice something interesting and quickly comment it without greatly interrupting one's other activities.

4.2 Experiencing Versus Acquiring Information

The most important shift in our thinking was moving from emotion communication to sympathetic awareness. In the process, we became less interested in how Affector could express emotion, than in how it could express a variety of indicators that can be read emotionally. In other words, Affector should transmit video that would suggest emotional meaning to users, though that meaning might not
consist of simple identification of the partner’s emotional state. Our goal for Affector’s design became to find ways to support this more complex reading. As described previously, one method was to highlight movement, bringing it to conscious attention for interpretation; at the code level, this led to new sensors tracking motion and new distortions useful for drawing attention to it. Two more general themes derive from this principle.

4.2.1 Visualizing sense data

In Affector v1.0, the system used sense data to select distortions, but did not display what it sensed directly to users. We realized that the information Affector was using to select distortions might be just as useful, probably more so, if displayed directly to users for their own interpretation. For example, it might be less interesting to know that 10% of the pixels have moved, than it would be to see which areas of the image have moved. It would be even more interesting if Affector could highlight the moving areas by brightening them, while toning down still areas. This would move a further step from codification, shifting from using sense data to classify input images to presenting the complexities of sense data for users to interpret themselves.

This insight led to a major redefinition of the language used to define rulesets. Whereas previously rulesets were simple if-then rules mapping sensors to distortions, for example “if the average light level > 20 then invert the colors of the video,” we now recognized that any sensor could also be a distortion, constructed by displaying the value of each sensor as grayscale for each pixel in the image (see Figure 6). Conversely, any distortion could be used as a sensor, by taking the average, maximum, etc., grayscale value of its pixels. Sensors and distortions became the same thing, which we termed filters.

[insert Figure 6 about here]

Figure 6: Movement data visualized as greyscale

With this unifying representation, we could develop a language construct that combined filters for visualizations of sensed data. This “where” construct uses sensing to select areas of the image to apply different filters. For example, “where skin color > 0 pixelate, otherwise show edges” pixelates the parts of the image where skin color is
detected, and only shows edges in the rest of the image (see Figure 7). Complex data could now be represented directly in the Affector feed in visually intuitive ways.

[insert Figure 7 about here]

Figure 7: Pixelization where there is skin color

4.2.2 A sense of presence over time

Affector v1.0’s representations of user activity were based entirely on the present. Simple readings of “what's going on now” were possible; but we felt that our desired more complex reading of ‘general goings-on’ would require an awareness of situations over time - has Simeon been in and out, has he been sitting still a lot, when did he last have a visitor? We discussed this in focus groups as a desire to see ‘ghosts,’ or traces of past activity.

This led to several changes, including a ‘trail’ filter that displayed traces of action over time, the ability to record images and later mix them into the current video feed, and the ability for rules to trigger based on how long it had been since something happened. While these were useful, our biggest win came through a new filter, deviation, which measured how much each pixel in the image differed from its normal level over the last n frames. Deviation as a sensor allowed Affector to detect and draw attention to major changes that had recently happened, such as large changes in body position or people’s arrival or departure. In addition, deviation as a displayed distortion has an engaging, eerie quality that invites contemplation (see Figure 8): as persons enter the office, they are visible in outline, but transparent, displaying an inversion of the background image they have recently displaced; as they remain still, they gradually fade out, though their slight movements assures that their outline remains; when they leave, their ghostly impression gradually fade over time.

[insert Figure 8 about here]

Figure 8: Deviation displayed as a distortion

4.2.3 Primacy of aesthetic factors
As the deviation distortion suggests, our interest in what the system would feel like over its formal functionality unexpectedly but necessarily led to a central emphasis on the aesthetics of its look-and-feel. Certainly, the aesthetics of the display had been an object of some design work from the beginning: we intended the separation of the Affector window from the mundane, task-oriented desktop and its physical framing as a picture to support a metaphorical framing of Affector's images as a source for wonder and contemplation, rather than as a utilitarian tool for information extraction. But the role of aesthetic factors became absolutely crucial in the design of Affector v2.0, in the design of both the web interface and the Affector video output.

The control interface had been underutilized in Affector v1.0; we quickly settled on a ruleset we liked and rarely touched the controls thereafter. In part, this was due to the limited expressive value of the old Affector language; but equally, this may have been because the old interface, built with a utilitarian mindset, was clunky to both look at and use. In Affector v2.0, we worked to improve the pleasure and ease of use of the editor, moving from a multi-step form interaction to a WYSIWYG-style editor. Substantial attention was also paid to improving the visual appeal of the entire site, aiming to make it feel less like a necessary but unloved appendage to the ‘real’ Affector window, shifting it from a functional control interface to a positive part of the Affector experience.

