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# Interactive Art, HCI and Hermeneutic Interpretation

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**Abstract**

Recent CHI publications and workshops have indicated an interest in the relationship between interactive art and HCI. This year's conference theme of art.science.balance also creates an opening for discussion between the two disciplines. This paper contributes to this discussion by presenting some challenges to dialogue between interactive art and HCI. I then illustrate by way of example affinities between the two disciplines. I conclude by pointing out that it is the challenges to dialogue which can potentially yield the most interesting results.

**Keywords**

Interactive art, hermeneutic interpretation, phenomenology, Heidegger, Gadamer, Rorty, totem, robot

**ACM Classification Keywords**

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

**Introduction**

Recent CHI publications [7, 12] and workshops [1, 11] have indicated an interest in the intersections of interactive art and HCI practice. These discussions come at a time when HCI practice is expanding the

domain of experience and relationships to technological artifacts which it considers. Recent research and inquiry into phenomenological frameworks [4, 7], critical practice [4, 22], experience-focused HCI [14], ambiguity [7] and uncertainty [2, 8] push beyond the horizon of normative HCI thought.

In this paper I discuss some challenges to dialogue between interactive art and HCI. I then illustrate by way of example affinities between the two disciplines.

### Challenges

The question, “What is art?” is persistent within the fields of design, architecture and art practice and criticism. Boundaries of the definition keep changing, yet we can inquire into the territory. In this paper, I use the term *art* in a general sense to mean aspects of aesthetic experience from art practice to experiencing a work of art as a visitor. I use the term *work of art* to specify the artifact.

#### *Art engages the irrational.*

This notion of the irrational in art can be characterized in various ways such as the ineffable, the work of the muse, etc. depending upon the cultural lens this concept is viewed through. Cultural anthropologist Bradd Shore writes that the term *rationality* is subject to multiple definitions, of which he lists nine [24]. Shore argues that the orientation of contemporary Western society privileges the logical, or Aristotelian, variant of rationality. This type of rationality excels in deductive reasoning, hypothesis testing, the manipulation of abstract logical concepts, and the interpretation of truth as correctness, leaving experiences which don’t follow consistent logical rules to either be described by secondary forms of

rationality, such as contemplative reason, or exist beyond the pale of reason as irrational. Similarly, normative HCI research, which prioritizes scientific practice, would consider many aspects of the aesthetic experience to be irrational.

This characterization of art as irrational still holds if we interpret aesthetic experience through a phenomenological framework. In phenomenologist Martin Heidegger’s essay on the aesthetic experience, “The Origin of the Work of Art,” the work of art is characterized as revealing the truth that the truth is concealed [11]. For Heidegger, the work of art mediates the relationship between the contextualized, understandable nexus of things (*world*) and the unknowable (*earth*). In other words, we must be hermeneutically situated in a cultural understanding of art in order to perceive a work as art, but this understanding will have a dynamic horizon based on the interplay between the understood and that which is beyond our understanding.

Heidegger’s treatment of aesthetic experience becomes the hermeneutic inquiry of later phenomenologist Hans-Georg Gadamer. Gadamer originated the contemporary conception of hermeneutic inquiry as a situated process as opposed to a rule-based methodology [6]. He generalizes Heidegger’s thought with respect to the work of art and applies it to hermeneutics as interpretation of experience. In Gadamer’s thought, understanding is tied to language. We are able to articulate experiences which, through a combination of the historical development of our culture’s language and our prior experiences, are expressible. Beyond the horizon of these contexts for meaning lies the strange.

Furthermore, for Gadamer, play and art as play are significant means of engaging with this horizon [6].

The descriptions of art and experience in this section have a common conceptualization whereby the alien is characterized as beyond the recognition of a rational filter, understanding or language; however, its existence is assumed. Moreover, through changing one's concept of rationality or contextual-cultural situatedness, the limits of rationality, the horizon of understanding, changes. My point in this section is that whatever the context, there will always be experience which lies beyond reason, description and the culturally determined notions of rationality. Art engages such experience (though, of course, it does not exhaust it, nor is it the only form of experience to engage the irrational). Gaver expresses this sense in the context of the cultural probes design practice:

...the Probes embodied an approach to design that recognizes and embraces the notion that knowledge has limits. It's an approach that values uncertainty, play, exploration, and subjective interpretation as ways of dealing with those limits [8].

To summarize the challenge for HCI, whether we apprehend art through the lens of normative or phenomenological HCI, there will always be aspects of art experience beyond validation, in the case of normative HCI, and articulation, in the case of phenomenological HCI.