The most aesthetic attention was devoted to the video images of Affector, a factor that played a – to us - surprisingly crucial role in developing rule sets. The role of aesthetics was not simply about ‘making it pretty,’ though we felt it did need to be visually appealing to succeed as a non-task-oriented, personally meaningful artifact. Instead, the focus of aesthetic attention was often on getting the right level of visual abstraction. Here ‘right’ meant the images did not give a literal rendition of office life, but instead evoked contemplation and encouraged engagement, along the lines suggested by ludic design or enchantment [Gaver, 2001; McCarthy, Wright, Wallace, and Dearden, 2006]. By defamiliarizing everyday views, we had the sense of not

1 It should perhaps be noted here that Warner, a physicist, had not been contaminated by familiarity with these works.
looking directly at one another, but at a moving painting that invited new interpretations.

The desire to support this property created demand for new kinds of filters as part of Affector’s visual language. We developed filters that were easier to recombine to create new expressions, and ones that supported moving away from a typical office view with a dull color palette, by, for example, increasing brightness, randomizing the color table, or shifting hue (see Figure 9). We found that pixelization, was a quick way to achieve abstraction from mundane, realistic views and developed new filters to ‘pixelize’ images in flexible ways into circles, crosses, lines or rectangles (see Figure 10).

![Figure 9: Shifting hue to move out of the 'office space'](image)

5. RE-THINKING EVALUATION

One of the problematics this special issue brings out is that the kind of knowledge gained through aesthetic approaches is not always compatible with what is recognized as knowledge production in HCI. For built systems, evaluation is the standard approach for validating knowledge claims. The role of evaluation in HCI is often conceptualized as drawing binary conclusions of success or failure, and it is tempting to use the evidence we collected to construct such conclusions for the use of Affector. Two years on, Sengers and Warner continue to actively use the system, and miss it when technical problems bring it down. From this perspective, we could declare the system a success. However, the system could also be declared a failure, since it failed to communicate emotion in the ways the designers originally anticipated. Yet, there is a more interesting story between these two poles, particularly given our refined interest in supporting the aesthetic experience, rather than the expression, of affect and connectedness. As an aesthetic experience, we are less interested in
assessing right or wrong [Shepherd, 2006] than exploring better or worse, compelling or alienating, resonant or discordant. The evaluation of Affector was therefore directed toward understanding what kinds of experiences transpired, how they were co-interpreted, what the designers were hoping to engender and how different design decisions did or did not support this.

Nevertheless, we often found ourselves slipping into an evaluation mode of confirming predictions or converging interpretations. For example, early on we predicted that if Affector worked it would increase face-to-face interactions, an effect we could easily measure. Despite the fact that Sengers and Warner believe that this prediction transpired (even in the face of initial data that suggested the opposite), we eventually realized how secondary this metric was to the actual experience of Affector.

The desire to instantly 'read' emotion, and do so correctly, the desire to be able to 'point to' the affect and narrate the system outsiders as expressing affect also suggests the lure of accuracy models of evaluation. We wanted to be able to convincingly demonstrate that affect had been captured, yet this conflicted with our view of emotional communication as an aesthetic experience embedded in a rich context and emerging over time in a sympathetic rather than shared way. Resolving this conflict required new answers to fundamental questions: Why is evaluation necessary in the first place? What do we hope to gain by it?

5.1 Why Evaluate?

On one hand, our evaluation identified implications of past design choices that, as previously articulated, informed future steps. On the other, just as we move from representation to response in design, we see the value of evaluating Affector not primarily in creating a definitive representation of the success or failure of a single system, but as a contribution to an ongoing conversation about the interfaces between technology and ineffable, aesthetic experiences. A core contribution, then, of our evaluation is the development of the concept of sympathetic awareness.
In this paper, we have offered very particular interpretations of two people interacting with Affector. These interpretations cannot support a general claim that Affector would be good for a broad class of users; such claims would require studies with more participants. Nevertheless, through our experiences we have identified design and evaluation strategies we believe may be useful for others. For example, experience diaries available to both participants simultaneously as well as the evaluator supported conversational exchange and reflection on both affect and Affector. We also demonstrated the effectiveness of a light-weight, communal, aesthetically focused snapshot diary: its ease of use, shared nature, and richness of expression made this a compelling and inviting method, extending its role beyond an evaluation tool to a critical component of the overall experience.

Nevertheless, we do not present these strategies as taxonomies or principles that dictate how to design for the ineffable and evaluate the resulting system. To do so would again fall into the mode of codification, reifying one particular experiment and its results into a formula for repetition. Instead, we offer these strategies and their implications as a way of sketching out a space to explore. For example, removing internal representations is not a rigid requirement; it serves to highlight for reflection the nature of representation and where its control lies.

5.2 Evaluating Evaluation

Moving away from the well-understood evaluation criteria of accuracy and prediction leaves a void we must fill with new criteria for assessing the results and process of evaluation. We feel an important criterion for evaluation beyond assessing the system and informing the next iteration is to develop a richer understanding of how the variety of choices made throughout the design process play off of each other, or what Tatar calls ‘design tensions’ [Tatar, in press]. Another criterion we found useful in approaching aesthetic experience is the extent to which data collection and analysis support surfacing idiosyncratic experiences. For example, rather than smoothing out differences, we seek to draw out alternate perspectives.
The evolution of the photo diary illustrates another criterion of the evaluation process – that the evaluation itself is an opportunity for open-ended and engaging experiences that challenge preconceptions of all participants. As the evaluation diary became a shared resource for all participants, Sengers and Warner added the ability to take pictures to illustrate and provoke comments. The result of these moves was a much richer resource for the evaluation process, and, simultaneously, a more engaging and enjoyable experience for Sengers and Warner. The photo diary became a critical part of the designed system. Rather than diarizing because they were ‘asked to’ they diarized because they wanted to. In similar ways, we see evaluation methods as providing input or stimuli for users to react to, and evaluation itself as response generation in an open conversation about how technology interfaces with aesthetic experiences.

5.3 From Judge to Provocateur

As we expand the way we think about evaluation, we also revisit the role of the evaluator. This work included external evaluators as a protection against autobiographical blinders to Affector’s shortcomings and limitations. Nevertheless, the role of the evaluator was not to arbitrate whether or not Affector reached its stated goals. Instead the role of the evaluator became to provoke – constantly drawing out and pushing on possible interpretations of the experience of Affector and how it reflected on the nature of technology for ineffable experiences.

6. THE INEFFABLE AND AESTHETIC PRACTICE

The preceding sections provided a detailed illustration of designing and evaluating for an aesthetic experience of emotional connectedness. In exploring this case study, we articulated strategies and perspectives, influenced largely by a humanistic orientation that may be useful guides for approaching other interfaces with ineffable experiences. Although these strategies may run counter in their implementation to traditional HCI, we would argue that designing for aesthetic experience entails bringing aesthetics into one’s practice as well influencing the design space one approaches.
Although this drive to incorporate aesthetics into an HCI practice is gaining momentum, our experience with presenting Affector to HCI audiences suggests that we must be prepared for challenges in this effort. In this section, we will highlight what we have found to be issues for meeting aesthetics on its own ground in terms of our practices. These are framed as questions about Affector but they reflect larger issues for the field of HCI.

6.1 Living A System Design

Perhaps one of the biggest issues HCI audiences have about Affector is its autobiographical design approach and its user population of two people. These characteristics seem to fly in the face of producing generalizable results; HCI tends to value not the particulars of a single use case but what can be taken from this use case and applied elsewhere. HCI researchers tend to eschew designing one-off systems. In order to promote generalizability, designing for an abstracted set of user requirements and testing systems with a larger population ensures a greater breadth of relevance.

However, using a first person perspective, as we did with Affector, provided more validity in our effort to design for experiences that may be difficult to articulate or identify. As users and designers of the system, we could continuously tweak the system so that its final design emerged through use. The system was in a sense ‘lived’ into being.

This sentiment of living the system echoes the familiar practice of iterative design for HCI; yet, we believe there is a subtle difference. As designers of the Affector system, we did not begin with an objective of designing for ‘sympathetic awareness’. We did not begin by defining what sympathetic awareness is and then produce designs to achieve this status, evaluate our progress and then produce another design. Although we did start with an objective of designing for a more vague sense of communicating an emotional mood or presence, the shape of this objective became more sophisticated through the design and use of the system. Therefore, the apparent weakness in an autobiographical design approach – namely the contingency of the results – is exactly the strength we draw on in order to design for the ineffable experience of
emotional connectedness. The generalizability that results is of a different nature. Rather than arguing that Affector is a generally useful 

**system**, we argue that sympathetic awareness is a generally useful concept.

### 6.2 Overcoming the Conduit Legacy

As mentioned previously, a common question following a presentation of Affector is ‘where’s the affect?’ People look at still shots or videos of the system in action and try to read the information for static representations of emotion. Even when Affector is presented as a counter to affective systems or ambient systems where the goal is to decode the visualization and decipher the system logic, the desire to read Affector as a conduit system is strong. However, as we have described earlier, this misses the point. Affector is not a symbol system. The ‘affect’ is not in the window’s distortions. The affect is in how the system is experienced.