Another challenge to the relationship between HCI practice and art practice is that, from the point of view of artists, the territory must be respected. Art engages

something beyond description, beyond vocabulary, beyond language; as such, there will always be a sense in which it cannot be validated. To paraphrase neopragmatist philosopher Richard Rorty, discussed below, to think otherwise amounts to a power play. To assume that in all things there is an implicit that needs to be made explicit is the replacement of creativity with power [19].

*Art practice is highly contingent.*

Contingency in common usage can refer to a sense of uncertainty or risk. In design, the term can refer to the implications of the situatedness of an artifact, for example the recognition that an artifact is situated in a nexus of relationships and that these relationships have a reciprocated effect on the artifact. Contingency with respect to the human actor is a theme in Lucy Suchman's work [25]. With respect to the practice of creating art, I follow our historical chain of hermeneutic thought to the work of Richard Rorty.

Rorty characterizes contingency as "the fragility and riskiness of any human project" [19]. Artists are skilled practitioners who develop skill through repeated creation and presentation of artifacts. Exhibition of these artifacts completes a cycle of understanding for the artist, who can then carry this experience forward into future projects. This practice is marked by contingency in the Rortean sense because responsibility for the work lies with the artist's engagement with the horizon of understanding, not on external methodologies or notions of truth as correctness. I hazard a guess that artists reading this paper will recognize the feeling of contingency, that episodic, elated nervousness that accompanies the experience of creating works of art. As described in the section

above, it is exactly this unpredictability, this engagement with the irrational, which creates openings for aesthetic discovery.

Rorty substitutes Heidegger's emphasis on the aesthetic experience in "The Origin of the Work of Art" with the individual that can construct possibilities beyond the horizon, "final vocabularies" [19], p. 38], the rational. It is in this sense that Rorty writes "'the irrational' is essential to intellectual progress [20], p. 14].

A challenge for HCI's dialogue with interactive art is that it will need to develop a lens through which to understand an experience of discovery beyond methodology or verification which in fact embraces risk, unpredictability and consequences in the service of pushing the horizon of understanding.

### **Affinities**

The history of interactive and technological art created using contemporary electronics coincides with the history of HCI. Notable developments include the organization of E.A.T. (Experiments in Art and Technology) by Billy Klüver and Robert Rauschenberg in 1966, the PARC and Interval Research artist-in-residence programs through the 1990s, and the organization of SIGGRAPH (1969), Ars Electronica (1979), and Zentrum für Kunst und Medientechnologie (origins from mid 1980s). More recently, the National Research Council published an exploration of interdisciplinary computing/art collaboration [16] and Jill Scott initiated the Artists-in-Labs program [23].

HCI and interactive art continue to bump up against each other due to affinities in their nature. In addition

to the work cited above and in the Introduction, recent interest in art has been expressed through Elizabeth Mynatt's call for "scaffolding to support...creativity...and joy" in her recent talk on future research directions of Georgia Institute of Technology's Graphics, Visualization and Usability (GVU) Center, "Charting GVU's Future" [17], as well as Phoebe Senger's GVU talk querying art's relationship to HCI [21].

Affinities between interactive art and HCI include a shared prototyping (design and build) culture, interest in engaging interaction, and a critical technical practice. The following section illustrates these affinities by way of example.

### **Robotany**

In 2006 I built and exhibited, with the help of collaborators John Taylor, Daniel Bauen and Joe Martin, an interactive art project called *Breeze*. Breeze is a roboticized live Japanese maple that interacts with visitors by sensing and responding to their presence and movement through a return gesture.

#### *Design and build*

I designed Breeze around the radial morphology of a tree; thus, its sensing and actuation systems operate through 360°. Breeze sees through a 360° eye positioned above the canopy and hears through compound ears built from a custom ultrasonic sensor array radially positioned around its base below the canopy. The entire canopy was activated by the shape memory alloy nitinol. Technical contributions include an exploration of a non-android robot morphology, the sensing apparatus, and the novel configuration of the nitinol actuation system. This actuation system has

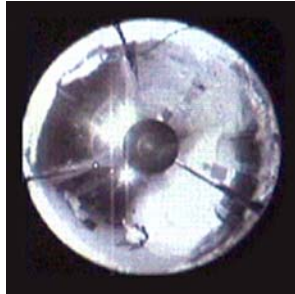


Fig. 1. Breeze's 360° 'eye'

been disclosed to Georgia Institute of Technology's licensing office for patent investigation.