The tendency to judge Affector as a symbol system that can be accurately and easily read is reflective of how we are most familiar with judging success and failure for communication systems. We can approach communication as the transferring of discrete information from one person (or machine) to another, but as we discovered with Affector, this was the least interesting part of the system. Meaning was not inserted into the animated distortions but was generated in response to the distortions. Evaluating for this kind of situated experience is not a new challenge in HCI but one we must face if we take the idea of aesthetics in practice seriously.

This challenge is presented as an opportunity for technology designers by Dunne and Raby [2001] who note: "As the intermediary between the consumer and the corporation, the design profession is in a perfect position to host a debate in the form of design proposals about technology, consumerism, and cultural value. But first designers will need to develop new communication strategies and move from narratives of production to narratives of consumption, or the aesthetics of use. That is, they will have to shift emphasis from the object and demonstrating its feasibility to the experiences it can offer." [p.60]
6.3 Appropriating Methods

The third issue we have encountered in response to Affector is the question of methods. We have discussed previously that the autobiographical approach is often viewed with a great deal of suspicion. One aspect of this approach that is often overlooked however is how this approach required a substantially longer amount of time to evolve than a quick and dirty use study would allow. Similar to the Media Spaces work referred to earlier, in order to allow deep reflections to emerge and be re-embodied in design this method requires actively designing and living with the system for extended periods of time, in our case over a period of two years. Although HCI values longitudinal studies, the timeframe for this type of work is less attractive – we suspect in part because of its incompatibility with publishing or product cycles but also because it makes reproducibility difficult.

Just as our design methods have run counter to many traditional HCI values, so too have our evaluation methods. For instance, our goal was not to declare the system a success or failure based on predetermined criteria but instead we wanted to narrate how it was that the system came to be known or lived as a success or failure. Yet despite our argument that the evaluation of Affector stands in contrast to traditional HCI methods, some may question whether the methods we present are really alternative. After all, photo diaries seem to be a fairly common tool for evaluation. However, we would argue that when the orientation is different, then the same methods are approached differently and take on very different meanings. In our use, photo diaries became a means for the users to communicate with each other and co-construct the meaning of the system, rather than a source of evidence for the evaluator to interpret. In other words, when we change our objective from adjudicating success to narrating what emerges as successful, the methods are implemented differently and lead to a new methodology: ways of understanding the epistemological implications of methods and how they may be appropriated for specific contexts.

Discussions about methodologies tends to be somewhat sidelined in HCI practice. As we have reported elsewhere [Boehner, Vertesi, Sengers, and Dourish, 2007] the field of HCI tends to be more comfortable with discussions at the level of method and once a method
has been validated, then further discussions about its interpretation and use seem unnecessary. For instance, the most recognized framework for presenting an HCI study is to have an introduction to the problem, the driving questions or hypothesis, a discussion of methods (but not a detailed discussion of why particular methods are chosen or how they might be appropriated for this particular study), the results, a discussion, and a conclusion. If any of these component parts is missing, it can be difficult for reviewers to identify the work as an HCI study. This in a sense is an example of how codification infiltrates not only our object of study but our discipline as well – the format for sharing our work can limit expression and contemplation about what may be more interesting parts of an aesthetic experience or practice.

6.4 Flipping the Margin of Aesthetics

Finally, a common reaction to the Affector project when presented to an HCI audience is that it should be considered an art piece rather than a useable system, too ‘artsy’ for the field of HCI. We raise this contention because it suggests an interesting counter question. What would it mean for something to be too ‘science-y’ for HCI? If the field of HCI is to meet aesthetics on its own terms in its practice as well as a domain of inquiry, then aesthetics cannot be marginalized at the fringes. The values of an aesthetic approach must rise to the same importance as the values of a scientific approach. An even stronger position would suggest that not only is bringing aesthetics into HCI about shoring up the arts and humanities to compete with or at least co-exist amicably with the sciences but to suggest that bringing aesthetics into HCI will lead to transformation in the scientific approach.

The goals of aesthetics often stand in contrast to the sciences and, since computing design has historically modeled itself on the sciences, a tension can be perceived in aesthetic practice and computing practice. Nake and Grabowski [2006] frame this as a dialectic between the opposing forces of computability (including formalism, generality, prediction and certainty) and aesthetic’s perceivability (including vagueness, exemplarity, interpretation and randomness). “Both have rules, but rules are very different in aesthetics and algorithms. An algorithmic rule is general and requests to be followed. An aesthetic
rule is singular and only states that something could be done this way” [Nake and Grabowski, 2006, p.57]. In presenting our case study of design, we have framed our strategies as ‘guides’ as opposed to formulas. An orientation of aesthetics values possibility as opposed to prescription, anticipation as opposed to prediction. We see the utility (and indeed the generalizability) of the strategies illuminated in this case study in how they might open up possibility for design in other situations as opposed to dictating how best to ‘capture’ the ineffable.

7. CONCLUSION

Our goal in this paper was to explore how to design for ineffable aesthetic experiences without codifying them. Through a tight coupling of design, use, and evaluation, combined with techniques and strategies to provoke and deepen ongoing reflection, we were able to uncover and react to unanticipated experiences as they unfolded. This openness was crucial when we recognized flaws in our initial design conception that reiterated the codified, contained view of emotion we were seeking to escape. In order to move beyond this sticking point, we altered the design to better speak to three core re-understandings of how to interface with the ineffable and in the process meet aesthetic experience on its own terms: (1) we pushed further beyond the window, out of the view that emotion could easily be contained in the display; (2) we took account in our designs of the difference between having information formally available and the ineffable experience of information as personally meaningful; (3) we recognized the importance of aesthetics of form in crafting indicators of emotion that supported ineffable interpretations, walking the line between saying so little that they could not be interpreted and saying so much that they are not interesting to interpret.

In addition to meeting aesthetic experience on its own terms as a domain for design, we also explored how to meet aesthetics on its own terms within the practice of HCI. These two objectives are obviously interrelated – what we design for influences how we approach design. Indeed, we see the central challenge we explored here in designing for aesthetic experience, namely the tendency to reduce the experience to abstract component parts, is also at play in bringing aesthetics into the
practice and culture of HCI. Although we may recognize that user experiences can be irreducible, we often still approach the experience of research, design, and evaluation of technology as bounded by set taxonomies and guided by recognized and reproducible methods. In other words, what becomes codified is not just the experience we design for but also the experience of researching, designing, and evaluating. In order to meet aesthetics on its own terms in our practice, we found we must break some of these codes and common conceptions of how HCI research should be done by straying into the personal, subjective, and idiosyncratic, and by staying open to multiple interpretations.

There is undeniable value in familiar HCI practices as well as in the power of codification for providing conventions on which to build. Our goal here is not to oppose these values or to claim that we can escape codification entirely. Rather, we seek to couple the necessary codification involved in technical practice intimately with the ineffable complexity of human activity and interpretation that enriches those codes and makes them not just right but meaningful.

ACKNOWLEDGMENTS

This work was funded in part by NSF Grants IIS-IIS-0238132 and IIS-0534445. We are indebted to our Affector collaborators: Simeon Warner, Eunyoung “Elie” Shin, David Klein, Rev Guron, Tom Jenkins, Yevgeniy “Eugene” Medynskiy, and Liz Goulding; our Affective Presence partners: Ken Anderson, Bill Gaver, Geri Gay, Kristina Höök, Katherine Isbister, Michael Mateas, Scott Mainwaring, and Jay Melican; and to Paul Dourish, Shay David, Brooke Foucault, Rogerio DePaula, Michael Golembewski, Joseph “Jofish” Kaye, Lucy Suchman, Petra Sundström, Elizabeth Wilson, and the Cornell Culturally Embedded Computing and HCI Groups.

REFERENCES


FIGURES

Figure 1. The Affecto Display

Figure 2. Sample Affecto Distortions
Figure 3. Typically chosen distortion to give a loose sense of someone’s presence.

Figure 4: Sketch of Salient Affector Characteristics.

Figure 5: The photo diary.

Wow, wow, what the heck is Simeon up to? This is cool! (I just noticed this because Simeon had exited stage right and that drew my eye.)

Phoebe’s picture of me below looks much better than what I got of Phoebe. Combination of edge detection, polariztion and then deviation. I think the problem is that edge detection is too noisy to be used with deviation.
Figure 6: Movement data visualized as greyscale

Figure 7: Pixelation where there is skin color
Figure 8: Deviation displayed as distortion

Figure 9: Shifting hues to move out of the 'office space'
Figure 10: New forms of pixelization move images out of the literal