#### *Interaction*

Breeze appeared at the Belluard Bollwerk International Festival in Fribourg, Switzerland in summer 2006 (Breeze is funded by the Canton of Fribourg and Fondation Nestlé pour l'Arte). Consistently I, my collaborators and festival administrators witnessed and documented visitors engaged in ongoing and evolving physical dialog with the tree. We witnessed and documented a range of spontaneous, unscripted behaviours and movements such as dancing, waving, and even kissing, petting and toasting Breeze with wine. As one can suppose from these examples, the overall stance of visitors toward Breeze was affectionate. A group joined hands around the tree and sang to it. It was common to witness passersby greeting and saying goodbye to Breeze. These behaviours were exhibited across genders and at age groups from one year through roughly seventy years old. Video documentation is available at [dm.gatech.edu/~jill/robotany](http://dm.gatech.edu/~jill/robotany).

#### *Critical practice*

As discussed above, artists are skilled practitioners who develop skill through repeated creation and presentation of artifacts. Exhibition of these artifacts completes a cycle of understanding for the artist, who can then carry this experience forward into future projects. I was not able to attach meaning to this project until it was visited by festival attendees. Witnessing their interaction with the tree, and the tree's interaction with them, I began to understand Breeze as a totem [3].



Figure 2. Visitors interacting with Breeze.

I did not conduct participant interviews or use ethnographic methods to understand how visitors understood the tree. As an artist, I refuse to interrupt a visitor's aesthetic experience. This interruption would override my goals as an artist of providing an aesthetic experience. Also, the end of an aesthetic experience cannot be specified. Is the experience over when the visitor steps away from the piece? Leaves the premises? Goes to sleep that night? Many people repeatedly visited the tree during the three weeks of

the festival. Many, as mentioned above, would greet the tree while passing. Was the aesthetic experience continuous between visits?

Shore writes that classic anthropological totemism is “the ‘participation’ of humans with the world of plants and animals” [24], p. 183]. He emphasizes the word *participation* because it refers to a mode of embodied interaction in the world articulated by anthropologist Lucien Lévy-Brühl [15]. This notion of embodied participation in the world has affinities with Heidegger’s notion of everyday action in the world [10] and Dourish’s embodied interaction [5]. Shore’s interest in Lévy-Brühl’s notion of participation lies in its characterization as an alternative mode of thought beyond logical rationality.

Such embodied participation with totems pushes boundaries of rational experience in both senses described in the Challenges section above. On one hand, embodied participation as a type of rationality will engage different notions of what is rational and what is irrational. Novel understandings will appear and understandings conventional to logical rationality will become invisible.

From Rorty’s point of view, metaphors such as totems are a “growing point of language,” [20], p. 12]. In Rorty’s antirepresentational conception, a metaphor is “a voice from outside logical space, rather than an empirical filling-up of a portion of that space, or a logical-philosophical clarification of the structure of that space” [20], p. 13]. In other words, metaphor in this sense can reorient the horizon of understanding.



Figure 3. Visitors interacting with Breeze.

A Heideggerian interpretation of visitors’ embodied interaction with the totem bears special attention. Breeze’s manifestation (revelment) as a totem occurs in an opening, or clearing, through which possibilities for interaction emerge. This clearing is an illustration of Heidegger’s structure, *Lichtung* [10]. The *Lichtung* is a field of possibilities for interaction. The nature of the beings, objects and the context (Heidegger’s *world*) of the interaction determine the possibilities presented.

The *Lichtung* is one of many structures in Heideggerian thought which support his concern with action in the everyday world as the proper study of phenomenology. In [3], I contrast this emphasis with that of Husserl, the founder of the phenomenological movement. Husserl studied the lived world as accessible through perception. For Husserl, the primary reality of a thing is how it appears in one’s consciousness. One gets significantly different results when analyzing experience using Husserlian vs. Heideggerian phenomenology.

Other Heideggerian structures which support his emphasis on everyday action include a framework for interaction with artifacts, whereby the artifacts are understood as entities enmeshed in a nexus of relationships, and his notion of a world, or the social and cultural situatedness of a human being.

### Conclusions

To summarize, this paper presents art's engagement with irrationality and contingency as challenges to dialogue between interactive art and HCI; however, these challenges have a close relationship with hermeneutic interpretation in the phenomenological tradition. The interpretation of the interactive art piece Breeze within this framework illustrates a characterization of interaction in terms of dynamic horizons of understanding and fields of possibilities for interaction.

The affinities between interactive art and HCI practices illustrated here created an opening for this discussion. These three affinities, shared prototyping culture, interest in engaging interaction, and a critical technical practice, can continue to provide such openings.

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